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Food and Environmental Allergies: Controlling the Body's Burden

by Chris D. Meletis, ND

The Centers for Disease Control report that hay fever symptoms result in 14.1 million annual visits to primary care physicians.¹ Overt allergic disease affects 20 percent of the US populace with an impact on some 50 million Americans.²⁻⁴ Of those that suffer, 35 million are specifically afflicted with seasonal hay fever. If one was to add in to the statistics asthma and chronic obstructive pulmonary disease the numbers become even more staggering. Without question allergic disease is a serious health crisis and is currently ranked the 6th leading cause of chronic disease in the United States.²

Surprisingly, the allergic burden blamed for seasonal and year round allergies is

not limited to environmental exposures. Clinically food allergies have been identified as a leading contributor to allergy symptoms. Food allergies can cause numerous respiratory symptoms including: asthma, cough, nasal congestion, excess mucus production, hoarseness, postnasal drip, tonsillitis, sore throat, sneezing and stuffy nose.

Food allergens can be broken down into two categories: Immediate and Delayed. It is the delayed or hidden food allergens that erode away ones health, frequently going undetected since the response is not immediate but rather delayed up to 72 hours, long

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The Myths and Truths of Women's Hormones

by Sherrill Sellman, ND

During the menopausal years, it seems that women are as confused as ever about what is happening to their hormones. Unfortunately, much of what women have been taught about their bodies and especially hormonal changes at menopause is, in fact, incorrect. Unraveling the many myths, misinformation and, in some cases, lies about menopause is crucial for ensuring safe passage through this time of life.

Without a firm foundation of truthful information regarding the physiological changes that occur during menopause, it is difficult to make truly effective and safe choices. The belief that a woman's

physiology is innately flawed dates back 2600 years to the time of Hippocrates, the father of medicine, who asked, "What is Woman?" His answer, "Disease!"

This idea has persisted into modern times. In 1966, New York gynecologist Robert Wilson published the best-selling book, *Feminine Forever*. He reinforced the cultural myth that a menopausal woman "becomes the equivalent of a eunuch" because her ovaries shrivel up and die at this time.¹

He also proclaimed that menopause was an estrogen-deficiency disease and that

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Allergies

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after the offending food(s) were ingested. Patients experiencing delayed (IgG) food sensitivities will experience a worsening of their environmental allergens. Thus, identifying and controlling food sensitivities is essential.

As spring arrives plants and trees begin to bloom leading to over 31 million cases of sinusitis alone. With the slightest inclination many of these cases could be either totally avoided or managed conservatively. Instead of waiting in anticipation for another season of suffering, one should begin building the health of his or her respiratory system proactively by implementing some simple health principals. This discussion will explain how eliminating offending foods from the diet along with supplementation to augment the body's natural defenses—with nutrients like quercetin, bromelain and vitamin C as well as Digestive Enzymes and Lectin Lock™—will help support respiratory health.

Allergic Symptoms: A Barometer of the Body's Preparedness

By definition if allergic symptoms flare up at a specific time of year then they are likely caused by seasonal allergic rhinitis. The body manifests with allergic symptoms because the personal threshold of resistance has been overwhelmed.

Outdoor or indoor levels of pollen, spores and pollutants, when combined with daily environmental and food allergen burdens, become too great a challenge for the body to resist. Ideally one builds his or her body's defenses in a proactive fashion prior to the first signs and symptoms. Yet, if allergies have caught an individual off guard, it is imperative to take action. Though allergy symptoms vary from person to person, it is important to use specific symptoms as a personal barometer of the readiness and success of warding off the infamous biochemical allergic cascade. (Table 1)

Seasonal or perennial allergic rhinitis share a common symptom picture. The big difference is that in the case of perennial allergies identifying the cause of symptoms is often more difficult since there can be an overlap between current seasonal allergies and daily allergic burdens such as house dust mites, animal dander, chemical exposures, medicines or foods. Yet regardless of allergic symptoms' duration, supplementing the body's defenses is a must to control suffering. Among my favorite respiratory-support nutrients both for my own personal use and for my patients is a combination of quercetin, bromelain and vitamin C. Before discussing in detail the science behind the use of these supplements I will touch upon a common condition that can contribute to the exacerbation of allergic rhinitis and sinusitis—food allergies—as well as the ways we can use digestive enzymes and Lectin-blocking supplements to help our body cope with food sensitivities.

Regarding allergies, the goal is simple: lessen the body's burden and strengthen its ability to resist the allergic irritants.

Food + Environmental Allergens = Respiratory Distress

One of the easiest ways to lessen personal allergic burden is to recognize that food allergy/sensitivities play a large role in the amount of suffering a person experiences either with seasonal or perennial allergies. This is because it is the total burden on an individual's system that ultimately determines how readily the body releases histamine and inflammatory substances that lead to many of the miserable symptoms of allergic reactions. Most people are unaware of their food allergies because we have been led to believe that

Seasonal and Perennial Allergy Symptoms

- Sneezing (frequently and in rapid succession)
- Runny or itchy nose
- Stuffy or congested nose
- Watery, itchy eyes
- Scratchy throat
- Itchy ears
- Headache (particularly face and forehead due to sinus pressure)
- Disturbed sleep
- Inability to concentrate/Listlessness

Table 1.

food allergies are related only to asthma and hives—the classic “anaphylactic reactions.” Yet, delayed food allergies are also called hidden food allergies because they can contribute to digestive problems, body aches, headaches and symptoms typically not associated with classic allergy symptoms. The combined environmental and food allergen burden results in total susceptibility to succumbing to allergic symptoms.

“One of the easiest ways to lessen allergic burden is to recognize that food sensitivities play a large role in seasonal or perennial allergies.”

ELISA immunoassay testing for delayed food allergies helps identify delayed IgG immunoglobulin allergens. This technology is used worldwide and has now been applied to home test kits that can identify 96 different foods reactions ranging from dairy, wheat, corn, fish, vegetables, fruits, sugar cane, numerous nuts, eggs and other commonly consumed foods. A simple fingerstick done at home, much like that done by diabetics, makes gaining insight into ones own personal delayed food allergies both affordable and convenient. Once collected, the sample is sent from the home to a CLIA (nationally licensed) laboratory.

