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# Vitamin Research News

Dedicated to the Scientific Pursuit of Better Health

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October 2003, Vol. 17, Number 10

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## The President's Desk

### Part III: Is Conventional Medicine (CM) Evidence-Based?

In this installment of excerpted highlights from “*Is Conventional Medicine (CM) Evidence-Based?*” by recognized hormone replacement researcher, John Lee MD, we continue with part three of our four-part series presenting Dr. Lee’s observations on the qualitative differences between Conventional Medicine and Alternative Medicine.

- *Conventional Medicine teaches there is no human or animal evidence that progesterone builds bone. The evidence is that progesterone promotes new bone formation and that estrogen merely delays bone loss.*
- *Conventional Medicine believes that Fosomax is a good treatment for osteoporosis. The evidence is that Fosomax is less effective than Premarin plus progestin and has considerably more undesirable side effects.*
- *Conventional Medicine claims that raloxifene (Evista) is good treatment for osteoporosis. A major 3-year study in 1999 found, however, that raloxifene may reduce the incidence of minor vertebral compression fractures but the occurrence of osteoporotic nonvertebral fractures (including hip fractures) in raloxifene-treated women was no different than that of placebo.*
- *Conventional Medicine believes fluoride is good for preventing and/or treating osteoporosis. A major NIH consensus panel (11 pages) makes no mention of fluoride, but does include the important role of sex hormones.*

- *Conventional Medicine believes that the presence of progesterone receptors (PR +) in breast cancer cells is a contraindication for progesterone supplementation. The evidence is that PRs are produced by estrogen and that the effect of progesterone is to prevent breast cells from becoming cancer cells. The more PRs found, the greater is the estrogen dominance, and the greater is the need for more progesterone.*
- *Conventional Medicine believes that testosterone causes prostate cancer. The evidence is that estradiol causes prostate cancer, an opinion shared by the NCI. My hypothesis is that progesterone decreases in aging men, leading to a fall in testosterone levels. Also, testosterone is converted into dihydrotestosterone (DHT) by the action of 5 $\alpha$ -reductase, an enzyme normally inhibited by progesterone. As testosterone levels fall, estradiol's effect increases. Estradiol promotes the oncogene, Bcl-2, whereas progesterone promotes the protective gene, p53. The evidence is that prostate hypertrophy and prostate cancer are correlated with estradiol dominance, i.e., the ratio of estradiol/testosterone is increased in men with these problems.*
- *Conventional Medicine believes that total androgen blockade is the treatment of choice for advanced prostate cancer. The evidence from an overview of 27 trials involving 8000 prostate cancer patients is that addition of total androgen blockade improves 5-year survival by only 2% and 10-year survival by only 0.7%. Further, total androgen blockade greatly increases the incidence and severity of side effects such as depression, dementia, and diarrhea.*
- *Conventional Medicine believes that serum cholesterol levels are the result of dietary fat. The evidence is that the glycemic index of the diet (sugars and refined starches) is a stronger predictor than dietary fat of serum HDL-cholesterol concentration.*
- *Conventional Medicine believes that dietary egg consumption contributes to elevated serum cholesterol concentrations and to the risk of cardiovascular disease in men and women. The Health Professionals Follow-up Study (1986-1994) and the Nurses' Health Study (1980-1994) found no correlation between egg consumption (from 1 egg/week to >1 egg/day) and the risk of CHD or stroke in either (non-diabetic) men or women.*
- *For years Conventional Medicine believed that estrogen would be good treatment for women with Alzheimer's disease. Now, a randomized, double-blind, placebo-controlled trial finds that it is no better than placebo.*
- *Conventional Medicine assures women that tubal ligation does not alter their hormone status. A 1979 study found that midluteal mean serum progesterone level in normal women in whom unstimulated conception occurred is 18.6 ng/ml and all above 10 ng/ml. In normal women after bilateral tubal ligation, the midluteal mean serum progesterone is only 9.4 ng/ml (50% less).*
- *Conventional Medicine teaches that progesterone plays no role in PMS. The facts are that PMS patients have significantly diminished concentrations of a progesterone metabolite, allopregnano-lone (an anxiolytic), and a blunted response to GnRH*

*prompt, compared to normal women. It is the ratio of these factors relative to estradiol that is important, rather than simply their individual absolute values.*

Thank you Dr. Lee! More to come next month when we conclude our four-part series.

**Robert Watson**  
President/CEO

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## A Highly Effective Anti-Aging Supplement: **Ribonucleic Acid**

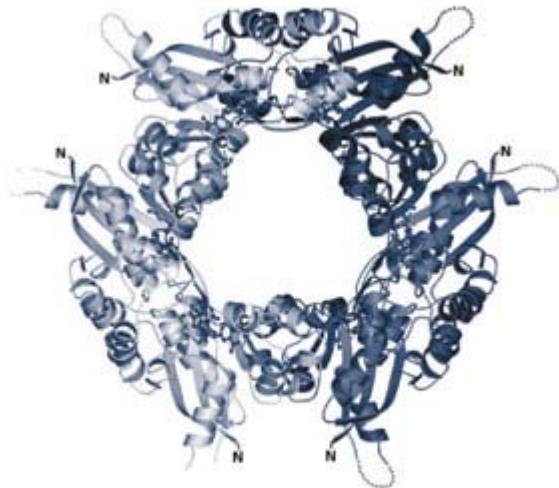
by Ward Dean, MD

Durk Pearson and Sandy Shaw's 1982 bestselling book, *Life Extension— A Practical, Scientific Approach* (more than 2.5 million copies sold), is generally recognized as the spark that ignited the currently popular field of anti-aging/life extension medicine. Pearson and Shaw's blockbuster extolled the free radical theory of aging and introduced the terms *free radicals* and *antioxidants* to millions of non-scientist health enthusiasts. However, Pearson and Shaw's success was partially due to another popular book that helped to pave the way, which preceded their publication by six years.

In 1976, a pioneering New York medical doctor named Benjamin Frank created a minor sensation with his book—*Dr.*

*Frank's No-Aging Diet*. Dr. Frank was unique. He was not only an M.D., but also had a Ph.D. in biochemistry. He was simultaneously a practicing physician and researcher, performing anti-aging experiments with mice and rats in, addition to taking care of his patients.

Dr. Frank was ahead of his time. He was an early advocate of high-dose vitamin therapy (especially Bs, C, & E), plus other nutrients not well known or available in the early 60s through the mid-70s when he did most of his research. For example, he recommended the use of carnosine, CoQ10, lipoic acid, DMG (then known as "Vitamin B15"), glycerol phosphate (magnesium glycerophosphate — he believed



**Fig 1.** RNA functions to convert nucleic acid sequences into proteins.

several grams per day promoted cell membrane integrity, and also restored receptors), vanadium, orotic acid, lecithin, choline, and inositol. A further indication of his foresight was his recommendation of the use of biguanide drugs like Metformin, which is now becoming recognized as one of the most effective anti-aging drugs currently available (see my article, *Metformin—An Effective and Underappreciated Life Extension Drug*, in the November 1998 issue of *Vitamin Research News*).

### **Dr. Frank's Theory of Aging**

Dr. Frank theorized that aging and degenerative diseases are caused by the loss of cellular energy production (ATP) due to membrane damage and decreased efficiency of the Krebs's cycle and the associated electron transport chain. He also believed that damage to cellular DNA from free radicals and crosslinkages could not be repaired due to inadequate cellular energy and availability of "raw materials" (i.e., nucleotides and nucleic acids [Fig.1.]) to repair the DNA. He believed that this decay of DNA further led to improper formation of messenger RNA and ribosomal RNA, which in turn led to abnormalities and structural defects in the cell. Frank's theory is clearly related to the mitochondrial, free radical, crosslinkage, and membrane theories of aging, all previously discussed in *Vitamin Research News*.

The key difference between Dr. Frank's theory and the approach used by advocates of the other related theories is the specific anti-aging therapy that he recommended—high-dose nucleic acids, combined with high potency multivitamins. Dr. Frank did not discount the approaches recommended by other researchers—he believed, however, that their methods (i.e., antioxidants, cross-linkage inhibitors) would not be effective unless combined with adequate amounts of RNA.

Dr. Frank believed that one cause of inadequate concentrations of RNA and nucleotides for repair and production of energy is an age-related increase in enzymes that destroy nucleic acids (i.e., nucleases—specifically, ribonuclease, which breaks down RNA). As people grow older, ribonuclease enzyme activity has been reported to increase. Consequently, just as the requirement to repair damaged cells increases, the substances required for this repair (nucleic acids) are being degraded by higher concentrations of destructive enzymes. Consequently, Dr. Frank believed older people have an even higher requirement for nucleic acids than younger people. Thus, the older we get, the greater our need for



**Fig 2.** Dr. Ben Frank.

nucleic acids, both for replacement and for repair.

