

Vitamin Research News

Dedicated to the Scientific Pursuit of Better Health

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The President's Desk

Nutritional Disinformation

Obesity is a serious national health problem of epidemic proportions. And while millions of Americans struggle to control their weight, finding out what works is one of the biggest challenges. Want information on which foods improve health and aid in weight control? Well, if you followed the recommendations of the original USDA food pyramid, and cut out fats while munching on carbohydrates, you may be one of the millions of people who gained weight while dramatically increasing the risk of developing heart disease, diabetes or cancer. This month's cover review of the newly proposed food pyramid sheds light (and pounds) on the most common misconceptions surrounding the nutritional value of foods.

Another hot weight-control controversy surrounds the natural herb, ephedra. Although it has been safely used as a medicinal herb for over 5,000 years, media reports on the purported dangers of ephedra continually focus on a small number of people who allegedly have experienced adverse effects, usually due to misuse or inappropriate use. The media tends to sensationalize these rare events in attempts to erode current legal protections afforded to dietary supplements. Anyone seriously concerned about the skyrocketing costs of medical prescriptions should imagine what will happen if all supplements and herbs are legislated into prescription medicines. The safest, most effective and most affordable methods of maintaining health and preventing diseases will quickly be out of reach of all but the very rich.

Nutritional disinformation is especially effective when cast in the guise of scientific reporting. This was evident when a recent 60 Minutes II program described ongoing research on the hunger hormone, Ghrelin. On the segment a medical professional predicted that a patient was fighting a losing battle in trying to lose weight, declaring, "she will not be able to maintain that weight loss, but I encourage her to try." His opinion, buttressed by claims that we are genetically doomed to our eventual weight, with wiggle room for five or ten percent with diet and exercise, seemed intended to underscore the real message of the segment: Just give up, have another double cheeseburger and supersized fries, and wait for Big Pharma to come up with another miracle (read expensive) prescription cure.

As every reader of *Vitamin Research News* knows, there is no miracle pill or magic bullet. Healthy food choices and exercise are the foundation of any truly successful personal health program, and that includes weight control. So instead of giving up and waiting for the next pharmaceutical lifestyle pill, educate yourself, eat a healthy meal, and go get some exercise. The costs are minimal and the returns are fantastic.

Robert Watson
President/CEO

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Role of Heavy Metals in Diseases and Aging

Research Confirms Benefits of Chelation with EDTA

by Ward Dean, MD

In the two previous issues of *Vitamin Research News*, both intravenous and oral chelation therapy with EDTA were discussed. EDTA is a synthetic amino acid food preservative that has been used for nearly 50 years to clinically treat heavy metal toxicity and chronic degenerative diseases—especially, cardiovascular disease and cancer. Nevertheless, most orthodox physicians often deride claims of any benefit from chelation therapy, belittling the concerns of health-conscious people worried about potential adverse effects from heavy metals, such as lead, mercury, and aluminum.

Now, a flurry of papers recently published in prestigious “establishment” journals confirms that low levels of heavy metals—even at levels that were once considered “safe”—are, in fact, dangerous. This new research documents the toxic effects of these metals as they accumulate in the body over time, and indicates that chelation therapy provides benefits by reducing the body burden of these toxins, resulting in improved physiological functioning and better health.

Lead Increases Vascular Disease, Cancer, and Overall Mortality

Lead poisoning has long been recognized as a health hazard. Lead has been historically used in a number of industrial processes, including the manufacture of batteries, paints, and as an additive in gasoline. Acute lead poisoning (short-term, high exposure) causes symptoms of abdominal pain or “lead colic,” cognitive deficits, peripheral neuropathy, arthralgias, decreased libido, and anemia. It can be diagnosed by a characteristic “lead line” at the junction of the teeth and gums, and by high blood lead levels (over 80 micrograms per deciliter). (1)

However, the effects of chronic exposure to low levels of lead are more difficult to determine. Long-term exposure to low levels of lead may result in the gradual accumulation of lead and the development of a number of disorders and diseases, including learning and behavior problems, cardiovascular and kidney diseases, decreased fertility, hypertension and cancer. (2)

To determine the effects of chronic exposure to low levels of lead, Drs. Mark Lustberg, of the University of Maryland School of Medicine, and Ellen Silbergeld, of Johns Hopkins University, compared data gathered from the 2000 census in the US, and the massive Third National Health and Nutrition Examination Survey (NHANES-III). (3) Based on these data, Lustberg and Silbergeld estimated that 29 million people (15 percent of the adult population over the age of 20) had blood lead levels of at least 20 mcg/dL from 1976-1980, and that currently at least 1.7 million people in the US have blood lead levels of at least 20 mcg/dL.

To compare the incidence of disease with low levels of lead, the authors examined the death rates of participants in the NHANE Survey who had lead blood levels less than 30 mcg per dL (30 mcg per dL is the level normally considered “toxic”). They found that blood lead levels ranging from as little as 20 to 29 mcg per dL were associated with a 39 percent increase in mortality from all causes. Addition-ally, these “low” levels of lead were associated with a 46 percent increase in mortality from cardiovascular diseases, and a whopping 68 percent increase in mortality due to cancer.

Even lower blood lead levels, measuring from 10 to 19 mcg/dL were associated with a significant 17 percent increase in mortality from all causes and 46 percent increase in mortality from cancer, when compared with blood lead levels less than 10 mcg/dL (Fig. 1.). Thus, it appears that there is no safe level of lead. Lead at any level contributes to increased disease-related mortality—especially from heart disease and cancer.

Mercury and Cardiovascular Disease

Until recently, the notion of treating heart disease with chelation therapy—one of the mechanisms of which is to remove heavy metals—was scorned by the medical establishment. But it appears that, once again, the field of “alternative medicine” has been ahead of its time. In an article in the November 28th, 2002 issue of the *New England Journal of Medicine*, “Mercury, fish oils, and the risks of myocardial infarction,” the authors stated:

“Mercury may promote atherosclerosis and hence increase the risk of myocardial infarction in several ways. Mercury promotes the production of free radicals...and may bind selenium [so that it] cannot serve as a cofactor for glutathione peroxidase. Mercury may...inactivate the antioxidant properties of glutathione, catalase, and superoxide dismutase. Mercury may induce lipid peroxidation, and mercury levels were a strong predictor of oxidized LDL levels...Mercury compounds can also promote platelet aggregability and blood coagulability, inhibit endothelial-cell formation and migration, and affect apoptosis and the inflammatory response. Increased rates of cardiovascular disease were found in mercury-exposed workers, and mercury levels in hair predicted the progression of carotid atherosclerosis in a longitudinal study.” (4)

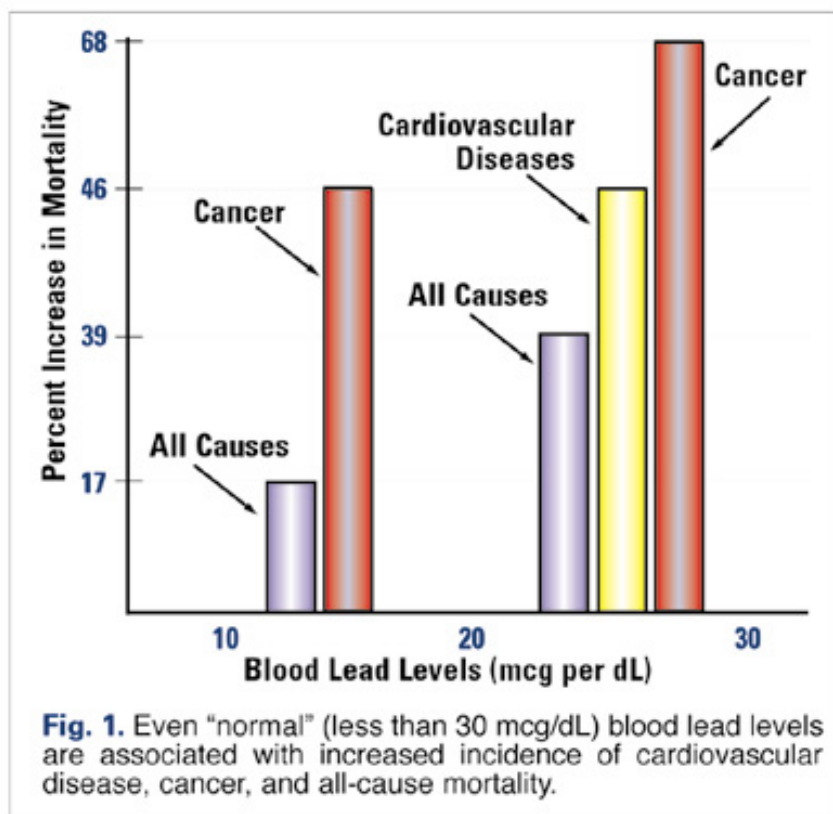
The article found that mercury levels were directly associated with the risk of myocardial infarction (heart attacks), and that this partially offset the protective effects of DHA derived from eating fish. *The New England Journal* editorialized: “The notion that methylmercury contributes to cardiovascular disease is certainly a testable hypothesis and one that warrants further testing.” (5)