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 **Vitamin Research News**
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Clinical Cases Associating Food Allergies with Environmental Allergies

A 48-year-old woman presented with a 10-year history of cough and allergy symptoms. She was tested for food allergies and was positive for elevated antibodies to dairy, shrimp, corn, barley, oat, sesame, banana, grape, pear and rice. With this new gained knowledge she improved dramatically with complete remission of her symptoms.

A 40-year-old male with allergic shiners (dark circles under eyes) that had been on Allegra® for years to control year around sinus and throat discomfort was able to discontinue his prescription medication and become symptom free when he avoided his high and moderate food allergens that included dairy, banana, peanuts, baker's and brewer's yeast.

An 8-year-old boy with history of ear infections and sore throats was able to stop taking his maintenance dose of antibiotics, acid blocker, ear drops and antihistamine prescription. Allergies included wheat, peanuts, oranges and soy.

Table 2.

Within a couple of weeks, results are sent back directly to the patient's home. These results indicate low, moderate or high reactions to different foods.

Choosing the correct laboratory is critical for accurate and reproducible results. The lab that I use in my clinical practice, which offers this home testing option for delayed/hidden food allergies, has an international presence that includes Europe and Asia. This clinically powerful tool (see Table 2) can help an individual identify allergies to foods consumed daily that may otherwise go undetected since delayed food allergies can take upwards of 72 hours to manifest their full effect.

Food Allergies: Nutritional Support

After one takes a food allergy test to determine the foods that will cause the worst problems, there are several approaches to take to help the body cope. First, avoiding the foods we are allergic to will produce dramatic results. Second, to compensate for those times when we are exposed to our most common food allergens, we can supplement with Digestive Enzymes. Each of the five main digestive enzymes has a different role to play. Amylase digests starch. Protease breaks down the peptide bonds that join the amino acids in a protein, ensuring the amino acids are readily available to the body. The enzyme lipase splits apart emulsified fats. Lactase digests milk sugar, while cellulase helps break down plant and vegetable matter. These enzymes are secreted by the pancreas and are often referred to as pancreatic enzymes. Deficiencies of these enzymes can wreak havoc on the digestive tract, causing bloating, flatulence, and gastrointestinal discomfort. Without proper supplies of these enzymes, the body struggles to digest the high-fat or high-starch

meals. Pancreatic enzyme deficiencies also are associated with Pancreatitis, Crohn's disease and cystic fibrosis. Surprisingly, consuming a high-fiber diet may also cause a decrease in digestive enzyme levels.

Lectin-blocking supplements can play an equally supportive role in any individual concerned about food allergies. Lectins are proteins commonly found in foods such as fruits, vegetables, and seafood, but especially grains, beans and seeds. They occur in about 30 percent of the American diet and are not degraded by stomach acid or proteolytic enzymes, making them virtually resistant to digestion. Lectins found in wheat are capable of activating NF kappa beta proteins which, when up-regulated, are involved in almost every acute and chronic inflammatory disorder including neurodegenerative disease, inflammatory bowel disease, infectious and autoimmune diseases. An abundance of literature indicates that lectins can initiate allergic reactions in the gut.⁵⁻⁶ Lectins found in wheat also interfere with protein digestion and increase gut permeability.⁷⁻⁸ Peanut lectin, kidney bean and soybean lectins are other examples of lectins that have influences on bodily tissues. Ironically, when individuals consume less processed grain foods and more whole wheat products, which are more nutritious in many respects, they are actually consuming more lectins.

Runny Noses and Heart Disease

For individuals willing to endure allergy symptoms, the consequence within the body doesn't end with a runny nose. Allergies trigger inflammatory responses that can elevate C-reactive protein (CRP), which can accelerate cardiovascular system damage. By controlling allergic

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The President's Desk

The Death of DHEA?

Once again, we must work together to deflect a misinformed and serious legislative attack against a natural and safe hormone—DHEA. In blatant disregard for the peer reviewed medical literature, Senator Chuck Grassley of Iowa has introduced a bill that would add dehydroepiandrosterone (DHEA) to the list of anabolic steroids classified as controlled substances under the Anabolic Steroid Control Act.

Grassley's campaign to ban DHEA relies on fictionalized "facts" that have no support in the medical literature. Low DHEA levels that occur with aging have been associated with an increased risk of heart disease. Yet, Grassley, without any significant scientific support, claims that DHEA is associated with an increased risk of heart disease. Other studies have found that DHEA supplementation improves the function of the arterial lining and increases insulin sensitivity in men. In a number of trials, DHEA has been found to reduce levels of abdominal and visceral fat in elderly men and women, plus it improves both perimenopausal and menopausal symptoms. Even studies that have found no effect of DHEA on the outcome parameters have noted that supplementation with DHEA is "well-tolerated and free of serious side effects." Yet, Senator Grassley claims that DHEA is "a dangerous substance."

The danger here is not a natural hormone proved safe in the medical literature, but rather the senator's close-minded approach. In introducing S.762 together with Senators John McCain of Arizona and Dick Durbin of Illinois, Senator Grassley is limiting the health freedoms of and harming millions of supplement consumers who have noted an improved quality of life after taking DHEA. A similar bill will be introduced into the House of Representatives (HR 1249), further threatening our health freedom.

I urge you to fax or email your congressional representatives today to advise them to vote against these two misguided bills. Ask them to vote for science that shows that DHEA is safe rather than to cave in to anti-steroid paranoia that ignores the facts.



Robert Watson
President/CEO

Allergies

Continued from page 3

symptoms such as sinusitis, rhinitis, pharyngitis, bronchitis or conjunctivitis individuals are simultaneously controlling inflammation—hence the term “-itis,” which simply means inflamed. C-Reactive Protein is a measure of the total amount of inflammation within the body and can be measured with a simple and affordable blood test. The higher the CRP, the higher the heart disease risk, even with a low cholesterol reading.⁹ Ensuring we maintain a low CRP level is part of a holistic approach to allergy support, helping fuel individual potential for maximal wellness.