### **Nucleic Acids as Potential Life Extending, Disease-Preventing Nutrients**

Dr. Frank believed that exogenous RNA, especially when combined with associated B vitamins, minerals, amino acids, and sugars (like D-ribose) would enter the cell and aid in normal regeneration of the damaged cellular elements. This would, in turn, bring about normal enzyme synthesis and activation, and most importantly would increase cellular energy production. For this reason, Frank believed that providing RNA and associated compounds would aid in the repair of damaged DNA. He knew that ribonucleic acid is important in the initiation of DNA synthesis, acting in a coenzyme-like fashion. Dr. Frank stated, "The importance of nucleic acids in protein synthesis and in enzyme synthesis, as well as the importance of RNA in bringing about DNA synthesis, and the actually observed anti-aging effects of nucleic acids on whole man, support the claims regarding the value of increased intake of nucleic acids in the prevention and treatment of cellular degeneration."

Dr. Frank claimed that not only do nucleic acids (1) decrease overall oxygen utilization, but also (2) increase its inherent effectiveness, lessening potential oxidative damage to the cell. He believed that the "anti-anoxia effect" of nucleic acids (ability to do better work on less oxygen) was due to the increased synthesis of CoQ10 and enhancement of the efficiency of Krebs's cycle and respiratory chain. He believed nucleic acids might even lead to increased synthesis of mitochondria.

#### **Effects of Nucleic Acids**

- **Marked increase in "energy" or activity**
- **Antianoxia action (i.e., reduced shortness of breath)**
- **Increased ability to tolerate low temperatures**
- **Decreased skin wrinkling and increased skin elasticity**
- **Improved cognitive performance**
- **Immune enhancement**

Dr. Frank described the dramatic results of his use of oral and injectable ribonucleic acid in the prevention and treatment of a wide variety of age-related illnesses. He used a nucleic acid-rich diet and nucleic acid extracts for a variety of ills including emphysema, heart disease, diabetic complications, arthritis, fading eyesight, memory loss, and other diseases of aging. He believed that nucleic acids should be considered as essential nutrients, along with fats, carbohydrates, proteins, vitamins and minerals.

Dr. Frank reported that a common finding of those on a high nucleic acid diet was a normalization of blood lipid levels. This was reflected by a drop in total cholesterol and triglycerides, and an elevation of HDL. He believed that the cholesterol-lowering

effect of nucleic acid-rich diets was due to increased ATP formation, enhanced electron transport chain activity, improved CoQ10 and cytochrome oxidase synthesis, and increased NADH oxidation.

He also reported that some of the earliest noticeable effects of RNA therapy were *increased energy*, followed by *improved skin tone*, with *increased elasticity* and *reduction in fine wrinkles*. He frequently referred to the skin-tightening effect, causing folds to diminish and the skin to acquire a tighter and more youthful appearance.

<b>Clinical Uses</b>	
<ul style="list-style-type: none"> <li>• <b>Arthritis</b></li> <li>• <b>Atherosclerosis</b></li> <li>• <b>Hyperlipidemia</b></li> <li>• <b>Cancer</b></li> <li>• <b>Diabetes and complications</b></li> <li>• <b>Emphysema</b></li> <li>• <b>Colds</b></li> <li>• <b>Glaucoma</b></li> <li>• <b>Poor vision</b></li> <li>• <b>Retinitis pigmentosa</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Reduced skin wrinkles</b></li> <li>• <b>Acne</b></li> <li>• <b>Hair growth</b></li> <li>• <b>Psoriasis</b></li> <li>• <b>Diverticulitis</b></li> <li>• <b>Memory loss</b></li> <li>• <b>Parkinson's Disease</b></li> <li>• <b>ALS</b></li> <li>• <b>Bell's Palsy</b></li> <li>• <b>Lupus erythematosus</b></li> </ul>

**Frank's dietary recommendations included:**

- Four days per week—eat one can of small sardines.
- Eat fish on the other three days.
- Calve's liver once/week
- Lentils, peas, lima beans, or soybeans.
- Asparagus, radishes, onions, scallions, mushrooms, spinach, cauliflower, or celery.
- Seven glasses of fluid per day—4 of water, 2 milk, and 1 vegetable.

While most modern nutritionists attribute the benefits of a high fish diet to the concentration of omega 3 fatty acids, Dr. Frank was of the opinion that it was primarily due to the high content of nucleic acids in most fish, and especially in sardines. (He did not discount the possible benefit of the omega 3 fatty acids, but believed that they were merely a synergistic adjunct to the nucleic acids.) He reported that sardines contain 1.5% nucleic acid, liver approximately 0.5%, and muscle meat 0.05%. Consequently, Dr. Frank had many anti-aging activists in the mid-70s eating sardines like crazy. (Frankly, I got sick of eating sardine sandwiches!)

*Dr. Frank recommended consuming a minimum of 1.5 gm daily of nucleic acid for general health and well being.* However, he recommended much higher doses for those with specific health concerns. He cautioned, however, that when taking higher therapeutic doses of RNA, that urine pH be only slightly in the acid range. He found

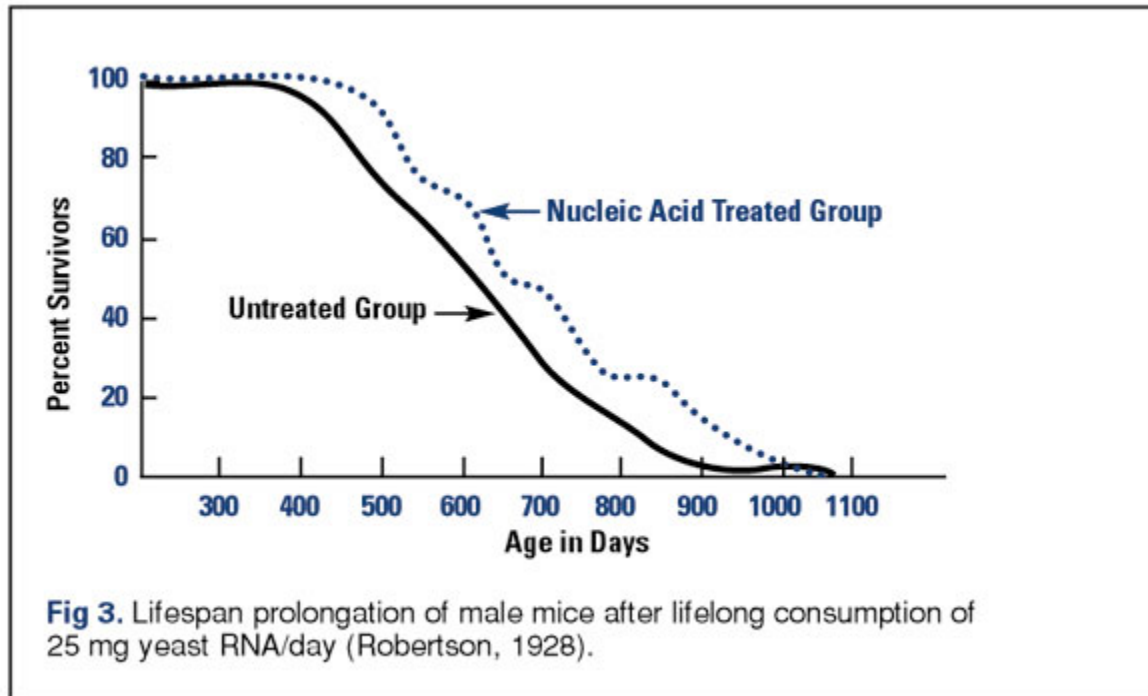
that highly acidic urine with a high RNA diet (more than 2 gm daily) may result in elevated levels of uric acid in the blood, which can cause kidney stones. This can be easily prevented by drinking plenty of water. Urine acid-base balance (pH) can be easily tested by using urine pH test strips.

Clinically, Dr. Frank used dosages of RNA between 500 mg-20 gm. He usually recommended the higher doses (over 5 grams) be used several times per week. If dosages higher than 2 gm daily were taken, Dr. Frank recommended doing so under the care of a physician, where BUN, creatinine and uric acid levels could be monitored, and recommended that the urine pH be maintained near 6 (i.e., between 5.0-7.0). Dr. Frank stated that those with uric acid of 2-3 mg can take considerably larger amounts of nucleic acid than those with levels closer to 5, 6, or 7 mg. Higher amounts of uric acid can be better tolerated in near alkaline urine than in very acid urine. It should be noted that he never observed any problems in people with normal kidney function, who drank adequate fluids and maintained urine pH in the desired range. He recommended that additional protection could be gained by consuming adequate amounts (500-1,000 mg) of magnesium each day.