Aluminum and Iron

A team of Belgian scientists recently published an article confirming that aluminum and iron both accumulate in the brain with aging, and that both can be removed from the brain with chelation therapy. They discuss the ability of several chelating agents to remove both metals from the brain and recommend long-term chelation therapy to prevent and treat a number of aging-related neurodegenerative diseases. (6)

Aluminum has been implicated as a cause of Alzheimer’s disease, atherosclerosis, and aging, due to its potent crosslinkage-promoting properties. Professor Johan Bjorksten’s *Crosslinkage Theory of Aging* was reviewed previously in a series of articles in *Vitamin Research News*. (7-10) Bjorksten recommended chelation therapy with EDTA as one of the most effective ways to prevent aluminum crosslinking and delay aging. (11)

Chelation Therapy Reverses Lead-Induced Kidney Damage



One of the most dramatic (and best-documented) physiological changes that occurs with aging is the inexorable decline in kidney function (Fig. 2). (12) Additionally, researchers have found that exposure to even very low levels of lead significantly impairs kidney function. (13)

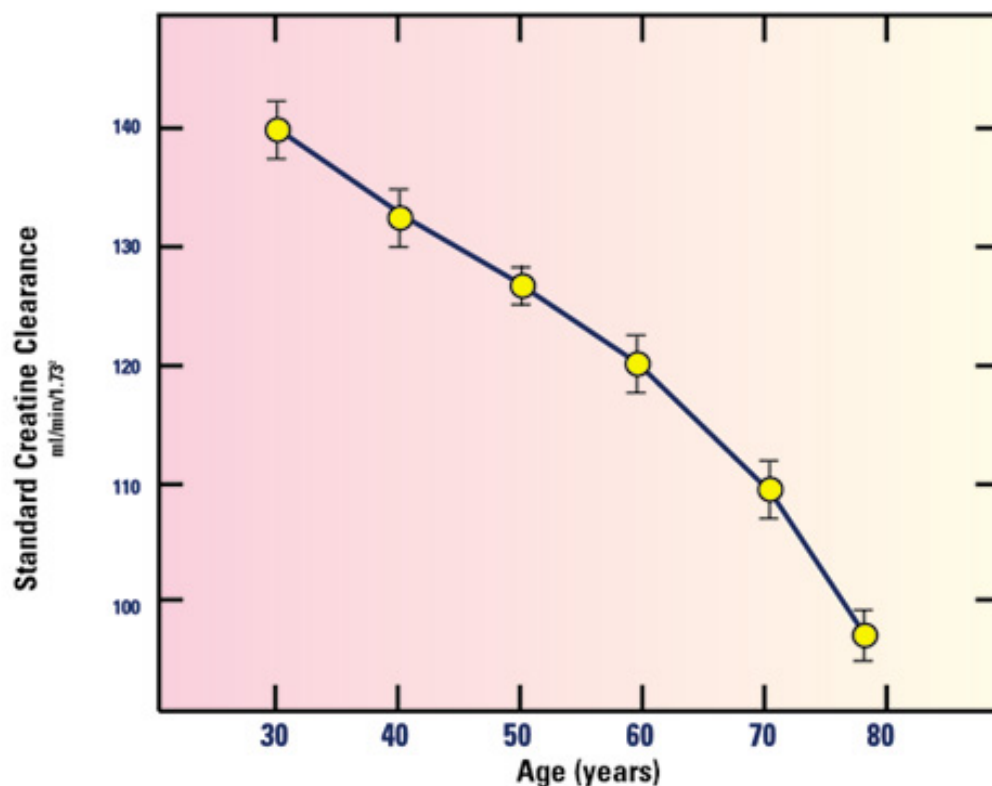


Fig. 2. Decline in kidney function with age, as measured by the decline in creatinine clearance (Andres and Tobin, 1976).

A group of physicians at Chang Gung University in Taipei, Taiwan, conducted an interesting study to determine whether chelation therapy with intravenous EDTA could retard the progression of renal insufficiency. (14) The study originally involved 202 subjects (167 men and 35 women) ranging from 44 to 68 years of age who were suffering from chronic renal insufficiency (serum creatine, an indicator of kidney function, ranged between 1.5 mg/dL, to 3.9 mg/dL). All subjects had “normal” body lead concentrations. After screening subjects to ensure there was no occupational exposure to lead, the researchers observed decline in kidney function over the next two years.

After two years the researchers identified 64 patients with “high-normal” levels of body lead levels (between 80 and 600 mcg) using an EDTA mobilization test. In this test, one gram of EDTA was administered intravenously, and urine was collected over the following three days. These 64 patients were enrolled in a treatment phase where half the subjects (26 men and 6 women) received chelation therapy (one gram of calcium disodium EDTA in 200 ml of saline, administered intravenously over two hours, once per week). After 3 months of treatment, the body lead burden of the chelation group had dropped from an average of 150 mcg to 43 mcg, and the glomerular filtration rate (a direct measure of kidney function) increased an average of 12 percent (Fig. 3).

The authors followed the control and chelation treatment groups for an additional 24 months. During that time, nineteen patients received an additional course of treatment because their serum creatinine had risen above its

pre-treatment level. None of the subjects required more than one repeated three-month course of treatment. The authors remarked repeatedly about the safety and lack of toxicity of EDTA, and that it improved kidney function and reduced progression of renal insufficiency for at least 24 months (Fig. 4).

I think that in view of the reported adverse effects of even low levels of lead, the improvement in kidney function would have been even greater had the treatments continued beyond the original course of only 12 infusions. In my experience, about ten treatments are required before improvement in cardiovascular status occurs. Most chelating physicians recommend a course of twenty to thirty treatments (depending on one's condition), with "maintenance therapy" on a monthly basis thereafter. Thus, the dramatic improvements shown in the *NEJM* study were based on the patients' receiving what would be considered to be a minimal course of treatment by most chelating physicians in the US.

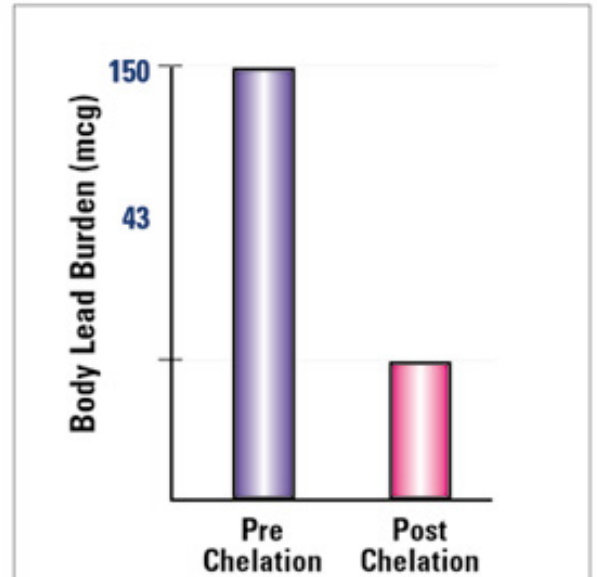


Fig. 3. Decrease in body lead burden before and after chelation therapy.