Winning the Battle Against Seasonal Allergies

Moist mucous membranes are resistant and resilient to allergic irritation and possible secondary infection. Staying well hydrated during allergy season—and year round—is important since a healthy individual is comprised of about 70 percent water content.

The smartest approach to battling allergens is avoidance, literally trying to dodge as many pollen molecules as possible. Table 3 outlines ways to minimize pollen exposure.

Anyone suffering from allergy symptoms already knows that this condition can reduce “quality of life” by lessening enjoyment of leisure activities and decreasing the ability to perform tasks at home and work. Researchers have measured substantial impairment in verbal learning, decision making and psychomotor speed in those suffering from allergies.¹⁰⁻¹¹

Recommendations for my patients that

Know the Timing of Allergen Patterns

- Pollen counts usually peak later in northern states than those in the South.
- Mold spores are present in the air between May and October.
- Tree pollen season extends from February to late-May.
- Grass pollen season runs from May to September, with a peak in midsummer (June/July).
- Grass pollen symptoms are closely correlated with local pollen levels.
- Sunny days are associated with higher pollen counts.

Table 3.

are serious about battling allergies include minimizing allergen exposure and supporting the body in controlling the allergic response. The goal is simple—minimize the total burden of allergic exposure by:

- Checking the pollen count (with local media)
- Staying indoors when it is high such as early evening when pollen counts peak
- Sleeping with windows closed
- Driving with vehicle car windows closed
- Wearing a mask when mowing the lawn or better yet hire out the job
- Protecting the eyes with glasses/sun glasses to stop pollen entering the eyes
- Washing hair prior to bed (to rinse out allergens collected throughout the day)
- Staying well hydrated: moist mucous membranes are more resistant to irritation
- Testing for food allergies
- Minimizing mold and mildew in house
- Using Air filters/HEPA for bedroom
- Cleaning central ventilation system in home or office
- Remembering indoor/outdoor pets carry pollen and allergens on their fur
- Cleaning carpets regularly with a HEPA vacuum

Nutritional Support for Allergies

The above recommendations may look simple enough, yet total avoidance is neither practical nor feasible. Therefore proactively strengthening defenses with strategic supplementation can help an individual cope with this frustrating condition. Consequently, when pollen, dust and other allergens begin to fly the body will have been fortified and prepared for the impending barrage.

The foundation of natural medicine is best captured by the doctrine stated 400 BC by Hippocrates, the father of western medicine, “May your food be your medicine and your medicine be your food.” Indeed, when supplementing with plant based medicinals like quercetin, bromelain and vitamin C, one actually nourishes the body rather than merely treating allergic symptoms, leaving the body stronger and healthier overall.

Quercetin

My strong recommendation for my patients with allergies is quercetin in conjunction with bromelain. Quercetin is a

naturally occurring polyphenolic plant compound. Quercetin actually helps prevent histamine release from mast cells (immune cells); this is in sharp contrast to prescription and over-the-counter antihistamine drugs that merely seek an “antidote” to histamine’s effects. Quercetin supports the body by increasing its resistance to allergic response.

Mast cells play an important role within the body relative to allergies, immunity and inflammation. As with all aspects of health

“Quercetin, a naturally occurring polyphenolic plant compound, helps prevent histamine release from mast cells.”

one can have too much of a good thing. For instance, mast cells play a role in creating the momentary watering of an eye to flush out a speck of dirt, yet in an undernourished or overwhelmed body excess mast cell stimulation leads to unnecessary and preventable misery.

Quercetin serves as a potent inhibitor of histamine and cytokine release from mast cells and basophils. Recent research has concluded that quercetin is suitable for the support of allergic and inflammatory diseases.¹² When compared to one potent mast cell stabilizing drug, quercetin had twice the effect on nasal mast cell scrapings when given at the same concentration as the drug.¹³

Quercetin embodies the concept of holistic care. While combating the allergic cascade it simultaneously nourishes and helps protect against chronic diseases. In a progressive study, it was clearly demonstrated that those with higher quercetin intakes had lower mortality from ischemic heart disease, lower lung cancer and asthma rates and a trend toward a reduction in risk of type 2 diabetes. The researchers concluded, “The risk of some chronic diseases may be lower at higher dietary flavonoid intakes.”¹⁴

Bromelain

Bromelain, a powerful anti-inflammatory, is a glycoprotein with proteolytic enzyme properties. Derived from the stem of the pineapple plant, it confers both anti-inflammatory and mucolytic properties thus decreasing congestion and irritation of the mucous membranes bombarded during allergy season.¹⁵ The mucolytic properties are particularly important, since the addition of excess mucous creates a superb breeding ground for bacteria. All too frequently a secondary opportunistic infection tries to move into the sinuses or bronchial airway thanks in large part to uncontrolled inflammation and copious quantities of mucous. The result is frequently one of the inflammatory “itis” conditions: sinusitis, conjunctivitis, rhinitis, pharyngitis and potential bronchitis. Bromelain’s ability to reduce levels of plasma kininogen down regulates the production of kinin, a group of pain-inducing polypeptides. It also activates plasmin, the mechanism by which bromelain reduces edematous swelling of airway tissue, such as nasal congestion, and helps quench the pervasive inflammation.¹⁶⁻¹⁷

A study evaluated bromelain’s use in 116 children under the age of 11 years diagnosed with acute sinusitis. Patients were treated with either bromelain; bromelain combined with standard therapies; or with standard therapies alone. Symptom duration determined the success of the various therapies. The shortest period of symptoms were observed in patients treated with bromelain as an isolated therapy.