#### **Historical Basis of RNA as an Anti-Aging Supplement**

Dr. Frank was not the first to experiment with nucleic acids. In 1908, Dr. C.S. Minot first proposed that nucleic acids were vital for the health of cells and were essential for the longevity of the organism. However, the first evidence that nucleic acids might actually promote longevity was demonstrated by a series of experiments conducted by Dr. T. Brailsford Robertson in Australia in 1928. Dr. Robertson believed that the lifespan of organisms was determined by the ratio of nuclear (chromosomal) materials to the cytoplasm (protein) of the cells. He referred to this ratio as the “nucleocytoplasmic ratio”—and proposed that the way to optimize this ratio was to supply the nuclei of the organism with nutrients in “excessive abundance.”

He tested his hypothesis in a series of experiments. He used 30-40 male and 30-40 female mice in each test group, with a similar group of controls in each experiment. The test groups received 25 mg of yeast nucleic acid each day throughout their lives. Robertson’s hypothesis was apparently confirmed, as the results were strikingly and uniformly positive. He reported an average lifespan extension of 12.5% for males, and 17% for females (Fig. 3).



Despite these positive, provocative results, almost twenty years elapsed before any further research was done in this area. In the mid-1940s, Dr. Thomas Gardner, an organic chemist in the scientific department of Hoffman-La Roche, picked up where Robertson had left off. Gardner agreed with Robertson's hypothesis that the nucleocytoplasmic ratio decreased with aging, but was not convinced that correcting this ratio was the mechanism of RNA's life-prolonging effects. He proposed several other possible mechanisms for these benefits. He suggested that nucleic acids might slow down the metabolism of the nucleus of the cell. He reasoned that if nucleic acids were provided to the cell in high amounts, they could be utilized in metabolism without destroying the nucleus or cytoplasm, and thereby enable the cells to live longer at a higher energy level. Alternatively, he theorized that the life-prolonging effect of yeast nucleic acid might be due to its ability to stimulate the immune system, since sodium yeast nucleinate was known to stimulate the growth and proliferation of white blood cells (leukocytes). He equated this to the proposed anti-aging effects of Anti-Reticulo Cytotoxic Serum (ARCS) then being used in Russia (Bogomolets). ARCS was briefly reviewed in the August, 2003 issue of *Vitamin Research News*.

Whatever the mechanism, Gardner attempted to replicate Robertson's work, with several modifications. First, he began his studies with mice that were 600 days old (instead of beginning treatment after weaning, as Robertson had done), because "mice are beginning to get old at that age." Also, he believed that Robertson's dosages were unrealistically high. He calculated that 25 mg per mouse per day would translate into a human dose of 55 gm per day. Gardner was apparently considering human use of RNA, and realized that few humans could consume such high doses. Consequently, Gardner administered 1/10th of the dosage used by Robertson, resulting in a daily RNA dosage of 2.5 mg per mouse per day. This corresponded to

an equivalent human dosage of 5.5 grams per day, which Gardner believed could be practically consumed.

Gardner used 72 female and 31 male albino mice, divided into test and control groups. Gardner reported that the treated mice retained vitality and vigor longer than the controls, fewer went blind, and the treated mice appeared healthier and exhibited greater activity than the controls. Although the lifespan extension of the mice receiving nucleic acids was not as great as reported by Robertson, there was an overall trend toward increased longevity in the nucleic acid-treated mice. Gardner attributed his less spectacular results to the fact that he started the experiment when the mice were already advanced in age, and that the dosage was so much less than that administered by Robertson.

Interestingly, Gardner reported that Robertson and his staff had taken 15 gm yeast nucleic acid per day, and that Gardner himself (perhaps as a result of observing his healthy mice) had been taking 5 gm of yeast nucleic acid for weeks “without any ill effects.” He concluded that “As Robertson tested with three times the amounts I have suggested for [human] use, there is no reason known at the present time for fearing to use yeast nucleic acid freely for veterinary experimental purposes...and...for extending their life spans as well as for experimental therapy on aging men and women for the same purpose.”

Nearly another twenty years were to elapse before further experiments with RNA were conducted—this time with even more spectacular results. Dr. Max Odens conducted a study with ten 750-day-old rats, of a species that had a normal lifespan of 800-900 days. Five rats were untreated controls. The other five received weekly injections of “DNA solution in water...plus ordinary RNA.” Unfortunately, details of the exact composition and dosage that was administered were not given. After twelve weeks of injections, Odens reported that the treated rats looked younger, were very lively, and had gained weight, in contrast to the untreated rats which “looked old, moved slowly, did not eat much, and had lost weight. The difference was remarkable.” Odens further reported that all of the untreated rats died before 900 days, while 4 of the treated rats survived between 1600 and 1900 days, and one rat lived 2250 days! Odens concluded that “with weekly injections of DNA and RNA, the life span of 4 rats was doubled on the average, and the life span of the fifth rat was more than trebled.” These results are frankly, hard to believe. But some credence must be given this report, considering the journal in which it was published—the prestigious *Journal of the American Geriatrics Society*.

### **Conclusion**

The claims for the life-extending benefit of nucleic acid administration are supported by a diverse series of experiments that span nearly 50 years. Based on these findings and the reports by Dr. Frank of its widespread clinical benefits with human use, I consequently agree with Dr. Frank’s recommendation to add at least 1.5 grams per day of nucleic acids to an anti-aging nutritional supplement regimen. This recommendation is buttressed by the facts that two of the research teams admitted taking high dose nucleic acids themselves, after seeing the effects they had on their experimental animals, and that the third researcher also recommended consideration

of nucleic acid supplementation for human and veterinary use. It is surprising that more researchers have not attempted to replicate these studies—especially when considering the high degree of safety and minimal cost of high quality yeast-derived nucleic acids that are available today. :

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## Analysis of a Recent Headline-Grabbing Article **Gugulipid Ineffective as Lipid-Lowering Agent?**

by Ward Dean, MD

Gugulipid is a dietary supplement that has been used for centuries as a lipid-lowering agent in India. Nine published human clinical trials have confirmed its efficacy in reducing cholesterol in an Indian population. However, a recent study called into question whether Gugulipid had the same benefits in an American population, as it has previously demonstrated in India. Scientists at the University of Pennsylvania performed the study, published in a recent issue of the *Journal of the American Medical Association* (Szapary, et al, 2003). The study involved eighty-five men and women, divided into three groups—a placebo group, a “standard dose” group (3,000 mg of gugulipid daily), and a “high dose” group (6,000 mg daily). The purpose of the study was to evaluate the effects of gugulipid on total cholesterol, HDL, and LDL. The results of the 8-week study surprisingly resulted in *no change* in total cholesterol, a slight *decrease* of high-density cholesterol (HDL-C), and a slight increase of low-density lipoproteins (LDL-C).

Based on these findings, newspapers around the country blared headlines such as, “Herbal Supplement Found to Increase Cholesterol.” Naturally, this caused many people who had been taking gugulipid-containing products to wonder whether they had been wasting their money, or even harming themselves by taking this product. I wondered about this myself.

I carefully reviewed the original article. It appeared to be a good study. However, there were several things mentioned “between the lines” that were not discussed in

the review articles of the study that appeared in the popular press, and which were not emphasized in the study's conclusions. The primary purpose of the study was to determine whether gugulipid had a cholesterol-lowering effect on a Western population. The results indicated that it did not.

I wondered, however, whether there was a sub-group of the population for whom gugulipid might be effective. I know that "not every product works for everyone." If that were the case, there would only be one drug or nutrient for every condition. I reviewed the data and analysis of the study and found that this was, in fact, the case. Nearly twenty percent of the participants in the study did experience a beneficial effect on serum lipids. However, this effect was "hidden" in the overall statistical analysis. In addition, in the subgroup of participants whose LDL-C levels were above 160 mg/dl (normal levels should be below 100), triglyceride levels (an independent cardiovascular risk factor) were decreased by 14% (3,000 mg/day dose) and 10% (6,000 mg/day dose) with gugulipid. "Lipoprotein 'little a'" [Lp(a)] (another risk factor) levels were reduced by 7% and 5%, by the low dose and high dose of gugulipid, respectively. Finally, and perhaps the most striking finding reported, was that C-Reactive Protein (CRP) was reduced by a whopping 29% by the high dose gugulipid, and 25% by the lower dose. CRP is probably the best biomarker there is for monitoring chronic illnesses. If CRP is going up, the disease is probably getting worse. Conversely, when it is coming down, the disease is probably getting better. Also, rather than being just a marker of illness, *CRP has recently been found to have damaging effects itself.*

Consequently, rather than being a failed study, as characterized by the authors of the study (and especially by the purveyors of misinformation in the popular press), the study revealed a previously largely unrecognized and perhaps even more significant clinical benefit of gugulipid—that of *dramatically reducing CRP*—a significant risk factor and marker of many diseases.