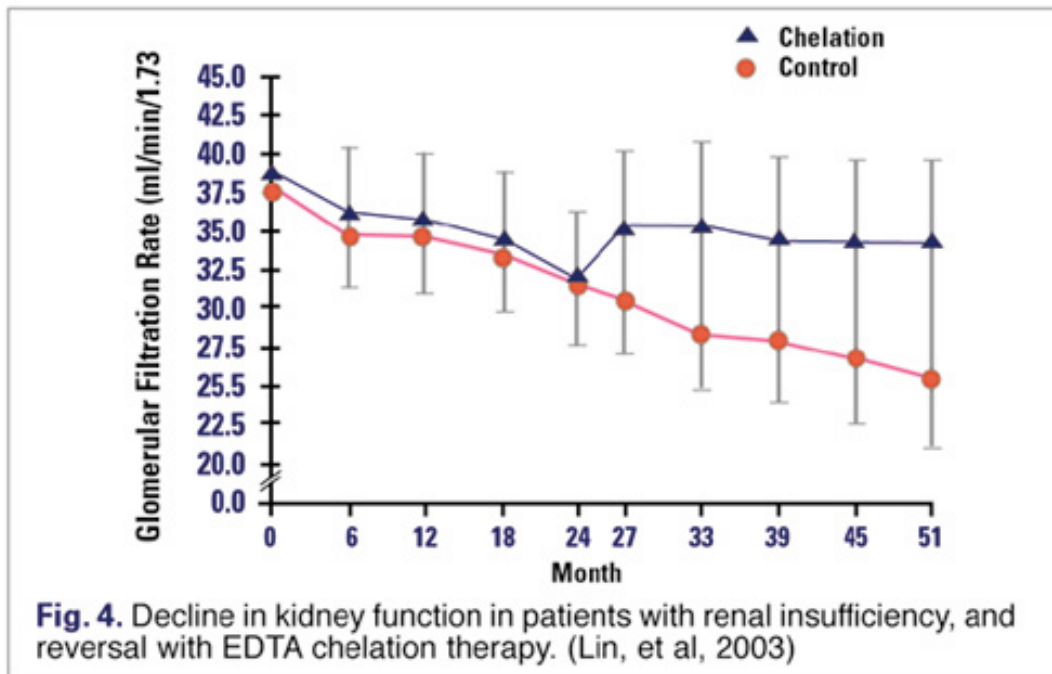


Fig. 4. Decline in kidney function in patients with renal insufficiency, and reversal with EDTA chelation therapy. (Lin, et al, 2003)

Conclusion

Toxic heavy metals like lead, mercury, and aluminum are implicated, even at low doses, in a number of diseases. Unfortunately, since these metals are ubiquitous in the environment, it is difficult to completely avoid all exposure. Consequently, it is likely that nearly everyone has an abnormal body burden of one or more of these toxic elements (The

"normal" level of these substances in the body is "zero."). Chelation therapy with EDTA, either oral or intravenous, is an underutilized treatment modality that potentially offers tremendous benefits for preventing and treating many age-related chronic degenerative diseases. Although the "challenge urine test" is the "gold standard" for diagnosing lead and mercury levels, hair mineral analysis is also acceptable. Hair analysis is inexpensive, convenient, and reflects a fairly accurate indication of the body burden of these and other toxic elements. Also, although DMSA is considered to be the chelating agent of choice for mercury, EDTA is a safe and effective chelator of mercury as well as lead.

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Redesigning the Food Pyramid

A Review of Proposed Improvements to the USDA Food Guide

by Jim English

In 1992 the US Department of Agriculture (USDA) introduced the first official Food Guide. The food guide—presented in the graphic form of a “pyramid”—was an early attempt to educate the public with a simplified list of dietary recommendations thought to improve health and reduce incidence of chronic diseases. The current ubiquity of the food pyramid is a good measure of just how successful the guide has been in bamboozling the American public. In the short span of twenty years, the pyramid revolutionized the dietary habits of tens of millions of people and is the basis on which many doctors, nutritionists, laypersons and food producers alike judge the quality of the diet.

Although the pyramid appeared sound at the time it was produced, and continues to carry the ring of authority, many of its recommendations are now recognized to be flawed, based on emerging research. For the last decade, the food guide has been criticized by scientists for being outmoded and presenting recommendations that are potentially harmful.

Carbo Loading and Obesity

One of the most far-reaching concepts promoted by the pyramid was the notion that obesity and heart disease are linked to the consumption of fats. This concept gave rise to a nutritional orthodoxy that dictated that the majority of calories should come from complex carbohydrates—primarily breads, cereals, rice, pasta, potatoes and other starches (up to 11 servings a day!). Additionally, meats, fish, eggs, and other protein sources were relegated to relatively small portions (2 to 3 servings per day), while fats were severely restricted (the guide grouped fats and oils with sweets and recommended “use sparingly”). Many researchers have pointed out that the practice of switching dietary fats for carbohydrates—particularly those found in the food pyramid—mirrors the start of the rise in obesity that is currently at epidemic proportions.

Building a Better Pyramid

In response to growing criticism, the USDA’s Center for Nutrition Policy and Promotion is currently re-evaluating the food pyramid. At this same time, a group of Harvard researchers has already proposed a revised food pyramid. In the January, 2003 issue of *Scientific American*, Walter C. Willett and Meir J. Stampfer,

professors of epidemiology and nutrition at the Harvard School of Public Health, introduced a food guide incorporating improvements designed to address many of the problems in the old pyramid. In their article, "Rebuilding the Food Pyramid," Willett and Stampfer proposed new nutritional recommendations that are based, in large part, on a recent study they co-authored in the December 2002 issue of the *Journal of Clinical Nutrition* (see [abstract](#)).

Reducing Intake of Carbs

Willett and Stampfer point out that the USDA pyramid provides misleading guidance by "promoting the consumption of complex carbohydrates and eschewing fats and oils," stating, "not all fats are bad for you, and by no means are all complex carbohydrates good for you."

Complex carbohydrates form the base of the current USDA food pyramid, yet scientists have found little evidence to show that high daily intake of carbohydrates provides any benefit. Refined carbohydrates, such as white bread and white rice, are quickly broken down in the body, causing rapid elevation of blood glucose levels. This jump in blood sugar levels triggers a large release of insulin. Insulin subsequently clears glucose from the blood, leading to increased feelings of hunger. In short, eating carbohydrates contributes to overeating and obesity. Even eating a potato, which is mainly starch, raises blood sugar levels higher than eating the same amount of calories from table sugar. "In our epidemiological studies, we have found that a high intake of starch from refined grains and potatoes is associated with a high risk of type 2 diabetes and coronary heart disease. Conversely, a greater intake of fiber is related to a lower risk of these illnesses."

To address this imbalance Willett and Stampfer redesigned their food pyramid by first moving white rice, white bread, potatoes, pasta and refined carbohydrates from the foundation (base) of the pyramid up to the top with a "use sparingly" recommendation. And they still recommend eating carbohydrates at most meals, but the list of approved carbs are derived from "healthy carbohydrates," in the form of whole grain foods, such as whole wheat bread, oatmeal and brown rice.

New Respect for Dietary Fats

As mentioned previously, the USDA pyramid radically altered the role of dietary fats in the American diet. This is because the original intent of nutritionists who designed the food guide was to convey a simple message—saturated fats (found in red meat and dairy products) raise cholesterol levels and increase risks of developing cardiovascular disease. Willett and Stampfer observe that, "The notion that fat in general is to be avoided stems mainly from observations that affluent Western countries have both high intakes of fat and high rates of coronary heart disease. They point out that this correlation, however, is limited to saturated fat. Societies in which people eat relatively large portions of monounsaturated and polyunsaturated fat tend to have lower rates of heart disease." Unfortunately the "all fat is bad" message so effectively conveyed by the USDA pyramid obscured numerous studies showing that polyunsaturated fats, as found in fish—can actually reduce cholesterol levels.

To correct the unbalanced view of fats codified in the old pyramid, Willett and Stampfer drew on previous



research gleaned from the 1976 Nurses' Health Study, and the Health Professionals Follow-Up Study in 1986. When researchers compared fat intake of some 90,000 women and 50,000 men, they found the risk of heart disease increased substantially when eating trans-fats, and only slightly when eating saturated fats. By contrast, a diet that contained both monounsaturated and polyunsaturated fats was actually found to decrease the risk of cardiovascular disease. Researchers observed that, since these two effects counterbalanced each other, "higher overall consumption of fat did not lead to higher rates of coronary heart disease." Noting that these findings "reinforced a 1989 report by the National Academy of Sciences that concluded that total fat intake alone was not associated with heart disease risk."