According to the researchers, “Patients of the bromelain monotherapy group showed a statistically significant faster recovery from symptoms compared to the other treatment groups.”¹⁷⁻¹⁸

Due to its efficacy after oral administration, its safety and lack of undesired side effects, bromelain has become an internationally revered nutraceutical that helps ameliorate sinusitis and bronchitis. It has also been shown to lessen blood stickiness, angina pectoris, post-surgical traumas, thrombophlebitis, pyelonephritis and can actually enhance absorption of drugs, particularly various antibiotics.¹⁹

Vitamin C

Lower vitamin C concentrations were observed among people with current or

former asthma than among people who never had asthma.²⁰ During infections and stress, vitamin C concentrations in the plasma and leukocytes (white blood cells) rapidly decline. Vitamin C supplementation improves immune function such as antimicrobial and natural killer cell activities, lymphocyte proliferation, chemotaxis, and delayed-type hypersensitivity. Furthermore, vitamin C protects cellular integrity against reactive oxygen species (free radicals) generated during inflammatory responses like those that occur during allergic reactivity and infections.²¹

Further emphasizing the importance of vitamin C and other antioxidants was a study that points to asthma diagnosis as it relates to antioxidant status. Lower levels of serum vitamin C, alpha-carotene, beta-carotene, and beta-cryptoxanthin were noted in those with asthma. The authors concluded that low vitamin C and alpha-carotene intakes are associated with asthma risk.²²⁻²³

The authors of another study also conclude that vitamin C plays an essential role in defending against oxidant attack in the airways. In fact they go as far to suggest that the results point to vitamin C deficiency as either a possible underlying factor in the pathophysiology of asthma or as a response to asthmatic airways inflammation.²⁴ Furthermore, vitamin C levels have been found to be lower in children with chronic sinusitis.²⁵ This indicates that allergic rhinitis or asthma—both conditions characterized by airway passage inflammation—require sufficient quenching and control with antioxidants such as vitamin C, protection with nutrients such as quercetin and direct anti-inflammatory control with proteolytics such as bromelain.

Summary

The scientific research and my clinical experience both lead to the same conclusion: the use of quercetin, bromelain and vitamin C serve as important supplements when it comes to helping control allergic symptoms, sinusitis and asthma. Identifying hidden food allergies also helps take an unnecessary burden from the body. When combined with supplementation and an active allergen surveillance program, tracking food allergies serves as the cornerstone for those serious about allergy symptom management and whole body health.

References

1. United States Centers for Disease Control and Prevention. National Center for Health Statistics. National Ambulatory Medical Care Survey; 2002 Summary, table 13.
2. American Academy of Allergy, Asthma and Immunology. Task Force on Allergic Disorders. Executive Summary Report. 1998.
3. American Academy of Allergy, Asthma and Immunology. The Allergy Report: Science Based Findings on the Diagnosis and Treatment of Allergic Disorders, 1996-2001.
4. Nathan RA, Meltzer EO, Selner JC, Storms W. Prevalence of Allergic Rhinitis in the United States. *Journal of Allergy and Clinical Immunology* (1997) 99:S808-14.
5. Watzl B, Neudecker C, Hansch GM, Rechkemmer G, Pool-Zobel BL. Dietary wheat germ agglutinin modulates ovalbumin-induced immune responses in Brown Norway rats. *Br J Nutr*. 2001 Apr;85(4):483-90.
6. *Eur J Immunology*. 1999. Mar;29(3):918-27.
7. Falth-Magnusson K, et al. Elevated levels of serum antibodies to the lectin wheat germ agglutinin in celiac children lend support to the gluten-lectin theory of celiac disease. *Pediatr Allergy Immunol*. May 1995; 6(2): 98-102.
8. Hollander D, Vadheim CM, Brettholz E, Pertersen GM, Delahunty T, Rotter JI. Increased intestinal permeability in patients with Crohn’s disease and their relatives. A possible etiologic factor. *Ann Intern Med*, December 1986; 105(6):883-85.
9. Ridker PM, Cannon CP, Morrow D, Rifai N, Rose LM, McCabe CH, Pfeffer MA, Braunwald E. C-Reactive Protein Levels and Outcomes after Statin Therapy (2005) 352:20-28.
10. Marshall PS. Effects of allergy season on mood and cognitive function. *Ann Allergy* (1993) 71:251-258.
11. Metzler EO, Nathan RA, Seiner JC, Storms W. Quality of life and rhinitic symptoms: results of a nationwide survey with SF-36 and RQLQ questionnaires. *J Allergy Clin Immunol* (1997);99:815-19.
12. Kempuraj D, Madhappan B, Christodoulou S, Boucher W, Cao J, Papadopoulou N, Cetrulo CL, Theoharides TC. Flavonols inhibit proinflammatory mediator release, intracellular calcium ion levels and protein kinase C theta phosphorylation in human mast cells. *Br J Pharmacol*. 2005 Aug;145(7):934-44.
13. Otsuka H, Inaba M, Fujikura T, Kunitomo M. Histochemical and functional characteristics of metachromatic cells in the nasal epithelium in allergic rhinitis: studies of nasal scraping and their dispersed cells. *J Allergy Clin Immunol* 1995; 96:528-36.
14. Knekt P, Kumpulainen J, Jarvinen R, Rissanen H, Heliovaara M, Reunanen A, Hakulinen T, Aromaa A. Flavonoid intake and risk of chronic diseases. *Am J Clin Nutr*. 2002 Sep;76(3):560-8.
15. Rimoldi R, Ginesu F, Giura R. The use of bromelain in pneumological therapy. *Drugs Exp Clin Res* (1978) 4:55-66.
16. Taussig S. The mechanism of the physiological action of bromelain. *Med Hypothesis* (1980) 6:99-104.
17. Kelly GS. Bromelain: a literature review and discussion of its therapeutic applications. *Altern Med Rev*. 1996; 1:243-57.
18. Braun JM, Schneider B, Beuth HJ. Therapeutic use, efficiency and safety of the proteolytic pineapple enzyme Bromelain-POS in children with acute sinusitis in Germany. *In Vivo*. 2005 Mar-Apr;19(2):417-21.
19. Maurer HR. Bromelain: biochemistry, pharmacology and medical use. *Cell Mol Life Sci*. 2001 Aug;58(9):1234-45.
20. Ford ES, Mannino DM, Redd SC. Serum antioxidant concentrations among U.S. adults with self-reported asthma. *J Asthma*. 2004 Apr;41(2):179-87.
21. Wintergerst ES, Maggini S, Hornig DH. Immune-enhancing role of vitamin C and zinc and effect on clinical conditions. *Ann Nutr Metab*. 2006;50(2):85-94. Epub 2005 Dec 21.
22. Harik-Khan RI, Muller DC, Wise RA. Serum vitamin levels and the risk of asthma in children. *Am J Epidemiol*. 2004 Feb 19;159(4):351-7.
23. Rubin RN, Navon L, Cassano PA. Relationship of serum antioxidants to asthma prevalence in youth. *Am J Respir Crit Care Med*. 2004 Feb 1;169(3):393-8.
24. Kongerud J, Crissman K, Hatch G, Alexis N. Ascorbic acid is decreased in induced sputum of mild asthmatics. *Inhal Toxicol*. 2003 Feb;15(2):101-9.
25. Unal M, Tamer L, Pata YS, Kilic S, Degirmenci U, Akbas Y, Gorur K, Atik U. Serum levels of antioxidant vitamins, copper, zinc and magnesium in children with chronic rhinosinusitis. *J Trace Elem Med Biol*. 2004;18(2):189-92.