Until now, there hasn't been much available to treat elevated CRP. The only substances I knew of which would beneficially affect CRP (other than treating the underlying disease process itself) was Red Yeast Rice Extract, statin drugs (which have many adverse side effects which cause me to discourage their use), and a combination of *Turmeric Extract* and *UniZyme™*. However, it now appears that *gugulipid is clearly the winner among the CRP-lowering substances.*

In addition to lowering CRP, the study also confirmed that gugulipid tends to improve other cardiovascular risk factors, including *lowering triglycerides* in those with elevated LDL, *lowering Lp(a)*, and reducing *total cholesterol* in nearly 20% of those who take it. Consequently, I think this article lends further support to the continued use of gugulipid as a dietary supplement for those at risk of cardiovascular disease, due to its now well-demonstrated beneficial effects on a number of cardiovascular risk factors.

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## Natural Support for the Cold and Flu Season

# UniBiotic™: Natural Antibiotic Complex

UniBiotic™ is a natural antibiotic complex effective against a broad range of bacteria, protozoa, worms and fungi. This formulation is useful for general infectious conditions, including influenza, colds, upper respiratory tract infections, urogenital infections, and other infectious conditions. This formulation possesses a broad-spectrum of beneficial actions on restoring a weak and damaged immune system.

### Berberine

Berberine, found in golden seal, barberry and Oregon grape, is the alkaloid responsible for the antibiotic actions of these botanicals. Berberine has been shown to increase the blood supply to the spleen and to promote the release of compounds such as tuftsin that potentiate immune function. Berberine has also been shown to activate macrophages.

In several clinical studies berberine has shown significant success in the treatment of acute diarrhea. Berberine-containing plants have been employed in a variety of ocular complaints, and have shown remarkable effect in the treatment of trachoma, an infectious eye disease due to *Chlamydia trachomatis*.

Berberine has been shown in several clinical studies to stimulate the secretion of bile (cholorectic effect) and bilirubin. Berberine has been shown to correct the hypertyraminemia of patients with liver cirrhosis. Berberine also produces an antipyretic effect three times as potent as aspirin in a pyretic model in rats.

Berberine has shown antimicrobial activity against bacteria, protozoa, and fungi, including: *Staph sp.*, *Strep. sp.*, *Chlamydia sp.*, *Corynebacterium diphtheria*, *E. coli*, *Salmonella typhi*, *Vibrio cholerae*, *Diplococcus pneumonia*, *Pseudomonas sp.*, *Shigella dysenteriae*, *Entamoeba histolytica*, *Trichomonas vaginalis*, *Neisseria gonorrhoeae* and meningitis, *Treponema pallidum*, *Giardia lamblia*, and *Leishmania donovani*. Berberine's action against *Candida* is actually stronger than that of antibiotics commonly used for these pathogens.

### Garlic

Garlic (*Allium Sativum*) contains a volatile oil composed of several sulfur-containing compounds, the most important of which are allicin, diallyl disulfide, and diallyl trisulfide. These volatile compounds have been shown to be effective antibiotic agents against many bacteria, including: *Staphylococcus Aureus*, *alpha-* and *beta-hemolytic Streptococcus*, *Escherichia Coli*, *Proteus Vulgaris*, *Salmonella Enteritidis*, *Citrobacter Sp.*, *Klesiella Pneumoniae*, and *Mycobacteria*. Garlic has demonstrated significant antifungal activity in many in vitro and in vivo studies, and administration has been shown to significantly reduce the number of coliforms and anaerobes in the

feces.

### **Echinacea**

Echinacea has shown results in general infectious conditions, influenza, colds, upper respiratory tract infections, and urogenital infections. Its actions are due primarily to its strong immune potentiating actions. Echinacea has a direct but mild antibacterial activity, and has been shown to be effective against *Staphylococcus aureus*, *Corynebacterium diphtheria*, and *Proteus vulgaris*. Echinacea also possesses antiviral properties—some of the viruses inhibited in cell cultures include: *influenza*, *herpes* and *vesicular stomatitis* viruses. Although certain Echinacea components may block virus receptors on the cell surface, the antiviral effects may also be due to inhibition of hyaluronidase.

### **Spleen Extracts**

Spleen tissue extracts may be of benefit in enhancing general immune function due to the presence of two potent immunostimulants, tuftsin and splenopentin, known to exert profound immune-enhancing activity. Tuftsin stimulates macrophages. A deficiency of tuftsin is associated with signs and symptoms of frequent infections. Splenopentin, like tuftsin, also demonstrates significant immune-enhancing effects, primarily directed toward enhancing the immune system's response to regulating “colony-stimulating factors” such as interleukin-3 and granulocyte/macrophage stimulating factors. Splenopentin also enhances natural killer cell activity.

In addition to tuftsin and splenopentin, hydrolyzed (predigested) spleen extracts concentrated for peptides demonstrate impressive immune-restorative properties. Spleen extracts may also be useful in the treatment of low white blood cell counts, bacterial infections, and as an adjunct in cancer therapy.

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## Review: The Many Faces of Ascorbic Acid

# **Vitamin C, Colds and “Acute Induced Scurvy”**

by Jim English

Vitamin C is one of the most widely used and highly valued vitamins in the world. Vitamin C became popular in 1970, when Linus Pauling published his groundbreaking work, “Vitamin C and the Common Cold.” Vitamin C sales skyrocketed, with some impressive results, including a staggering 40% drop in the number of deaths attributed to heart disease in the next decade. Scientists now estimate that over 250,000 lives are saved every year because of the efforts of Linus Pauling and other dedicated researchers to educate the public about the benefits of

vitamin C. Based on these statistics, it has been estimated that if everyone in the United States took several hundred milligrams of vitamin C a day, over 100,000 lives and \$100 billion in health care costs would be saved each year.

Not only can vitamin C help us feel better and live longer, but it has also been proven to support numerous functions that can help us attain optimal health, including:

**Antioxidant Protection:** This premier antioxidant nutrient protects us from the ravages of free radicals that, if left to destroy cell membranes and damage DNA, lead to the development of degenerative diseases and accelerated aging.

**Collagen Production:** Vitamin C helps manufacture collagen, the basic cellular “cement” that keeps muscles, tendons, bones, teeth and skin healthy and strong, and aids in the repair of blood vessels and broken bones.

**Cardiovascular Support:** Vitamin C benefits heart conditions of all kinds, normalizes blood pressure, reduces cholesterol levels, and aids in the removal of cholesterol deposits from arterial walls.

Despite these and other numerous health benefits, this basic nutrient is constantly under attack from those who argue that all good nutrition begins and ends with a fork. And is it possible to get optimal amounts of vitamin C from food alone? It has been shown that even the best diet cannot begin to provide the minimum levels of vitamin C (500 to 1,000 mg per day) that research has proven can help us fend off illness, degenerative diseases and premature aging. In fact, a recent study has shown that men who take vitamin C supplements live, on average, six years longer than those who only get their vitamin C from dietary sources.

### **The History of Vitamin C**

Vitamin C, also called ascorbic acid, is a powerful water-soluble antioxidant vital for the growth and maintenance of all body tissues. Though easily absorbed by the intestines, vitamin C cannot be stored in the body, and is excreted in the urine within two to four hours of ingestion. Human history has been deeply influenced by vitamin C—or more accurately, by a frequent and disastrous lack of this vital nutrient. In his book *The Healing Factor: ‘Vitamin C’ Against Disease*, the late biochemist Irwin Stone stated: “...the lack of this molecule [vitamin C] in humans has contributed to more deaths, sickness, and just plain misery than any other single factor in man’s long history.”