Willett and Stampfer also challenge the idea, promoted by the American Heart Association and other groups, that people get no more than 30 percent of daily calories from fat. "This 30 percent limit has become so entrenched among nutritionists that even the sophisticated observer could be forgiven for thinking that many studies must show that individuals with that level of fat intake enjoyed better health than those with higher levels. But no study has demonstrated long-term health benefits that can be directly attributed to a low-fat diet. The 30 percent limit on fat was essentially drawn from thin air."

Willett and Stampfer now recommend a healthy diet that includes generous servings of unsaturated fats, including liquid vegetable oils—especially olive and fish oils. "If both the fats and carbohydrates in your diet are healthy, you probably do not have to worry too much about the percentages of total calories coming from each." Trans fat does not appear at all in the pyramid, because "it has no place in a healthy diet."

Eat Plenty of Vegetables, Fruit

Willett and Stampfer note that high intake of fruits and vegetables is perhaps "the least controversial aspect of the food pyramid," and recommend both should be eaten in abundance. Interestingly they note that while reductions in risk of cancer are widely promoted, evidence for this comes from case-control studies that are susceptible to numerous biases, pointing out that recent findings from large prospective studies tend to show "little relation between overall fruit and vegetable consumption and cancer incidence. (Specific nutrients in fruits and vegetables may offer benefits, though; for instance, the folic acid in green leafy vegetables may reduce the risk of colon cancer, and the lycopene found in tomatoes may lower the risk of [lung and] prostate cancer.)"

Where Willett and Stampfer see a significant value in fruits and vegetables is in their ability to reduce cardiovascular disease. "Fruits and vegetables are also the primary source of many vitamins needed for good health. Thus, there are good reasons to consume the recommended five servings a day, even if doing so has little impact on cancer risk."

New Guidelines on Protein Sources

The revised pyramid addresses another flaw in the USDA pyramid by recognizing important health differences between red meats (beef, pork and lamb) and the other foods in the meat and beans group (poultry, fish, legumes, nuts and eggs). Red meats, which are high in saturated fat and cholesterol, are associated with an increased risk of coronary heart disease, Type 2 diabetes and colon cancer. By contrast, poultry and fish contain less saturated fats, and fish are a good source of essential Omega-3 fatty acids. "Not surprisingly, studies have shown that people who replace red meat with chicken and fish have a lower risk of coronary heart disease and colon cancer."

Willett and Stampfer also recommend up to three servings per day of nuts. Nuts, which were restricted in the old guide, likely due to their high fat content, are actually a good source of unsaturated fats. Research has shown that "nuts improve blood cholesterol ratios, and epidemiological studies indicate that they lower the risk of heart disease and diabetes." They also note that people who eat nuts are "actually less likely to be obese; perhaps because nuts are more satisfying to the appetite, eating them seems to have the effect of significantly reducing the intake of other foods."

Cut Back on Dairy Products

Another issue addressed by the new food guide is the old recommendation of consuming the equivalent of two

or three glasses of milk a day. This advice was based on the belief that dairy products provide calcium, which was thought to help prevent osteoporosis and bone fractures. "But the highest rates of fractures are found in countries with high dairy consumption, and large prospective studies have not shown a lower risk of fractures among those who eat plenty of dairy products. Calcium is an essential nutrient, but the requirements for bone health have probably been overstated."

Willett and Stampfer also challenge the notion that high dairy consumption is safe: "in several studies, men who consumed large amounts of dairy products experienced an increased risk of prostate cancer, and in some studies, women with high intakes had elevated rates of ovarian cancer. Although fat was initially assumed to be the responsible factor, this has not been supported in more detailed analysis. High calcium intake itself seemed most clearly related to the risk of prostate cancer. More research is needed to determine the health effects of dairy products, but at the moment it seems imprudent to recommend high consumption."

Daily Exercise, a Multivitamin and Moderate Alcohol Use

Last, but not least, Willett and Stampfer have replaced the bottom of the USDA pyramid (previously recommending up to 11 servings of complex carbohydrates) with a program of daily exercise to aid in weight control. They also recommend a daily multivitamin for most people, and allow alcohol consumption as an option (if not contraindicated by specific health conditions or medications) based on numerous studies showing moderate alcohol consumption to be of benefit to the cardiovascular system.

Proof of Concept

To demonstrate that their improved pyramid is actually healthier than the current USDA model, Willett and Stampfer, along with their colleagues in the Harvard study, created the Alternative Healthy Eating Index (AHEI) to measure what happens when people follow their dietary recommendations. When epidemiological studies were compared to the new index the researchers discovered that men and women following the new guidelines have a lower risk of chronic diseases, particularly cardiovascular disease. They state, "This benefit resulted almost entirely from significant reductions in the risk of cardiovascular disease—up to 30 percent for women and 40 percent for men."

Conclusion

While the USDA continues to review the old food guide, Willett and Stampfer have presented a new pyramid—based on twenty years of research—that incorporates dietary strategies that are proven to improve health. Willett and Stampfer recommend eating vegetables and fruits in abundance, along with moderate amounts of healthy sources of protein (nuts, legumes, fish, poultry and eggs). They also recommend cutting back on consumption of refined grains (including white bread, white rice and white pasta), potatoes and sugar, and cutting consumption of dairy products to one or two servings a day. Studies indicate that adherence to the recommendations in the revised pyramid can significantly reduce the risk of cardiovascular disease for both men and women, and reduce incidence of diabetes.

These recommendations are also more in line with the dietary recommendations of Drs. Robert Atkins, Barry Sears, and Vladimir Dilman.

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Abstract

Diet quality and major chronic disease risk in men and women: moving toward improved dietary guidance.

McCullough ML, Feskanich D, Stampfer MJ, Giovannucci EL, Rimm EB, Hu FB, Spiegelman D, Hunter DJ, Colditz GA, Willett WC.
Am J Clin Nutr 2002 Dec;76(6):1261-71.

BACKGROUND: Adherence to the Dietary Guidelines for Americans, measured with the US Department of Agriculture Healthy Eating Index (HEI), was associated with only a small reduction in major chronic disease risk. Research suggests that greater reductions in risk are possible with more specific guidance.

OBJECTIVE: We evaluated whether 2 alternate measures of diet quality, the Alternate Healthy Eating Index (AHEI) and the Recommended Food Score (RFS), would predict chronic disease risk reduction more effectively than did the HEI.

DESIGN: A total of 38 615 men from the Health Professional's Follow-up Study and 67 271 women from the Nurses' Health Study completed dietary questionnaires. Major chronic disease was defined as the initial occurrence of cardiovascular disease (CVD), cancer, or nontraumatic death during 8-12 y of follow-up.

RESULTS: High AHEI scores were associated with significant reductions in risk of major chronic disease in men [multivariate relative risk (RR): 0.80; 95% CI: 0.71, 0.91] and in women (RR: 0.89; 95% CI: 0.82, 0.96) when comparing the highest and lowest quintiles. Reductions in risk were particularly strong for CVD in men (RR: 0.61; 95% CI: 0.49, 0.75) and in women (RR: 0.72; 95% CI: 0.60, 0.86). In men but not in women, the RFS predicted risk of major chronic disease (RR: 0.93; 95% CI: 0.83, 1.04) and CVD (RR: 0.77; 95% CI: 0.64, 0.93).

CONCLUSIONS: The AHEI predicted chronic disease risk better than did the RFS (or the HEI, in our previous research) primarily because of a strong inverse association with CVD. Dietary guidelines can be improved by providing more specific and comprehensive advice.

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Vitamin D and Osteoporosis

by Karen Kaufman, MS, CCN, and Jim English

Last month we examined a study that alleged that high levels of vitamin A are linked to an increased incidence of osteoporosis in Swedish males. (1) The study, published in the January, 2003 issue of the *New England Journal of Medicine*, ignored or overlooked a number of significant facts:

- Swedish men are twice as likely as British women to suffer fractures due to osteoporosis;
- Residents of Scandinavia (including the Swedes) have the highest intake of vitamin A from food, consuming up to six times more than other Europeans;
- Vitamin A antagonizes vitamin D, which is vital for bone growth;
- Northern Sweden receives less sunlight, which is required to synthesize vitamin D;
- Sweden doesn't fortify foods with vitamin D, as does the US. (2)

In addition to the above, the *NEJM* study was also seriously flawed because it failed to account for the most important factor affecting the incidence of osteoporosis-related fractures—a deficiency of vitamin D.