Women's Hormones

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estrogen was the long sought after youth pill. He wrote, "Many physicians simply refuse to recognize menopause for what it is—a serious, painful and often crippling disease."

He won women over with scientific-sounding promises of beauty and good sex, even though the FDA banned Wilson from certain research for making unsubstantiated claims.

Dr. Wilson successfully convinced doctors and women that estrogen was the salvation for the "horrors of this living decay." He wrote, "The myth that estrogen is a causative factor in cancer has been proven entirely false. On the contrary, indications are that estrogen acts as a cancer preventive."²

“The perimenopausal ovary is more active than it has been since adolescence.”

Dr. Wilson is credited with enshrining the belief that estrogen efficiency was the hormonal profile of all menopausal women. He also convinced the medical fraternity that estrogen replacement was the obvious solution. This paved the way for making menopause a medical condition that required treatment with estrogen and synthetic progestins (Hormone Replacement Therapy).

Unfortunately, Dr. Robert Wilson and his unfounded theories were proven to be entirely wrong. He was also very wrong about the non-carcinogenic effects of estrogen. This was a tragic medical mistake that had drastic consequences for millions of women.

In 1975, the *New England Journal of Medicine* published two studies documenting a strong association between cancer of the lining of the uterus and estrogen therapy.³⁻⁴ By 2002, The Women's Health Study showed that women who took

the combination of estrogen and progestin had increased their risk for breast cancer, stroke, heart attack, and blood clots.⁴ The National Institute of Environmental Health Sciences listed all steroidal estrogens and progestins as known human carcinogens.⁵

As a footnote to history, Wilson's research was eventually declared flawed by the FDA and he was discredited as a researcher. It was also discovered that Dr. Wilson's book and lecture tour were financed by a company that manufactured estrogen.

The Failing Ovary Myth

Research has discovered that the perimenopausal ovary (the period 5-10 years before cessation of menstrual cycles) is more active than it has been since adolescence.

One leading researcher, endocrinologist Dr. Jerilynn Prior, has found that "the perimenopause ovary produces erratic and excess levels of estrogen, with unpredictable moods, heavy flow, hot flashes and mucous symptoms that appear suddenly and unexpectedly."⁶ The many symptoms that women experience during the perimenopause years, such as weight gain, irrational hunger, increased migraines, heavy periods, worsening endometriosis, breast swelling (with pain or lumps), new or growing fibroids, new or increasing PMS, pelvic pain and uterine cramps are caused by high levels of estrogen.

Dr. Prior has found that the average estrogen levels in perimenopausal women are higher than in younger women. The older women not only had higher levels of estrogen but also had lower levels of progesterone.⁷

It's not only perimenopausal ovaries that remain active; it's also menopausal ovaries. According to the research of Dr. Celso Ramon Garcia, M.D., after menopause the ovaries continue to function working in conjunction with other body sites such as the adrenal glands, skin, muscle, brain, pineal gland, hair follicles and body fat to produce hormones.

It is now known that postmenopausal ovaries maintain a steroid capability for several decades after menses has ceased. As Prior once wrote, "Older ovaries, replete with stroma material, are now understood to actively produce androstenedione – the hormone that, in the menopausal woman, is converted to estrone, in the fat deposits

of the body. This pathway can be significant in preventing osteoporosis."⁸

Far from shriveling, the ovaries of menopausal women continue to secrete androgens, often late into the menopause, which support a woman's well being.⁹

The Estrogen Deficiency Myth

Although it has been an accepted belief that menopause is a time of declining estrogen levels, the facts that are becoming known reveal that many women actually have an excess of estrogen. According to Dr. John R. Lee in his book *What Your Doctor May Not Tell You About Menopause: the Breakthrough Book on Natural Progesterone* (Warner Books, 1996), estrogen dominance is a major factor contributing to women's hormonal imbalances.

"Estrogen dominance syndrome" is a term that describes a condition of an imbalance between estrogen and progesterone," Dr. Lee wrote. The delicate balance between these two hormones is skewed in estrogen's favor. Stress, nutritional deficiencies, processed foods, environmental estrogen mimics, i.e. substances found in pesticides, herbicides and plastics, are the likely contributing factors to the creation of estrogen excess."

Estrogen Dominance describes a condition where a woman can have deficient, normal or excessive estrogen, but has little or no progesterone to balance its effects in the body. Even a woman with low estrogen levels can have estrogen dominance symptoms if she does not have any progesterone.¹⁰

“Many menopausal women actually have an excess of estrogen.”

Of all women experiencing symptoms of estrogen dominance, some with low levels of progesterone may require progesterone supplementation with natural progesterone cream, whereas others with normal progesterone need to make changes that can

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JAMA's Antioxidant Study: An In-Depth Examination of a Flawed Report

by VRP Staff

There's an old saying in statistics: if you torture the data long enough, statisticians can "prove" almost anything. This means that if you exclude certain studies, lump differing kinds of studies together into the same data pool, set up your own criteria as to what is biased and what is not, and otherwise bend the rules, you can produce a study that says whatever you'd like. And that is exactly what the researchers did in an "anti-antioxidant" study published in February in the *Journal of the American Medical Association*.¹

This paper, a meta-analysis produced by a team of Danish, Italian and Serbian researchers, was designed to assess the effects of the antioxidant supplements vitamin A, beta-carotene, vitamin C, vitamin E and selenium on death rates in healthy people and people suffering from a disease or condition. The researchers began with 815 studies, and after excluding 747 of them came to a startling conclusion that contradicted a wealth of existing scientific evidence: not only were these antioxidants ineffective in reducing mortality, treating people with beta carotene, vitamin A and vitamin E might actually *increase* mortality!