### **The Discovery of Vitamin C (Ascorbic Acid)**

The first breakthrough in vitamin C research occurred in 1926, when the Hungarian scientist, Albert Szent-Györgyi, MD, PhD, traveled to Cambridge University to conduct research on the chemical processes that caused fruits and vegetables to turn brown. Szent-Györgyi first succeeded in isolating a white crystalline substance from the adrenal gland of cows, which he referred to as Cx11. Later, in 1928, Szent-Györgyi isolated these same crystals from the juice of potatoes and cabbages, and renamed the substance hexuronic acid. Szent-Györgyi later collaborated with the famed English chemist W. Haworth, and together they finally determined the

chemical structure of hexuronic acid (C<sub>6</sub>H<sub>8</sub>O<sub>6</sub>). Finally, in 1932, after producing the first pure crystals of vitamin C, Szent-Györgyi and Haworth once again renamed the substance, and, in recognition of its role in preventing scurvy, called it ascorbic acid, from the Latin word, ascorbic, which means “without scurvy.”

Five years later, in 1937, Szent-Györgyi was awarded the Nobel Prize in Medicine “for his discoveries in connection with the biological combustion processes, with special reference to vitamin C and the catalysis of fumaric acid.”

### **What Does Vitamin C Do?**

Vitamin C is utilized by virtually every part of the human body. In fact, there are few, if any, biological functions that do not require vitamin C.

- Vitamin C is a water-soluble antioxidant to protect cells from free radicals. Vitamin C also prevents oxidative damage that leads to the development of atherosclerosis.
- Vitamin C is vital to the immune system, aiding white blood cells that attack and destroy cancer cells, viruses, bacteria, parasites and other pathogens. Vitamin C also promotes wound healing and acts to control the release of histamine.
- Vitamin C is used by the body to produce collagen, used by connective tissues to give strength and shape to our tissues, such as muscles, blood vessels, bones and teeth.
- Vitamin C helps the body utilize folic acid (required for maintaining our DNA) and regulates the uptake of iron (needed for production of hemoglobin, the oxygen-carrying part of blood cells).
- Vitamin C is important for the synthesis of neurotransmitters, such as noradrenaline (for energy and mood) and serotonin (for sleep, well-being and pain control).

### **Vitamin C and the Common Cold**

Large doses of vitamin C (two grams or more per day) can dramatically shorten both the duration and severity of a cold if taken at first sign of symptoms. Most studies show that vitamin C therapy can result in milder symptoms while reducing the duration by about a third.

More than twenty studies have found that preventive vitamin C supplementation reduces the annual number of colds in children. One study of over 600 children, between the ages of 8 and 9 years, found that 1,000 mg of vitamin C a day for three months reduced the severity and duration of colds, but not the number of colds. Based on these findings, it makes more sense to increase vitamin C intake at the onset of cold symptoms rather than as a preventive measure.

To understand how vitamin C can help us recover from colds, flu and other forms of infection, we need to understand that vitamin C takes on a new role when the body is under attack.

### **Common Cold as “Acute Induced Scurvy”**

Often we may begin to notice that we are starting to feel ill, only to have the

symptoms quickly disappear within a day or so. This is what is supposed to happen when our immune system is healthy and well supported. At the first sign of an attack, all of the components of the immune complex move quickly to identify, target and kill the invading pathogens.

Just as often we don't get better and our symptoms worsen as we are caught up in a cold or flu infection that can last for days or weeks. What has happened is that invading viruses have slipped past our first lines of defense and are damaging mitochondria, the cells that produce energy. This damage results in a flood of free radicals that quickly use up all of the vitamin C in the affected area, like the nose and throat. Dr. Robert Cathcart, a pioneer in the field of orthomolecular medicine, refers to this condition as "acute induced scurvy."

When vitamin C is depleted in the affected area, the body can no longer mount an effective response until it has produced enough antibodies to attack and destroy the virus. In the meantime the condition has time to spread to the sinuses, ears, lungs, etc. This also allows bacteria to take advantage of the situation, potentially causing secondary infections, such as bronchitis, pneumonia or worse.

Cathcart believes that taking moderate doses of vitamin C (200 to 2,000 mg per day) in such conditions may prevent the spread of the infection to other areas of the body, but will do little to shorten the course of the illness. On the other hand, Cathcart argues that taking massive doses of vitamin C (megadoses) can force enough electrons into the affected tissues to neutralize all the free radicals and support the white cells that "come out fighting mad and destroy all the viruses." "It does not matter that the disease is moderately advanced," states Cathcart, if sufficient C is used, "the cold will be shortly terminated."

### **The Power of High Dose (Megadose) Vitamin C**

Building on the groundbreaking work of Linus Pauling, Irwin Stone, and other orthomolecular physicians, Cathcart has helped to shape our understanding of megadose vitamin therapy, which uses vitamin C in doses higher than those required for normal cellular functions. When taken in very high (ten to one hundred grams or more per day, depending upon the person and the illness) vitamin C works in a uniquely different way to fight off serious illness.

We've seen that vitamin C is required to help protect the body from the ravages of free radicals and for the constant repair of our connective tissues. And, except for losses due to collagen formation, most of the time vitamin C is recycled by the body's antioxidant system. But when the body is challenged by cancer, colds, or other diseases, vitamin C takes on a new role. Dr. Cathcart describes the process in the following way, using the term ascorbate, which is just another technical term for vitamin C:

1. Free radicals are molecules that have lost an electron and they are very reactive because they want an electron in the worst way.

2. Vitamin C (ascorbate) donates its two spare electrons to neutralize two dangerous free radicals.
3. When vitamin C (ascorbate) loses its electrons it is turned into a form of vitamin C called dehydroascorbate.
4. Dehydroascorbate has a half-life in the body of only a few minutes.
5. If dehydroascorbate does not regain its two electrons from the mitochondria within a few minutes, it is irreversibly lost (mitochondria are tiny structures in every cell that act like powerhouses that provide cellular energy and aid in recycling vitamin C).
6. White blood cells need vitamin C (ascorbate) in order to kill viruses, bacteria, parasites, fungi, cancer cells, etc.
7. When the mitochondria are damaged (by cancer, viruses, bacteria, etc.), they are unable to provide the electrons needed to turn dehydroascorbate back into vitamin C.
8. These damaged mitochondria produce more free radicals.
9. Free radicals turn on antibodies and increase inflammation.

In essence what Cathcart and other supporters of megadose therapy are claiming is that when we become seriously ill the body is overwhelmed by a flood of free radicals that quickly use up all of the available stores of vitamin C. This impairs the immune response, which depends on vitamin C to mount an effective defense against the invading organisms (or tumor, in the case of cancer).

By ingesting or infusing large amounts of vitamin C, as in the earlier cancer study by Pauling and Cameron, the aim is to saturate the body with enough electrons to destroy all of the free radicals being generated in the tissues affected by the disease. In short, the body is using the electrons donated by vitamin C, and then tossing away the dehydroascorbate.

### **The Controversy Surrounding Megadose Therapy**

Megadose vitamin C therapy continues to be a highly controversial topic. Traditional medicine tends to view vitamin C as a nutrient that is only useful for preventing scurvy. In *The Third Face of Vitamin C*, published in 1993, Dr. Cathcart detailed his clinical experience treating over 20,000 patients with high doses of vitamin C over a 23-year period. Cathcart found that doses of up to 200 or more grams per day were effective in treating clinical diseases involving free radicals. The list of diseases involving free radicals includes infections, cardiovascular diseases, cancer, trauma, burns (both thermal and radiation), surgeries, allergies, autoimmune diseases and aging.

Megadose therapy has caught the interest and fired the imagination of many eminent researchers. The late Irwin Stone pioneered the early use of high dose vitamin C for

treating diseases. His close friend, Dr. Frederick Klenner conducted much of the original clinical research on vitamin C megadose therapy, reporting that most viral diseases could be cured when patients were treated with intravenous sodium ascorbate in amounts up to 200 grams per day.

Klenner is credited with bringing megadose therapy to the attention of Linus Pauling. Pauling went on to conduct research with Ewan Cameron showing that high dose vitamin C therapy doubled the life span of cancer patients. Based on their work a large number of physicians now routinely use massive doses of vitamin C in their clinical practice for the treatment of a wide variety of diseases.

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## Resveratrol Mimics Caloric Restriction to Turn on “Longevity Genes”

by Jim English

Caloric restriction has been shown to be one of the most effective means of slowing the pace of aging and extending lifespan. Studies show that severely reducing the food intake of laboratory mice can increase their lifespan to the human equivalent of 162 years. Other experiments demonstrate similar gains in maximum lifespan with fruit flies and worms. Yet despite the potential increase in lifespan observed with caloric restriction, few humans would willingly choose to live in a constant state of semi-starvation for even a few days, let alone 162 years.