In the last few months a number of published studies have demonstrated that vitamin D plays a critical role in helping to prevent osteoporosis and non-traumatic fractures. Most importantly, these studies also indicate that calcium—universally touted as a cure-all for brittle bones—has little or no ability to halt or prevent osteoporosis.

Growing Osteoporosis Epidemic

According to the National Institutes of Health (NIH), osteoporosis is a major public health threat that currently affects 44 million Americans, of which 80 percent are women. These troubling numbers are expected to increase as the general population ages. Osteoporosis—literally “porous bones”—is a disease characterized by low bone density and structural deterioration of bone tissues. Over time, osteoporosis leads to loss of height as spinal vertebrae literally collapse, leading to a consequent loss of mobility and chronic pain. Additionally, people who suffer with osteoporosis are much more vulnerable to suffering from fractures of the hip, spine and wrist. Hip fractures are especially troublesome, as they frequently require hospitalization and immobilization of the patient, leading to an increased incidence of infections, formation of blood clots, and ultimately, higher rate of death.

Calcium Supplements Fail to Build Bone

In a new study just published in the *American Journal of Clinical Nutrition*, researchers report that vitamin D intake can lower the incidence of osteoporotic hip fractures in postmenopausal women, whereas milk and calcium have proven ineffective. (3) The authors based their findings on the Nurses Health Study, examining data on 72,337 postmenopausal registered nurses between the ages of 34 and 77. The researchers examined diet and nutritional supplement use during an 18-year period. The researchers found that women who consumed at least 500 IU's per day of vitamin D from foods and supplements were 37 percent less likely to suffer from hip fractures than women consuming less than 140 IU's of vitamin D per day. Surprisingly, calcium intake was not associated with any measurable reduction in risks for experiencing a hip fracture.

Vitamin D Shown to Prevent Fractures

In a second study recently published in the *British Medical Journal*, researchers concluded that vitamin D supplements alone are effective in preventing fractures in men and women. (4) The researchers determined this after studying the effects of vitamin D supplements on the incidence of fractures in men and women aged 65 years and older. 2,686 people over the ages of 65 were followed over a five-year period. Every four months each participant was given either a placebo or a capsule containing 100,000 IU's of vitamin D3—an amount equivalent to about 825 IU's per day. Adults receiving the vitamin D supplement were subsequently found to have a 22 percent reduced risk of experiencing a fracture at any site without any adverse effects. Impressively, the study found the group taking vitamin D supplements were 33 percent less likely to suffer from fractures at the most common sites for osteoporotic patients—the hips, wrists, forearms and vertebrae.

Vitamin D Relieves Low Back Pain

In another interesting twist, vitamin D deficiency is endemic in Saudi Arabia, despite its proximity to the equator. The deficiency is particularly noticeable among women who wear traditional attire that completely veils the skin from the sun. In one study researchers examined 360 patients 15 to 52 years of age who sought

treatment for chronic low back pain. All patients had experienced low back pain for at least 6 months, with no identifiable cause. When physicians measured the vitamin D status of the back pain sufferers they discovered that 83 percent had abnormally low levels of vitamin D. Following treatment with vitamin D supplements, 100 percent of the subjects with low levels of vitamin D showed clinical improvement, and 95 percent of the entire group improved. This is an extremely positive result considering that most medical treatments for low back pain have at best a 50 percent success rate. (5)

Vitamin D, Cancer and Immune Function

In addition to preventing fractures, vitamin D deficiency is also associated with other health conditions. Low levels of vitamin D have been linked with an increased risk of numerous cancers, including prostate, breast, colon, and skin cancer. (6,7) Ongoing research also indicates that vitamin D plays a role in immune function. For example, while Multiple Sclerosis (MS) is almost non-existent at the equator—where sun exposure guarantees adequate synthesis of vitamin D in the skin—the incidence of MS rises with increases in latitudes (southern and northern) in both hemispheres. Research also indicates that occurrence of Type I diabetes, another autoimmune disease, may be decreased by ensuring adequate vitamin D supplementation in infants. (8)

Conclusion

Millions, possibly billions, of dollars have been spent on research studies aimed at establishing that calcium is effective for preventing bone loss. It is hard to ignore the public health campaigns that urge everyone to make sure they get enough calcium, whether from supplements or dairy products. Half the foods and juices on supermarket shelves are fortified with additional calcium. However, these two studies when considered together question some basic assumptions that are at the core of how conventional medicine approaches the public health concern of osteoporosis.

Physicians and researchers have been concentrating on the role of calcium supplementation in preventing bone loss. It has only been in recent years that physicians have even included vitamin D in their osteoporosis protocol. Now, within the space of a couple of weeks, two studies—one from England and one from the US—assert that vitamin D supplementation alone is an effective strategy to prevent this disease.

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The Alleged Role of Ephedra in the Death of a Professional Baseball Player

Richard B. Kreider, Ph.D., FACSM, EPC, FASEP, Mike Greenwood, PhD, CSCS*D, Lori Greenwood, PhD, ATC, LAT
Exercise & Sport Nutrition Lab, Center for Exercise, Nutrition & Preventive Health Research, Baylor University

As active researchers in the area of exercise physiology, sport nutrition, strength and conditioning, and sports medicine, we would like to make the following comment and observations regarding the current controversy about the supposed link of ephedra supplementation to the tragic death of Baltimore Orioles' pitcher Steve Bechler due to multiple organ failure, as a result of heat stroke, on Feb.17, 2003.

Heat stroke fatalities are preventable if proper screening, conditioning, acclimatization, and precautions are employed to ensure that athletes train safely in hot and humid environments.

The local coroner and members of Orioles' management have suggested that Mr. Bechler's death was related and/or caused by the possible consumption of a dietary supplement containing the herb ephedra.

These reports have caused a flurry of reports in the media questioning the safety of ephedra supplementation and calls to ban the use of ephedra in Major League Baseball and/or sale of ephedra in over the counter dietary supplements.

At this point, toxicology reports have yet to confirm that Mr. Bechler had taken an ephedra supplement prior to practice.

Not a "Performance Enhancer"

Clinical studies published in peer-reviewed journals have indicated that ephedrine and herbal ephedra supplementation can significantly promote weight loss with no major side effects in overweight but otherwise healthy individuals. There is also evidence that taking ephedra and caffeine during training may help promote greater fat loss. Most studies show that ephedra or ephedrine has no ergogenic benefit in and of itself. Claims that ephedra is a "performance enhancing substance" is not supported by the scientific literature. However, there is data showing that caffeine has ergogenic value and that there may be some ergogenic value of ingesting supplements that have ephedra and caffeine.

Many over-the-counter medications (e.g., cold medications) contain ephedrine alkaloids (e.g., pseudoephedrine, etc.) at higher concentrations than found in nutritional supplements containing ephedra.

Ephedra Not a Factor

Closer examination of contributing factors related to Mr. Bechler's death reveals that even if Mr. Bechler did consume the supplement, it was probably the least of the contributing factors leading to his death—and it may not have been a factor at all.

According to reports in the media, Mr. Bechler had the following risk factors for heat stroke:

- A prior history of heat illness episodes while in high school—which heightens the probability of reoccurring incidents;
- A family history of sudden death following exercise (his half-brother died of an aneurysm at the age of 20 after overheating from playing baseball);
- A history of hypertension and liver problems;
- He had not eaten solid food for a day or two, in an apparent attempt to lose weight;
- He was apparently not adequately acclimatized to training in the heat and humidity of South Florida;
- It appeared that he was wearing two or three layers of clothing during workouts, again, in an attempt to lose weight;

- He was overweight and did not have a high enough fitness level to make it through conditioning drills; and,
- He was allowed to exercise until he collapsed with a core temperature reportedly of 106° F before being removed from the field.

It has been extensively documented that untrained, overweight, and unacclimatized people who perform excessive exercise in heat/humidity are at great risk of heat illness and heat stroke—particularly if they have become dehydrated and are trying to lose weight quickly.