The media quickly printed alarming headlines that claimed that antioxidants were harmful, without stopping to analyze the study or ask experts in the field about the validity of the results. Yet a careful review of this meta-analysis reveals that it is full of flaws and draws an unwarranted, even misleading, conclusion that's not based on a full analysis of the facts.

Some of the major problems with the *JAMA* study:

- The study is a meta-analysis, which involves combining the data from existing studies to create a single, large "pool" of data that is then used for statistical analysis. But a meta-analysis is only as good as the studies used to construct it. The stunningly obvious problem with the *JAMA* study is the exclusion of a massive amount of

positive research. Out of 815 studies, 747 studies (a full 91 percent) were excluded, leaving only 68 studies for the statistical analysis. Some 400 studies were rejected because *none* of the participants in these studies died. But if you eliminate almost half of the studies specifically because there was no mortality, it is unfair to use the small number of the remaining studies to "prove" that antioxidants are deadly.

- The clinical trials used in the study were too diverse. They involved several different synthetic antioxidants, widely varying dosages, different durations of use and different types of volunteers. For example, one of the studies looked at the effects of 200,000 IU vitamin A over the course of a single day—a huge dose used for a ridiculously short amount of time. Yet other studies used moderate doses of antioxidants over a period of years. In addition, many of the studies examined the effects of antioxidants such as lutein and zinc that were not even one of the five nutrients that the meta-analysis was focusing on. Using the data from this jumble of studies to create some sort of conclusion is like using 20 different brands of bricks to build a house which later falls down, then claiming the failure was entirely due to Brand X.
- Some of the studies included in the meta-analysis were treatment trials using synthetic antioxidants, designed to test whether taking an antioxidant might cure heart disease or another serious illness. Studies based on such a simplistic premise are bound to fail. Yet their results were included, giving the false impression of a strong correlation between antioxidants and risk of death. Professor Balz Frei, Director of the Linus Pauling Institute at Oregon State University, summed it up thusly: "All the new study really demonstrates is a bias toward identifying studies or research that show harm caused by antioxidants, and

selective removal of research that shows benefits."

What the Study Didn't Say About Antioxidants

A large body of scientific evidence has found that taking antioxidant supplements can indeed reduce the risk of serious disease. One of the classic antioxidant studies, published in the *New England Journal of Medicine* in 1993, tracked for eight years more than 87,000 female nurses, ages 34 to 59, all of whom were free of diagnosed cancer and heart disease at the beginning of the study.² During the course of the study there were 437 nonfatal heart attacks and 115 deaths due to coronary disease. Upon analyzing the nutrient consumption of the volunteers during the eight-year period, the researchers found that the risk of suffering a heart attack fell by about a one-third in those who consumed the highest amounts of vitamin E, compared to those who consumed the lowest. A companion study compared the amount of vitamin E consumption by 39,910 American male health professionals and found that those who took at least 100 IU per day for at least two years had about a 33 percent lower risk of developing coronary disease than those who did not take vitamin E supplements.³

During the 14 years since the publication of these studies, many other researchers have found strong associations between consumption of antioxidants and a lower risk of heart disease, cancer and other diseases, as well as overall mortality. And just the presence of elevated levels of antioxidants in the blood appears to reduce the risk of suffering from serious ailments. For example:

- In a Japanese study involving 3,016 adults, high serum levels of antioxidant carotenoids (alpha-carotene, beta-carotene and lycopene) were "significantly associated with low hazard ratios for cardiovascular disease mortality."⁴

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CUSTOMERS' CORNER

by Ward Dean, MD
Medical Director

Osteoporosis Despite Exercise

Dear Dr. Dean,

I've been taking your products for years, and have faith in your company. I'm a 58-year-old female recently diagnosed with osteoporosis. I was shocked, as I get plenty of exercise walking dogs at a shelter daily and walking my dog several times a day, and I just began using the elliptical trainer for more aerobic exercise. I've done some form of exercise all my life, including running, swimming, hiking, etc. I don't smoke or drink alcohol. I feel good, and have a lot of energy. I do, however, drink coffee and eat refined sugar, which I should probably wean myself off of.

I take *Optimum Silver*, *HepatoGen™* for my hepatitis C (which has kept my liver enzymes in the high normal range, as I am doing nothing else for the virus), and recently I started taking your product, *Primary Greens*. I'm not taking HRT or any minerals at this time.

I will have an appointment with my doctor next week, and I have a feeling he will tell me to begin taking *Fosamax®* (alendronate) and 1,500 mg. of *Calcium*. I prefer to take your products, so would like to know which calcium supplement you recommend. Also, what do you think of taking *Fosamax*? Is there a natural alternative and do you know of any reason I should not take *Fosamax*?

I value your opinion, and look forward to hearing from you before I begin this new regimen in light of my recent diagnosis.

By the way, it was discovered with a bone density test to get a post-menopause baseline. The numbers were both -2.51.

I get exposure to the sun (*Vitamin D*) an hour per day when I'm walking dogs...this should help the absorption of the calcium that I'll begin taking.

Thanks for your help.

Ms. G.

Dear Ms. G.,

For osteoporosis, I recommend either *Essential Minerals* or *Advanced Essential Minerals*. These were both designed based on Dr. Alan Gaby's recommendations in his book, *Reversing Osteoporosis*. In addition, you might consider switching from sugar to *Xylitol*. By itself, *Xylitol* has been shown to reverse bone loss in animal studies. Another substance that has increased bone density is *Strontium*. Please see my articles on *Strontium* and *Xylitol* on our website, which document their bone strengthening effects.

You might also want to consider *Osteoflavone Complex*, our premiere bone-supporting formula.

Finally, I suggest progesterone replacement, with *HerBalance™ Cream*.