Researchers from Harvard Medical School just announced that resveratrol, a polyphenolic compound found in red wine, duplicates the life-extending benefits of caloric restriction in a yeast model. In a paper published in the August 24 online edition of the journal, *Nature*, they report that resveratrol was shown to extend the lifespan of yeast by up to 80 percent.

### **SIR-2—The Longevity Enzyme**

Researchers have known for decades that reducing daily intake of calories by up to 40 percent dramatically slows down the aging process and extends lifespan of lab animals. Caloric restriction also has been shown to protect mammals from cancer and other age-related diseases. Recently scientists identified a class of regulatory “longevity genes” that are shared by almost all living organisms. These genes function as a feedback system to enhance survival during times of stress, such as during drought or famine. The process begins when external signals indicate a deterioration of environmental conditions. Once triggered by environmental cues, the longevity genes “switch on” and induce defensive changes at the cellular level, such as slowing metabolism and enhancing cellular respiration to help the body adapt to a more beneficial survival program.

In their study, the Harvard researchers focused on a family of enzymes, called sirtuins, produced by almost all life forms—from single celled organisms, to plants and mammals—during times of stress, such as famine (or caloric restriction). Sirtuins (silent information regulator proteins) are known to act as guardian enzymes that protect cells and enhance cellular survival. The human sirtuin, SIRT-1, for example, has been shown to suppress the p53 enzyme system normally involved in suppressing tumor growth and instigating cell death (apoptosis). By suppressing p53 activity SIRT-1 prevents the cycle of premature aging and apoptosis normally induced when cellular DNA is damaged or stressed, thus giving cells enough time to repair any damage and prevent unnecessary cell death. A second sirtuin found in yeast, SIR2, has also been shown to become activated when placed under stress. SIR2 has been shown to increase DNA stability and speed cellular repairs, while increasing total cell lifespan.

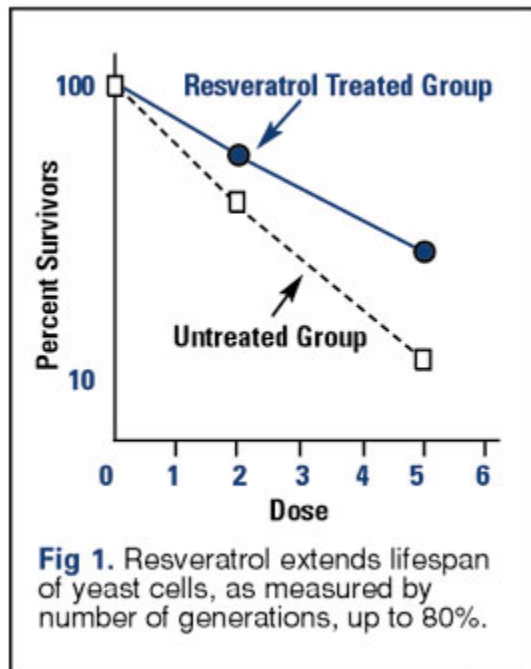
“We think sirtuins buy cells time to repair damage,” said molecular biologist David Sinclair, assistant professor of pathology at Harvard Medical School and co-author of the new study. “There is a growing realization from the aging field that blocking cell death—as long as it doesn’t lead to cancer—extends lifespan.”

### **An Alternative to Caloric Restriction**

Intrigued by the positive health benefits of caloric restriction, the Harvard research team began to search for other methods of modulating sirtuin activity without resorting to starvation. After an initial screening process, the researchers discovered that several plant metabolites acted as sirtuin-activating compounds (STACs). Plants produce a variety of polyphenols, such as resveratrol, flavones, stilbenes, isoflavones, catechins and tannins in response to environmental stresses, such as drought, nutrient depleted soils, ultraviolet radiation and pathogens. As they refined their screening process the researchers discovered that the most potent activator of sirtuins was resveratrol.

To test the ability of resveratrol to activate sirtuins in living creatures the Harvard researchers selected yeast, a single-celled organism that is closely related to animals, including humans. The research team hypothesized that if resveratrol was effective in modifying the newly identified target genes to trigger sirtuin production it would closely reflect the protein’s role in animals to formally link the protein to lifespan extension, at least for yeast. Their study found that even small doses of resveratrol helped yeast cells live as much as 60 to 80 percent longer, as measured by the number of generations (Fig. 1). Yeast treated with resveratrol lived for an average of 38 generations, as compared to only 19 generations for untreated yeast.

Additional experiments with human cells found that resveratrol activated a similar pathway requiring SIRT1 that enabled 30 percent of the treated human cells to survive gamma radiation compared to 10 percent of untreated cells. In the paper, the researchers also report that preliminary experiments with flies and



worms are encouraging, and mouse studies are in the works.

### Resveratrol

The fact that human sirtuin SIRT1 turns off the tumor suppressor gene p53 has raised some concern that activating the sirtuin pathway to switch on the cellular longevity program might actually promote cancer. In addressing this issue, Sinclair noted that calorie-restricted animals in experiments by others have lower, not higher rates of cancer. Additional studies also found that resveratrol is able to block all three mechanisms of cancer formation by helping the body inhibit tumor initiation, promotion and progression. Resveratrol has also been shown in numerous clinical trials to benefit heart disease by reducing platelet aggregation and increasing HDL-cholesterol.

Resveratrol, in combination with other bio-flavonoids and vitamins C and E, may have a synergistic effect by reducing pathological platelet aggregation, stimulating healthy blood flow via the dilation of arteries, and minimizing free radical damage to blood vessel linings.

### Conclusion

Research indicates that plant polyphenols, which increase in response to stressful conditions, such as dieting, help to cue organisms to prepare for impending harsh conditions by switching to a more beneficial survival program. The plant polyphenol, resveratrol, has been shown to act in just such a manner to activate sirtuins to mimic the benefits of caloric restriction to slow aging and extend lifespan—in the case of yeast, up to 80 percent beyond untreated samples. Furthermore, resveratrol has been shown to activate sirtuins, which are also active in human cells, suggesting a potential for lengthening life and preventing or treating aging-related diseases in humans.

### Trans- and Cis-Resveratrol

Resveratrol, found in the skins of young unripe red grapes, occurs naturally in two related forms, or isomers, referred to as *trans*-resveratrol and *cis*-transrevatrol. Of the two, the *trans* form (3,5,4'-trihydroxy-*trans*-stilbene), is the one that has been shown in numerous studies to be the most bioactive and clinically beneficial form of resveratrol. VRP's resveratrol has been standardized to deliver 20 percent *trans*-resveratrol by weight, one of the highest potencies available.

We recommend 5 mg of *trans*-resveratrol daily for preventive purposes, and 20 mg, twice daily, for therapeutic purposes.

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## Customers' Corner

by *Ward Dean, MD*

VRP Medical Director and Director, Research & Development

### ***Sjogren's and Thymic Protein***

Dear Dr. Dean,

Thank you for recommending **Thymic Protein A** for a (probable) case of Sjogren's syndrome. You asked to be kept informed on the issue: After three weeks of taking one packet of TPA per day I'm happy to report that it gives me a sense of well-being. I have more energy and increased alertness, as opposed to the edgy, under-the-weather feeling I was laboring under before. I'm continuing on TPA, and will probably cut back to taking three packets per week over the next month. I don't know whether there will be additional benefits with longer term usage, but if so I'll keep you informed.

Mr. A.

Dear Mr. A.,

Thank you very much for the update..

Ward Dean, MD

### **Alzheimer's and Depression**

Dear Dr. Dean,

I want to know if I should take yet another drug to address possible Alzheimer's disease? Five years ago my brain scan revealed depressed activity in the temporal lobe. After reading your book, *Smart Drugs & Nutrients*, I began taking **Deprenyl**,

plus **Phosphatidylserine, Ginkgo biloba, DMAE, vitamin E, DHEA,** and **Melatonin**, along with a high potency multinutrient formula. Recently I've added **ALC, Huperzine, Essential Fatty Acids, N-acetyl cysteine** and **SAMe**, and increased my dosage of Deprenyl to 10 mg a day. My son, a psychiatrist in California, wants me to start taking Lamictal for memory problems and current depression. I am 82 years old and prefer supplements over drugs, but I trust your advice.

Mrs. G.

Dear Mrs. G.,

I don't understand your son's recommendation. Lamictal is an anti-epileptic drug with very serious potential side effects. I am unaware of anyone using Lamictal as a cognitive enhancer or antidepressant. Whenever I see a drug that has a black-boxed warning in the PDR, I become even less enthused about recommending it for anyone.