Pre-Existing Conditions

These pre-existing conditions raise serious questions as to the appropriate medical screening, conditioning, and supervision of Mr. Bechler participating in spring conditioning drills as follows:

1. Were team athletic trainers and conditioning specialists aware of Mr. Bechler's prior history of heat illness or stroke? If they were aware, why weren't additional exercise precautions taken to ensure that he was adequately trained, acclimatized, hydrated, and fed prior to his participation in intense conditioning drills?
2. Media reports indicate that Mr. Bechler had a prior history of reporting to camp overweight and out of shape. If this is the case, was Mr. Bechler given appropriate training and dietary counseling and/or placed on a pre-camp conditioning and nutrition program to make sure he reported in good condition? Excess body fat is a major liability when exercising in hot/humid climates because it increases the insulation properties of the body which in turn reduces the amount of body heat that can be released through perspiration. Fatal heat strokes occur 3.5 more times in obese populations than any other population.
3. Why didn't pre-participation medical screening identify the risk factors to heat stroke described above? Complete pre-participation exercise stress tests and/or fitness/sprint tests would have indicated that Mr. Bechler was not in sufficient physical condition to perform intense training. Further, that he was not adequately acclimatized to exercise in the heat. According to media reports, Orioles' coaches knew that his conditioning was "not good." If this is the case, then how was he allowed to participate in intense conditioning training? Medical screening should have also revealed a history of hypertension and liver problems. These are all contraindications to performing excessive exercise particularly in hot/ humid environments.
4. Where was the supervision to notice signs of heat illness in Mr. Bechler? Media reports indicate that he was dizzy, he was only able to perform 60% of the conditioning drills, and that he collapsed on the field. These are all signs and symptoms of heat intolerance and/or heat illness. It is the responsibility of athletic trainers and strength and conditioning specialists to make sure that athletes safely engage in physical activity. If athletes are showing signs of abnormal responses to exercise, it is the responsibility of coaches, team physicians, athletic trainers and/or strength and conditioning specialists to pull the athlete out of conditioning drills – not the athletes.
5. Did the athletic trainers, team physicians, and/or strength and conditioning specialists know that Mr. Bechler evidently was not eating solid food? Training camp is not an appropriate time for athletes to diet. Allowing athletes to train when they are dehydrated and/or not well fed is dangerous. Athletes who report to camp overweight should be given proper nutritional counseling about safe and effective ways to lose weight.
6. Team physicians, athletic trainers, and strength and conditioning coaches should know what supplements athletes are taking so they can counsel them about whether or not they are safe, legal, effective, and/or appropriate to take at a given time during training. In this case, a supplement bottle was purportedly found in Mr. Belcher's locker yet team officials were supposedly unaware of him taking

supplements. This is troubling given that he had pre-existing medical conditions that were contraindicated for use of the purported supplement.

The supposed link that ephedra supplementation caused or contributed to heat stroke does not make sense from a physiological standpoint for the following reasons:

1. Some of Mr. Bechler's teammates claimed that he usually took three supplement capsules (1.5 servings) in the morning. According to that product's label, that would have provided 30 mg of herbal ephedra. This is one third of the dose shown in long-term clinical trials to be safe.
2. There is no scientific or medical evidence to indicate that ephedra/caffeine supplementation significantly increases thermal stress (increases core temperature 2-3 degrees above normal) during exercise, that it promotes dehydration, or increases the incidence of heat illness.
3. The thermogenic effects of ephedra and caffeine are relatively small, typically increasing resting caloric expenditure by 5-10 kcals per hour. One oral dose of ephedra/caffeine usually lasts less than 3 hours. Therefore, the total caloric (i.e., heat) load would be 15 – 30 calories in a 2-3 hour period following ingestion of one serving of an ephedra containing supplement. While this may be sufficient to promote a gradual weight loss (if one took 2-3 servings per day for 2-6 months), it would have minimal, if any, effects on core body temperature.
4. In contrast, athletes commonly expend 600-1,200 kcals per hour during intense exercise or 1,800 – 3,600 calories during an intense 3-hour practice. The thermal load of exercise generally increases core body temperature by 2-3 degrees when properly regulated.
5. The primary way heat from exercise is dissipated is through evaporation of sweat. Exercise in humid environments decreases the ability of sweat to evaporate making it more difficult to regulate body temperature. When the humidity is very high (i.e., > 70 percent), sweat may not fully evaporate which increases susceptibility to heat disorders. Humidity is higher in morning and evening hours. This is the primary rationale why intense exercise should be avoided during humid conditions and/or additional precautions should be employed to supervise athletes training or performing in hot/humid environments.
6. The media scare linking Mr. Bechler's heatstroke death with ephedra places emphasis on the unknown (pending toxicology results), and ignores known and obvious contributing factors already detailed here.

Media Reports Misleading

Unfortunately, these media reports may mislead some to conclude that simply prohibiting athletes from taking ephedra supplements will eliminate the risk of heat fatalities.

Instead, we should be stressing the importance of properly educating athletes, coaches and athletic trainers about the risks of training in hot and humid environments when participants are poorly conditioned, have not acclimatized to the heat and humidity, have engaged in dehydration practices, have medical histories that should have raised warning flags, and have not been sufficiently supervised.

Tips to Prevent Heat Illness and Stroke in Athletes

- Conduct a comprehensive medical examination to examine past history and risk factors to heat illness.
- Make sure the athlete is adequately trained to participate in high-intensity exercise prior to the start of conditioning.
- Acclimatize the athlete to training in hot/humid environments by beginning with brief and low-intensity exercise sessions and progressing up to longer and more intense training sessions during the first few days of training.
- Make sure the athlete is eating a healthy and nutritious diet and is well-hydrated prior to the start of each practice.
- Monitor ambient environmental conditions (temperature, humidity, heat index, etc) and adjust workout intensity, duration, and frequency as necessary to reduce risk to athletes.
- Monitor pre- and post-practice weight changes. Ingest 3 cups of water or sports drink for every pound lost during practice.
- Do not allow athletes who lost more than 3% of their body weight to practice again until their weight is up to acceptable ranges.
- Do not allow athletes to wear excessive clothing which can impede sweat evaporation and therefore reduce cooling.
- Provide frequent and planned water/sports drink breaks during practice. Ensure that the athlete drinks 1-2 cups of water or sports drink every 15-20 minutes during exercise in the heat/humidity.
- Watch for signs of heat illness including cramping, dry mouth, fatigue, dizziness, loss of concentration, pallor, vomiting, cessation of sweating, dry and hot skin, and inability to maintain exercise workloads.
- Do not excessively train athletes in hot/humid environments. The higher the intensity of training, the greater amount of heat produced. This means that if it is very hot/humid, practices should be rescheduled and/or involve less intense training.
- Athletes should be pulled from conditioning drills if they are unable to perform them and not allowed to train until they collapse.
- Provide appropriate medical supervision at a supervisor to athlete ratio that will allow signs and symptoms of heat illness to be immediately recognized.
- Provide prompt medical care when signs are observed of abnormal responses to exercise in the heat.
- Have emergency procedures well defined so that prompt medical attention can be provided in the event heat illness is observed.

It seems that Major League Baseball and others want to blame ephedra for the death of Mr. Bechler, rather than admit that they may have been negligent in screening, conditioning, and supervising their athletes.

The tragedy is that if Mr. Bechler had been properly screened and conditioned; if he had acclimatized properly to high heat and humidity conditions; if he had been adequately supervised; and if he had been properly educated about diet, weight loss, and the use of dietary supplements, he may be alive today.

In our view, this is another example of poor supervision and screening of athletes and not an issue of inappropriate use of a dietary supplement.

Prof. Richard Kreider is a specialist in exercise physiology and sport nutrition, is chairman of the Department of Health, Human Performance and Recreation at Baylor University. He founded the Exercise & Sport Nutrition Lab, the Center for Exercise, Nutrition, and Preventive Health Research, and is president of the American Society of Exercise Physiologists.

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Prof. Lori Greenwood is a certified athletic trainer and sports medicine specialist, is Associate Professor and Director of the Graduate Athletic Training and Sports Medicine Program in the Department of Health, Human Performance and Recreation at Baylor University.

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Customers' Corner

by Ward Dean, MD

VRP Medical Director and Director, Research & Development

Facial Lesions

Dear Dr. Dean,

I have small bumps on my face. They are dry, very scattered, and are not pimples. I've used acne medication (didn't work) and cortisone cream (no difference). Even moisturizers don't help. Can you suggest something for me to try?