In regards to *Fosamax*, I would suggest reading its insert to learn about the side effects.

As an exercise regimen, I recommend resistance exercise with light weights. Strength training has been shown to be far more effective than aerobic exercise for increasing bone density.

Hope these suggestions help.

Ward Dean, M.D.

LDL Cholesterol and Antioxidants

Dear Dr. Dean,

I have read many articles regarding the ability of *Vitamin E* and *Vitamin C* to possibly reduce the oxidation of LDL cholesterol. If this does in fact take place, does the LDL number actually decrease? Can you lower LDL cholesterol this way?

Ms. E.

Dear Ms. E.,

Although there are studies suggesting that *Vitamin E* and *Vitamin C* may reduce oxidation of LDL cholesterol, I have not seen significant improvements in the lipid profile with these nutrients in clinical practice.

I believe that plain old *Niacin* is the best lipid-lowering substance available. For individuals who can't tolerate the *Niacin* flush, even after gradually increasing the *Niacin*

dosage, *LipiControl®* is an option, as it contains a non-flush form of *Niacin* along with other lipid-lowering ingredients.

Please see several of my articles on the lipid-lowering benefits of *Niacin* on our website.

Ward Dean, M.D.

Muscular Dystrophy

Dear Dr. Dean,

I am a 42-year-old female with recently diagnosed FSH muscular dystrophy. Currently, I take *DMAE powder* (1/4 tsp daily), *Magnesium* (450 mg. daily), *DHEA* (25 mg. daily), along with other supplements. What would you recommend for this condition? Is there any supplementation that could help with preservation of muscle mass? I have read about the use of *Creatine* and *Coenzyme Q10*, although I have not started with either of these.

Thank You,
Ms. G.

Dear Ms. G.,

I don't know of any nutritional substances that can definitely work with your condition—but I agree with your current regimen, especially the *Magnesium*.

I'd suggest increasing the *Magnesium* to bowel tolerance (you may already be there) or just below that level. *Magnesium* is a natural smooth muscle relaxer, and may help with spasticity.

Creatine, as you suggested, is important for maintaining muscle mass and energy. As you may know, we recently reported on a review of the medical literature that indicates that the amino acid *Creatine* may increase muscle strength in muscular dystrophy patients.

CoQ10 is a good idea, also. In fact, I suggest a combination of *Mito-Boost® I* and *II*, along with extra *CoQ10*. Muscular dystrophy likely has a mitochondrial component that may be helped significantly by *Mito-Boost I* and *II*, along with *CoQ10*. (*Creatine* is a key component of *Mito-Boost I*).

Hope these suggestions help.

Ward Dean, M.D.

Brain Damage in 4-Year-Old

Dear Dr. Dean,

My granddaughter is four and was born with part of her brain damaged. She learns slow, can't talk, and can't run. Her neurologist gave her some medicine that was making her fall and not function properly so her parents threw it in the garbage. She's taking bioactive homeopathic vax and Neuroplex® 5850. Please can you help? Thanks much.

Ms. P.

Dear Ms. P.,

Without knowing more about the specific cause of your granddaughter's problem, nor the medication that they prescribed for her, it's difficult to make a specific recommendation.

However, a safe, general recommendation is for her to take *DHA* (docosahexaenoic acid), which is essential for proper development of the brain and eyes. There are no adverse effects, so she can certainly add *DHA* to her regimen.

Ward Dean, M.D.

Weight Lifting Supplements

Dear Dr. Dean,

Are whole wheat bread and fruit smoothies (made from frozen fruit mixed in a blender with water) unhealthy because of their glucose/insulin effects? What supplements taken just before/ during weight lifting would be helpful for gaining muscle and making most of the work out?

Mr. K.

Dear Mr. K.,

Whole wheat bread and fruit smoothies are not "unhealthy," if not overdone—and are certainly less unhealthy than a lot of junk food out there. But as you suggested, there is a lot of sugar in them, and they will cause your insulin to spike.

I don't think there is any "magic" supplement to take just before weight lifting to maximize muscle gain. However, daily consumption of a number of nutrients may help in this regard. I suggest *Amino EDGE*, *Smart Protein™*, additional *L-Glutamine*, and *Creatine*. Another good option is the formula *Pro-Formance™*, designed by renowned nutritional researchers and authors, Durk Pearson and Sandy Shaw.

Ward Dean, M.D.

HepatoGen™ and Bile

Dear Dr. Dean,

I have cut down on fats to reduce production of bile. Why does *HepatoGen™* contain milk thistle, artichoke and dandelion, which increase the production of bile?

Mr. N.

Dear Mr. N.,

Bile acids are produced by the gall bladder, to aid in the digestion of fats. Substances in *HepatoGen* increase the production of bile acids in order to enhance the digestion of fats.

Those who have impaired bile acid production have impaired ability to digest fats.

Ward Dean, M.D.

Fatigue

Dear Dr. Dean,

I am 34 years old. In the past couple years I have had an increasing problem with fatigue. I used to work out regularly, but for the past couple years I have not been able to stay consistent. It has now been a year since I have worked out and I can notice the difference in my performance at work. I am a firefighter and need to stay in shape for my job, but I seem to feel run down all the time.

I started taking *Forskolin* and my weight has stayed consistent. My blood test came back normal and my blood pressure is good. I have also had a problem with sinus infections this year and the antibiotics make me feel even more tired. Is there anything you can recommend?

Mr. L.

Mr. L.,

Fatigue is the most common reason for people to visit their physicians. Since you are a firefighter, and probably have reasonably good health insurance, and are required to undergo periodic physical examinations, I assume you are in reasonably good health, and are not suffering from an easily diagnosable condition that may be contributing to your fatigue.

A commonly underdiagnosed cause of fatigue and many other symptoms, including reduced resistance to other illnesses (possibly including sinus infections) is sub-clinical hypothyroidism. Please see my article on

hypothyroidism, Neuroendocrine Theory of Aging, Part IIIb The Energy Homeostat (Thyroid Complex), on our website.

If you seem to fit the hypothyroid picture, consider thyroid hormone replacement therapy, or iodine replacement therapy (*Iodora®*).