If you need further therapy beyond what you are taking, there are many options that are safer with much greater likelihood of benefit, in terms of antidepressant and cognitive enhancing effects.

Several that could be used include **Lithium Orotate, Piracetam, Diapid, Hydergine,** or **Idebenone**. If an anti-seizure medication is indicated (Lamictal is an anti-seizure medication), I'd use Dilantin (which has both anti-depressant and cognitive enhancing effects), or the anti-seizure nutritional protocol suggested in the September 2003 issue of *Vitamin Research News*.

I hope this information helps you to resolve your dilemma.

Ward Dean, MD

### ***Graves and Lithium Orotate***

Dear Dr. Dean,

I had Graves Disease many years ago and was treated with RAI (radioactive iodine) which destroyed most of my gland (I have taken full replacement thyroid hormone for the last twenty-two years). I also had the eye involvement. Even today, my eyes (although in the normal range) don't look exactly as they did before the Graves Disease. I am very interested in taking Lithium Orotate but I've read that prescription lithium can trigger the production of thyroid antibodies, particularly the Hashimoto/hypothyroid antibodies. Since I have no gland to speak of, it isn't the effect of these antibodies on my gland which concerns me, but the possible effect of these antibodies on my eyes (after all, no one is really certain which antibodies attack the eye muscles). Graves eye disease can come and go (I've had several friends whose eye disease flared after many years of remission), and I certainly don't want it to return. Do you feel that the Lithium Orotate is safe for a person like me?

Thank you so much, Ms. .

Dear Ms. B.,

I believe you can safely take **Lithium Orotate**. Prescription lithium is pretty toxic stuff, and the therapeutic level is very close to the toxic level. Consequently, many side effects that are attributed to lithium are due to the high levels that are required of prescription lithium.

Because **Lithium Orotate** is 20 times more bioavailable than prescription lithium (carbonate or citrate), much lower levels can be used, and side effects, in my experience, do not occur.

Ward Dean, MD

### ***Chromium Picolinate and DNA***

Dear Dr. Dean,

A recent article in the September, 2003 issue of *Prevention* magazine said that **Chromium Picolinate** might cause DNA damage and therefore chromium chloride should be taken instead. Do you agree?

Thank you! Mr. S.

Dear Mr. S.,

No, I don't agree. *Prevention* magazine has long ago ceased to be a source of reliable nutritional information. Take a look at the advertisers in this magazine. They represent the major international corporate food processors.

I did not see the article in *Prevention* that you are referring to, but it sounds like they have regurgitated a study from several years ago. It was an in vitro study, in which they subjected cells to concentrations of chromium picolinate that were several thousand times higher than cells in the body would ever be exposed to, and made the ridiculous leap of logic that chromium picolinate will damage DNA. If the study is a new one, I'd be interested in knowing the source.

Ward Dean, MD

### ***Bruising and Meniere's Disease***

Dear Dr. Dean,

I recently returned to practicing martial arts and notice that I bruise much more easily than in the past. I've begun to have varicose veins. I've read that **Butchers Broom** can be helpful for bruising and varicose veins. On top of all this I also have Meniere's disease, eczema, asthma, and am allergic to latex. I am currently taking **Essential Minerals** (which has really helped with the fatigue in my legs), **Folic Acid**, **Hawthorn extract**, **CLA**, **C Plus**, and **HerBalance I**. Is there anything else you would recommend?

Thank you, Ms. D.

Dear Ms. D.,

I suggest **Vinpocetine** for Meniere's Disease—it's the only substance that I have ever seen work in this troubling condition. **Ginkgo biloba** or the drug Hydergine may also help.

For asthma, add **Calcium AEP**, **Forskolin**, and **NAC** (1800 mg per day). Also, several grams of **Bioflavonoid Complex**. Chromolin Sodium, a drug for allergies and asthma, is a synthetic bioflavonoid.

VRP's new **Vein Support Formula** combines **Butcher's Broom** with **Horse Chestnut**. **Bioflavonoids** may also help with your varicose veins, and should help with the bruising.

Ward Dean, MD

### ***Fibrocystic Breast Disease***

Dear Dr. Dean,

My 23-year-old daughter was recently diagnosed with fibrocystic breast disease (FCBD). After an ultrasound her doctor advised a biopsy and/or surgery to remove the cyst. Could the cyst be the result of a hormone imbalance? If so, would **Progesterone Cream** dissolve the cyst, or at least shrink it? Are there any other supplements that would help? We don't want to make a hasty decision about surgery.

Thanks, Mr. L.

Dear Mr. L.,

I have seen reports that **vitamins E** and **B6** may benefit FCBD, as well as avoidance of coffee. **Progesterone Cream** may also be worth a try. Surgical excision is definitive, however, and should not be cosmetically or functionally objectionable.

Ward Dean, MD

### ***Restless Legs and Hypertension***

Dear Dr. Dean,

My husband has restless leg syndrome and takes potassium, **Pressure FX®**, **MPA**, and a multivitamin. He also has high blood pressure, which is why he takes extra minerals.

My question is, can he take too much potassium, and if so, what are the effects?

Thank you, Mrs. H.

Dear Mrs. H.,

Your husband can safely take several grams of elemental potassium each day. This is the supplemental dose recommended in Dr. Richard Moore's book, *The High Blood Pressure Solution—Natural Prevention and Cure with the K Factor*—which

recommends high dose potassium as a treatment for hypertension. I'd also suggest he add a little more magnesium—up to bowel tolerance (just under the dose that causes gastrointestinal upset). If this combination does not alleviate his restless leg syndrome (nocturnal myoclonus) I'd suggest asking his physician to prescribe GHB (Xyrem) for him. GHB is a very effective treatment for restless legs.

Ward Dean, MD

### ***Lycopene or ProstaCol?***

Dear Dr. Dean,

As a cost effective measure, would **Healthy Hair Caps** offer the same amount of prostate protection as **ProstaCol®** does if I added a daily dose of **Lycopene**?  
Mr. S.

Dear Mr. S.,

Your idea to combine **Healthy Hair Caps** with extra **Lycopene** is a good one, and that will give you a significant degree of prostate protection. In fact, that's exactly what I used to recommend—until we improved **ProstaCol**. The new **ProstaCol** formula is light years ahead of the old one, despite the fact that the old formula was also highly effective.

Ward Dean, MD

### ***Diabetes and Vanadyl Sulfate***

Dear Dr. Dean,

My husband (60) and I (52) are both type 2 diabetics. If we take **Optimum D** and **GluControl™** in the suggested amounts will we be getting sufficient **Lipoic Acid** and **Vanadyl Sulfate**?

Mrs. C.

Dear Mrs. C.,

You will be consuming adequate **Vanadyl Sulfate**. However, you might want to bump up your **Lipoic Acid** intake to a total in the range of 500 to 1,000 mg daily.

Ward Dean, MD

### ***Panning Anti-Aging Science***

Dear Dr. Dean,

The May 13, 2002 issue of *Scientific American* cites a panel of 51 aging researchers, who pan antioxidants and hormones. Obviously, you disagree. In terms a layman can understand, what is the clear and compelling basis for disagreeing with their article? (I am aware that thousands of studies support supplementation. The article claims these have been misunderstood or misrepresented.)

Also, if in your view the panel is misrepresenting the evidence, your speculations as to why would be welcome.

Thanks, M. K.

Dear Mr. K,

I read the article. The problem, as correctly stated by Dr. Olshansky and some of the other scientists, is that many purveyors of anti-aging supplements make claims that can't be substantiated. I agree that this often casts a cloud over the field of anti-aging medicine.

I believe that VRP accurately describes the known benefits of our products, and avoids the wild claims that Olshansky and some of the other scientists were criticizing in their article.

With few exceptions, I agree with the facts presented in the article—especially the statement that no one has ever demonstrated the ability of any drug or supplement to retard aging or extend the lifespan of humans. Of course, this is because the types of studies that are generally accepted to prove a case “scientifically” have never been performed. However, just because human lifespan studies have not yet been performed, it should not stop people from applying safe approaches that have a sound theoretical basis and a high potential benefit/risk ratio (by the time the human studies are performed, few of us would be around to benefit from them).

Consider that “orthodox” physicians and scientists have not been able to demonstrate a “cure” for cancer, either—but that does not stop oncologists from treating patients for incurable cancers with the “poison of the month.” I think the authors of the *Scientific American* report were more interested in their agenda of trashing anti-aging medicine than in presenting an accurate report on the status of the field.