Mrs. C.

Dear Mr. C.,

Without seeing the lesions, it's a little difficult to know exactly what you've got, but it sounds like it could be a condition known as *Molluscum contagiosum*, caused by a virus. Check out the condition on the internet and see if that's what you think you might have.

The bumps ("papules") usually go away by themselves after a number of months. However, you might also want to see a dermatologist, who can get rid of them by freezing them with liquid nitrogen. Although I've never used topical silver on a case of Molluscum, it might work. Try applying the **Silver Formula Oral-Topical** preparation several times daily. Let me know what happens.

Ward Dean, MD

Brain Boosting Combo

Dear Dr. Dean,

Does Vitamin Research offer a product or formula that contains Acetyl L-Carnitine (ALC), Huperzine, L-Tyrosine and DMAE?

Mr. H.

Dear Mr. H.,

VRP's **Extension IQ** is a comprehensive formula designed to enhance cognitive performance. **Extension IQ** contains *DMAE* and *Huperzine*. Although it doesn't contain *L-Tyrosine*, it does provide *L-Phenylalanine*, which is converted by the body into tyrosine. Although **Extension IQ** does not contain ALC, it does include *Vinpocetine*, *Ginkgo biloba*, and *Pyroglutamic Acid* (very similar to piracetam).

Ward Dean, MD

Pressure FX and Hypertension

Dear Dr. Dean,

I am 49 and have slightly elevated blood pressure. My doctor wanted to put me on the same antihypertensive medication the rest of my family is on but I declined as I wish for something that is natural. What can you tell me about **Pressure FX**? Does it only work if you have elevated Parathyroid Hypertensive Factor (PHF)? How do I find out if I have that?

Thanks, M.C.

Dear M.C.,

Treating hypertension is largely empirical—i.e., “guesswork.” Nothing works equally well on everyone. Whether using medications or supplements, physicians try various substances (or combinations of substances) that act on different mechanisms until we find something that works. There is no way to determine in advance how effective a particular substance will be.

Pressure FX is most effective in those who respond to calcium channel blockers (a popular and highly effective class of antihypertensive agents). Because **Pressure FX** is virtually devoid of adverse side effects, and so highly effective in the majority of people who take it, **Pressure FX** is worth a try.

Ward Dean, MD

Restoring Intestinal Balance

Dear Dr. Dean,

My wife and 20-month-old child were quite sick this winter and had to take antibiotics. What can we do to restore their “good” intestinal bacteria (hopefully something that my child can and will take).

Mr. B.

Dear Mr. B.,

Culturelle is specifically indicated for antibiotic-induced diarrhea. It is the most effective substance there is to restore normal intestinal bacteria wiped out by the antibiotics. **Culturelle** can be mixed in yogurt or any soft food and given to your 20 month old.

To treat respiratory infections in the future, I recommend a cool mist humidifier, filled with one bottle of 3 percent hydrogen peroxide, and two bottles of water. That produces a 1 percent concentration of vaporized peroxide that kills pathogens on contact—including in the sinuses and lungs. The vaporizer can be used in the bedroom at night, and in the home or office during the day. Usually, one or two days are adequate to knock out most upper respiratory infections.

This way, your wife and child won't have to rely so heavily on antibiotics, either.

Ward Dean, MD

Missing Boron?

Dear Dr. Dean,

Why is boron missing from your **Nutri-Joint** capsules?

Mr. L.

Dear Mr. L.,

While you are correct in stating that boron is not included in the **Nutri-Joint** formula, it is certainly not "missing."

VRP believes that the foundation of any dietary supplement regimen is a multi-nutrient formula (i.e. **Extend One**, **Extend Ultra**, etc). There are 2 mg of boron in **Extend One**, 1.5 mg in **Extend Prenatal**, and three mg in all of the other multis (per recommended daily dose).

Additionally, both of our multi-mineral formulas (**Essential Minerals** and **Advanced Essential Minerals**) each provide 2 mg of boron per day. Combining a multi-nutrient formula with a multi-mineral formula provides a generous daily dose of boron.

As you see, we do not use the "kitchen sink" approach of including every known vitamin and mineral in a product if adequate amounts are already included in our foundational multi-nutrient and multi-mineral formulas. VRP formulas are designed in a "modular" fashion, so that different formulas designed to support various conditions may be safely combined to obtain maximum benefit without wasting or possibly overdosing on various nutrients.

Ward Dean, MD

Ulcerative Colitis

Dear Dr. Dean,

What do you recommend for *Ulcerative Colitis* (UC), and do you have any articles concerning UC and supplements? Also, can one take P5P indefinitely, or should its use be limited?

R.I., MD

Dear Dr. I.,

For *Ulcerative Colitis*, I use a combination, including **Triphala**, **Detox FiberPlex**, **Chitosan**, **Sea Cure**, and **Culturelle**. **Cease Fire** may also help, due to its ability to kill *H. pylori*. Although I've never seen any studies on *H. pylori*'s involvement in UC, I wonder if it might not be a culprit?

I also recommend **AdaptaPhase I** and **AdaptaPhase II**, because stress usually aggravates UC. I've also noted a tendency for UC patients to have low levels of **DHEA** and **Pregnenolone**—so I usually add these substances as well.

P5P— the activated form of B6—can be used indefinitely.

Ward Dean, MD

Multiple Sclerosis Diagnosis

Dear Dr. Dean,

I have just been diagnosed with Multiple Sclerosis. I am over 50 and already have at least 30 years of damage. My doctor is trying to convince me to do some kind of injections and gives me a blank look if I talk about treating this as an autoimmune disorder! I would appreciate any suggestions you can offer to restore my immune system.

Also, what can you suggest to help (if possible) rebuild the myelin that has already been destroyed?

Ms. H.

Dear Ms. H.,

First, I think the most important single nutrient to normalize your immune system is **Thymic Protein A**. Although taking it daily can be expensive, **Thymic Protein A** is effective in doses as low as one or two envelopes per week. The specific thymic protein in **Thymic Protein A** is the “programmer” for the T-cells—which also control the B-cells. Unfortunately, I think your T-cells have “lost their program.”

Second, add **Calcium AEP**. See the article on VRP's website about the specific actions of **Calcium AEP** for multiple sclerosis.

Third, **Phosphatidylserine** may help promote myelin growth.

I also recommend vitamin B12 injections weekly, or sublingual B12 daily. Adenosine Monophosphate injections (25 mg weekly) are also helpful in MS. Ask your physician to prescribe this safe, often helpful therapy for you.

Hope these suggestions help.

Ward Dean, MD

Joint Inflammation

Dear Dr. Dean,

I am increasingly troubled with tendonitis in my wrists and bursitis in my shoulder. Do you think that **Unizyme** might help? I am taking **MSM** with some success but I still have inflammation in my joints.

Ms. S.

Dear Ms. H.,

Unizyme may help. However, it is also very important to stop doing activities that may be aggravating the condition. Many household chores can be causing your symptoms—i.e., overuse injury. Try doing tasks with your other hand and arm. Or just let certain things go undone, if possible. Complete rest for a week or two may help.

Boswellia and **Turmeric** are anti-inflammatory substances that may also help. If the wrist pain is due to carpal tunnel syndrome, more aggressive therapy may help. I have found a combination of therapies to be helpful for carpal tunnel syndrome. First, NewGrips, are adjustable pads that protect the fingers and palms in any gripping action. NewGrips are available from www.NewGrip.com.

Second, FLEXTEND gloves are a unique exercise device to strengthen the extensor muscles of the fingers, hand and wrist (the flexors are usually overworked in most cases of carpal tunnel syndrome, and the extensors are especially weak). FLEXTEND gloves are available from Balance Systems, Inc., 888-274-5444.

Ward Dean, MD

“Sugar Busters” Question

Dear Dr. Dean,

My I am a 70-year-old Type II diabetic. I have recently gone on the diet recommended in the book “The New Sugar Busters” and have had very good success in lowering my blood-sugar levels. Are you familiar with this low-glycemic diet and have you any opinion of it? As a diabetic, I have been reading labels and have already reduced my refined sugar intake, so the only real major changes I have had to make is cutting out white bread, white potatoes, and white flour products.

Mr. H.