Ward Dean, MD

### ***Labyrinthitis***

Dear Dr. Dean,

I have a friend who has vestibular neuronitis (labyrinthitis). When he contracted this virus some months ago the only way he could stop his head from going crazy was to lay with his eyes closed and not move. Since then he has improved and can now walk around, but he still suffers from dizzy spells and poor balance which stops him from working or driving a car.

Doctors say there is nothing they can give him to make him better—only time. He has shown little improvement over the last couple of months, so I was wondering if you could recommend any VRP supplements that would help his condition.

Best regards, Mr. N.

Dear Mr. N.,

My sympathies to your friend. Labyrinthitis can be a terrible, incapacitating condition. Fortunately, as he has been advised by his physicians, it almost always resolves, although it may take up to six months or more.

Have your friend start taking 40 mg of **Vinpocetine** every day. This is the most effective treatment I have ever found for labyrinthitis. There is no proof that this condition is caused by a virus, although that is a possibility. I think Vinpocetine will give him noticeable relief. **Ginkgo Biloba** may also help, although I have not seen such dramatic improvement as with Vinpocetine. Nevertheless, both supplements can be taken. An anti-inflammatory, such as VRP's **UniZyme**, may also be helpful.

He might also take **Ginger**, either as a tea, in capsules, or even just chew a piece of raw ginger root. This is very helpful for the nausea and vomiting that usually accompanies severe labyrinthitis attacks.

Let me know how he does.

Ward Dean, MD

### ***Improved Lipid Levels***

Dear Dr. Dean,

I wrote you two months ago about my husband changing from taking **Pravacol** to **LipiControl™**. You recommended adding **Niacin** (500 mg 3x a day). Well, after almost two months, he went for a blood test. His cholesterol dropped from 170 to 151 , but even more important is that his LDL went from 111 to 90. We were so thrilled. His HDL stayed the same at 41. He also takes the **Turmeric** that you suggested.

Thank you again for all your help. We feel this is a healthy way for him instead of taking stronger statin drugs. I feel the Niacin was a big factor in this. My question is, should we stay with everything the same since it seems to be working very well?

Mrs. D.

Dear Mrs. D.,

Thanks for the uplifting progress report. One of my mottos is, "Never trouble trouble." Since everything "seems to be working very well," let's not change anything right now, although he might consider reducing his Pravachol. I'd be interested to know what his fibrinogen levels were, and whether the **Turmeric** helped to normalize them as well.

Thanks again for the update.

Ward Dean, MD

### ***Hiatal Hernia, Reflux***

Dear Dr. Dean,

Thank you for your informative column. I have a few questions regarding my eight-year-old son. My son was diagnosed with a relatively small hiatal hernia and esophageal erosions in the spring of 2002. He has been on and off of proton pump inhibitors (PPI's) but we are finding them problematic due to side effects. They caused confusion, aggression, malaise, and abdominal pains. Even though we believe his ulcers have healed, he sometimes has reflux with heartburn, dry coughing, and difficulty swallowing (he says it feels like something is stuck in his throat). Our doctor recommends prolonged use of these meds, despite the side effects. Additionally we are concerned about how the PPI's might effect digestion, and long-term effect of prolonged use.

Is **CeaseFire™** okay to use for children? I realize **CeaseFire** would reduce symptoms, but we still have the underlying problem of the hernia. Are you aware of any method of correcting the hiatal hernia other than Nissen Fundoplication? We are also wondering if we can ride this out, and hopefully he'll outgrow this?

Thanks very much, Mrs. G

Dear Mrs. G.,

**Mastic Gum** (the active ingredient in **CeaseFire**) is safe for children—certainly safer than Nexium.

I suggest you find a chiropractor experienced with the manipulative reduction of hiatal hernias. It's a very safe and effective procedure. I agree that a reasonable course would be to learn to reduce the hernia by simple manipulation, and hopefully he will "outgrow" the problem.

Ward Dean, MD

### ***Prefers to Avoid Niacin***

Dear Dr. Dean,

I have high cholesterol—259, LDL is 202, and HDL is 41. I've been taking **Policosanol** once a day and plan to increase to twice a day. Can you advise what else I can use? I prefer to avoid niacin, which gives me insomnia over time.

Thanks, Mrs. J.

Dear Mrs. J.,

Try VRP's premier lipid-lowering formula, **LipiControl™**. Although it contains Vitamin B3 as inositol hexanicotinate (IHN), this should not cause the problems of regular niacin.

Also, I agree with your increasing your dosage of **Policosanol**. Unfortunately, despite **Policosanol** being very effective for some people, we are finding it not to be so

effective in others.

Ward Dean, MD

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## Nutrition Review

### **Cranberries Protect Brain From Stroke Damage**

Numerous studies have established the benefits of cranberries for supporting urinary health. Recently researchers have also shown that cranberries help to raise HDL (“good cholesterol”) blood levels and increase plasma antioxidant levels, both important factors for reducing the risk of heart disease. Now new laboratory findings suggest that cranberries are particularly effective in aiding recovery from stroke, especially during early stages when severe cellular damage occurs.

In a presentation delivered to the September 8, 2003 meeting of the American Chemical Society, researchers described how cultivated rat neurons were divided into groups and exposed to varying concentrations of cranberry extract. Following treatment to simulate the effects of stroke the researchers discovered that cranberry significantly reduced brain cell death. In fact, neurons exposed to the higher concentrations of cranberry had only a fifty percent reduction in the number of brain cells that died, in comparison to cells that did not receive cranberry extract.

“This study shows that cranberries have the potential to protect against brain cell damage that occurs during a stroke event,” said Catherine Neto, an assistant professor at the University of Massachusetts-Dartmouth and a lead investigator in the study. “It may not stop a stroke from occurring initially, but it may reduce the severity of a stroke,” she added.

*226th National Meeting of the American Chemical Society, Sep 8, 2003.*

### **Turmeric Shown to Benefit Ulcerative Colitis, Crohn’s**

Turmeric (*Curcuma longa*) is a traditional Indian curry spice previously shown to reduce the incidence of colon cancer in animals. Now research indicates that curcumin, the active ingredient of turmeric, may also help to reduce and/or prevent ulcerative colitis and Crohn’s disease, two forms of inflammatory bowel disease. According to the National Institutes of Health, two million Americans suffer from ulcerative colitis and Crohn’s, characterized by chronic ulceration of the bowels, abdominal pain, digestive problems, diarrhea and constipation.

Current drug treatments are expensive and present significant side effects, inspiring

researchers from the Jack Bell Research Center at Vancouver General Hospital in British Columbia to search for alternative treatments that are more effective and more affordable.

After pre-treating mice with curcumin, the researchers induced colitis by exposing the animals to dinitrobenzene sulfuric acid (DNB). After five days the researchers measured a clear reduction in intestinal inflammation in mice pretreated with curcumin versus untreated mice. Curcumin was also revealed to improve intestinal cell function in DNB-induced colitis while reducing mucosal ulceration and proliferation of inflammatory cells.

The team also noted that when animals were pretreated with curcumin, there was a clear reduction in DNA binding, proving that curcumin inhibits NF-kappa B activation in the colon.

*Am J. of Physiology-Gastrointestinal and Liver Physiology, July 2003.*

### **DIM Acts as a Potent Anti-Androgen**

DeIndole-3-carbinol (I3C), which the body converts into Diindolylmethane (DIM), is found in cruciferous vegetables such as broccoli, brussels sprouts and cauliflower. DIM and I3C alter the way the body metabolizes estrogen, from the cancer-causing pathway to the cancer-inhibiting pathway. Researchers have now unveiled evidence that DIM also affects testosterone. While the prostate needs testosterone to function normally, it is also thought to play a role in the early stages of prostate cancer and physicians typically treat prostate cancer patients with anti-androgen drugs.

In two papers published in the Journal of Biological Chemistry, researchers report that DIM significantly halted proliferation of androgen-dependent human prostate cancer cells. In one of the studies, androgen-dependent prostate cancer cells treated with DIM grew 70% less than androgen-dependent untreated cells. DIM also inhibited dihydrotestosterone (DHT) stimulation of DNA synthesis in the androgen-dependent cancer cells. These effects were not seen in androgen independent prostate cancer cells.

To determine whether men are at risk for prostate cancer, they are usually tested for levels of prostate-specific antigen (PSA), a growth factor for prostate cancer. In prostate cancer cells, DIM reduced intracellular and secreted PSA protein levels caused by DHT.

The researchers determined that DIM's molecular structure is similar to Casodex, a synthetic anti-androgen drug.

*J Biol Chem. 2003 Mar 27.*

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