Dear Mr. H,

Although I have never read the book you mention, I am familiar with the approach. If you have been reading the series of articles about the *Neuroendocrine Theory of Aging* in *Vitamin Research News*, you know that this is part of the two-pronged approach that we believe is essential for not only retarding the aging process, but also preventing and treating Type II diabetes: (1) restoring insulin receptor sensitivity; and (2) eating a low carbohydrate diet (similar to the Atkins or Sugar Busters regimen) to maintain low blood levels of glucose (and insulin).

VRP’s premier anti-diabetic formula, **GluControl**, is designed to restore sensitivity of insulin receptors, thereby resulting in reduced levels of glucose and insulin.

Ward Dean, MD

Supplemental Iron

Dear Dr. Dean,

Mineral supplements are widely promoted for positive health effects. However, various minerals such as iron and copper are free-radical reaction catalysts and some studies have shown that standard mineral supplements increased free radical levels throughout the body. Considering that many beneficial compounds, such as the well-known anti-cancer compounds Inositol Hexaphosphate (IP6) or phytate and **EDTA** work partially by evacuating minerals from the body, does it make any sense for the average healthy person to supplement with minerals?

Thanks, Mr. DS.

Dear Mr. DS.,

I agree that iron is an essential toxin. I think the dangers of copper are wrongly overemphasized. Copper is an essential component of a key antioxidant enzyme, superoxide dismutase. Also, it is necessary to maintain a proper balance of copper to zinc. One benefit of **EDTA** is its ability to chelate “metastatic calcium”—i.e., calcium that has been deposited where it doesn’t belong, as well as other heavy metals like lead, mercury, aluminum and cadmium.

For a complete explanation of the evolution of VRP’s viewpoint on calcium/ magnesium balance, see page 9 of the Customer Corner in the March, 2000 issue of *Vitamin Research News*. Also, see the article in this issue of *Vitamin Research News* on the benefits of chelation therapy with **EDTA**.

Ward Dean, MD

Lysine and Shingles

Dear Dr. Dean,

I’ve read that taking lysine daily protects against shingles by blocking the Chicken Pox virus. In your catalogue the only items that include lysine are Power Building packages that wouldn’t benefit my 85-year-old mother. I’ve noted that many of her elderly friends come down with shingles and I would like to protect her (and myself). What would you suggest?

Mrs. H.

Dear Mrs. H.,

While VRP has recently introduced L-lysine in 500 mg caps, I’ve never found it to be very effective in preventing herpes or shingles attacks. However BHT, in doses up to 2 grams daily, is very effective in aborting these attacks and preventing their recurrence (preventive doses can be as low as 250 mg daily).

In addition, Lithium Orotate seems to greatly reduce the pain and itching of post-herpetic neuralgia, which can linger for months and years after the lesions of shingles have resolved.

Shingles is usually due to reactivation of latent herpes virus from an old infection. The reactivation is usually due to immune suppression due to stress, fatigue, or aging. Consequently, another beneficial supplement to shorten the course of shingles is Thymic Protein A. Again, although the manufacturer recommends a dose of three envelopes daily, many people have found doses as low as one or two envelopes per week to be effective.

Ward Dean, MD

DHEA and Prostate Cancer

Dear Dr. Dean,

I have been taking **DHEA** for the past year and just noticed a warning for males with prostate problems. I had a radical prostatectomy as a result of prostate cancer (caught early). It has been two years since the surgery and my PSAs have been 0 in all of the semi-annual tests taken since (the last time being Dec. 2002). Should I have any concerns about taking **DHEA**?

Thank you, Mr. H.

Dear Mr. H.,

I was shocked when I read the warning on our **DHEA** labels several months ago as well. The label preceded me at VRP, and I had never previously bothered to read it. Forget about it. The label has now been changed. Please look at my article in the April 2002 issue of *Vitamin Research News*, "Is DHEA Contraindicated in Prostate Cancer and BPH?," The answer is, "no," but you might feel better after reading the article. Let me know if you have any questions after you've read it.

Ward Dean, MD

BioDIM and Hypothyroidism

Dear Dr. Dean,

I'm interested in VRP's **BioDIM** product, but I'm hypothyroid and have been told to avoid cruciferous vegetables. Would **BioDIM** be okay for me?

Mrs. A.

Dear Mrs. A.,

BioDIM is the purified extract from cruciferous vegetables. There is not enough of any anti-thyroid substance in **BioDIM** to cause any problems. I'd recommend consuming cruciferous vegetables anyway, as they have many beneficial effects. Any thyroid-blocking effects can be counteracted by increasing your intake of thyroid.

Ward Dean, MD

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Nutrition Review

Ginseng Improves Memory in Stroke Patients

Researchers in China have shown that the herb, ginseng, is effective for improving memory scores of stroke patients suffering from post-stroke dementia. Dementia, or memory loss, is frequently seen in the

elderly—particularly following a stroke—and is a growing problem in aging populations around the world. Ginseng has been used in China for thousands of years to treat age-related diseases, but proof of benefits following treatment for mild and moderate dementia in humans has not been reported previously.

Lead researcher, Dr Jinzhou Tian of the Beijing University of Chinese Medicine, reported the results of his study while addressing the 28th International Stroke Conference in February 2003. According to Dr. Tian, his team found that ginseng effectively increases the activity of acetylcholine and choline acetyltransferase (ChAT), two important neurotransmitters (brain chemicals involved in cognition and memory).

The researchers randomly treated 25 stroke patients suffering from mild to moderate vascular dementia with ginseng, three times daily. Participants took memory tests focusing on immediate and delayed story recall, delayed word recall, verbal learning, verbal recognition and visual recognition. These tests were given at the beginning of the study and again after 12 weeks. Overall, the researchers reported that those patients receiving the ginseng showed significant improvement in their average memory scores after only 12 weeks of supplementation.

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Glucosamine Relieves Knee and Osteoarthritis Pains

People suffering from knee pain caused by articular cartilage damage and/or osteoarthritis may find significant benefit from glucosamine supplements, according to a recent study.

In the 12-week study, researchers randomly divided subjects into two groups. One group of 24 subjects received 2,000 mg daily of glucosamine. Another group of 22 subjects received a placebo. During the course of the study, the investigators conducted four testing sessions where they noted changes in knee pain and function. The tests included a “duck walk” and a repeated, walking stair climb. They also relied on two questionnaires to determine glucosamine’s effect on knee injury and osteoarthritis symptoms.

After 12 weeks the researchers found that the glucosamine-treated group had an improved quality of life in regards to osteoarthritis symptoms and lower levels of knee pain compared to the placebo-treated subjects. On self-reported evaluations of knee pain, 88% (21 subjects) of the glucosamine group reported some degree of improvement compared to only 17% (3 subjects) in the placebo group.

According to the study authors, “These results suggest that glucosamine supplementation can provide some degree of pain relief and improved function in persons who experience regular knee pain, which may be caused by prior cartilage injury and/or osteoarthritis. The trends in the results also suggest that, at a dosage of 2,000 mg per day, the majority of improvements are present after eight weeks.”

Br J Sports Med. 2003 Feb;37(1):45-9.

Lactoferrin Reduces Viral Load in Hep-C Patients

Hepatitis C virus (HCV) is one of the most common causes of chronic hepatitis. Interferon is presently the only effective treatment for chronic hepatitis C (CH-C), though its effectiveness is limited. Lactoferrin, an iron-binding protein with several proven biological activities including anti-viral activity, has recently been reported to inhibit hepatitis C infection in cultured human hepatocytes.

Researchers in Japan conducted a trial designed to measure the effectiveness of different doses of lactoferrin on reducing hepatitis C (HCV) RNA levels in infected patients. Forty-five patients were treated with daily oral doses of lactoferrin in three dose ranges: 1.8, 3.6, and 7.2 grams per day.

At the conclusion of the eight-week study researchers determined that lactoferrin significantly decreased HCV RNA levels, with reductions of greater than 50 percent seen in four patients. They reported that lactoferrin was well tolerated and there were no side effects. They also found no significant relationship between the different doses of lactoferrin on serum HCV RNA levels—lactoferrin was equally effective at both low and high doses. All patients relapsed during the follow-up period after treatment with lactoferrin was halted.

In their conclusion the authors state, “the excellent tolerance and potential anti-chronic hepatitis C activity of lactoferrin shown in this trial suggest that further trials using a large number of patients are mandatory.”

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