Chronic stress is another major cause of fatigue, for which my first recommendation is *AdaptaPhase® I*.

Vitamin B12 injections once every week or so (if you can talk your physician into prescribing them) may help. Alternatively, consider *Methylcobalamin (Vitamin B12)* sublingual drops (one or more dropperfuls per day). Many people are very responsive to the energizing effects of *Vitamin B12*.

Other energizing formulas to consider include *Mito-Boost® I* and *II*, or *Optimum Energy™* (a formula designed to increase the body's production of the energizing neurotransmitter, noradrenaline).

Hope these suggestions help.

Ward Dean, M.D.

Ringin in the Ears

Dear Dr. Dean,

My husband has ringin in his ears and it's driving him crazy—any suggestions?

Thanks,
Mr. F.

Dear Mr. F.,

I've found that the best remedy for tinnitus/vestibular problems (ringin in the ears) is *Vinpocetine*, about 40 mg per day.

Ward Dean, M.D.

Dear VRP,

Thank you for introducing *Lectin Lock™*. I've tried many products for reflux and arthritic pains, but I must say that *Lectin Lock* has brought me the most relief of any product I've ever tried.

Thank you for all you do to help others through natural products. Your hard work is appreciated.

God bless you,
Ms. P.

Blood Sugar Control: The Third Component to Healthy Aging

by Chris D. Meletis, ND

In the January newsletter article, *Five Critical Components to Healthy Aging*, I touched upon the five most critical ways individuals can stay healthy throughout their lives. In February, I began a five-part series to address each of these components in more detail and have already addressed the first two components, cardiovascular and bone and joint health. This month, I will discuss blood sugar, an issue of the utmost importance to not only those at risk of diabetes but also anyone who wants to enhance his or her weight loss efforts, eliminate fatigue and increase energy.

In the initial installment of *Five Components to Healthy Aging*, I touched briefly upon the basics of blood sugar control and mentioned some botanicals and nutrients that can be used to stabilize this important aspect of our health. This topic is such a crucial one to healthy aging, however, that I wanted to expand that initial discussion.

In this article, I will address blood sugar control's important role in weight management efforts, its importance in any natural strategy to increase energy, and the destructive role that stress plays in disrupting glycemic balance. I will also discuss additional nutrients and botanicals and lifestyle factors that can help restore glycemic balance.

Far-Reaching Implications

Insulin resistance is one of the most widespread health problems of our time and often is associated with seemingly unrelated diseases such as Alzheimer's, bipolar disorder, cardiovascular health, rheumatoid arthritis, certain forms of cancer and even the skin disorder known as lichen planus.¹⁻⁵ Most notably, insulin resistance is associated with a cluster of symptoms that comprise what's known as The Metabolic Syndrome. In this syndrome, thought to afflict up to 25 percent of the United States population, insulin resistance combines with high cholesterol, obesity and hypertension to predispose

affected individuals to a greater heart disease risk.

Laboratory studies have shown that high glucose levels even within the normal range adversely affect endothelial function (the lining of the blood vessels) via a multitude of mechanisms.⁶ High blood sugar also has been linked to increased platelet activation in obese women.⁷

One group of researchers, in reviewing the evidence linking blood sugar to heart disease, wrote "In cardiovascular disease, dietary fat and blood lipids have attracted the lion's share of attention. But carbohydrate, the macronutrient that increases when fats are restricted, may not be the totally desirable nutrient that we believe. The findings of the Lyon Heart Study, one of the most important nutrition studies ever carried out, emphasize that the 'prudent' high carbohydrate western diet is not the best choice for reducing cardiovascular events."

The researchers went on to explain that post-meal hyperglycemia is an under-recognized risk factor for cardiovascular and total mortality in the non-diabetic population. They pointed to a host of large studies in which high post-challenge blood glucose was associated with 1.8 to 3 times greater relative risk of death and that reducing the rate of carbohydrate absorption halves the risk of cardiovascular events and hypertension.⁶

Factors Affecting Blood Sugar

A number of factors can contribute to the development of hyperglycemia (Table 1). As we age, almost everyone becomes insulin resistant. Lack of exercise is another factor contributing to insulin resistance, as is a diet high in sugary, processed foods. Even exposure to certain pesticides is related to an increase in insulin resistance and this association becomes even stronger in overweight individuals.⁸

Inadequate sleep also can contribute to unhealthy blood sugar levels as studies have linked low levels of the hormone melatonin to hyperglycemia and weight gain.⁹

Therefore, in addition to undertaking the blood sugar supporting supplement regimen I outline below, I also suggest that individuals supplement with melatonin and remain asleep in a dark room between midnight and 4 a.m. to enhance the body's natural melatonin production.

Finally, stress remains as damaging to healthy blood sugar levels as is a poor diet. Recent data from animal studies and large epidemiological studies in humans provide strong linkage between psychological stress and diabetes.¹⁰⁻¹¹

An Essential Weight Loss Tool

Lowering blood sugar through lifestyle measures combined with proper nutritional supplementation is one of the most effective ways to eliminate unwanted pounds. The best evidence that lowering blood sugar levels is tied to weight loss is studies linking low glycemic diets to improved results on weight management programs.

Diets based on high-glycemic-index carbohydrate foods have been shown to 1) increase day-long blood glucose and insulin levels 2) exacerbate insulin resistance in predisposed individuals 3) adversely affect markers of the metabolic syndrome (triglycerides and HDL-cholesterol) in intervention studies and, as mentioned above, 4) increase the risk of coronary disease in a healthy population.

Low-glycemic-index diets, on the other hand, as well as glycemic load, may reduce visceral fat deposition. In women with a family history of cardiovascular disease, following a low-GI diet for 4 weeks resulted in increased insulin sensitivity

Factors Affecting Blood Sugar

- Age
- Lack of Exercise
- Diets High in Sugary, Processed Foods
- Pesticide Exposure
- Inadequate Sleep
- Stress

Table 1.

after a glucose challenge and increased glucose uptake in isolated fat cells. Even in lean young adults, a low-GI diet reduced muscle triglycerides, a marker of insulin resistance.⁶ In addition, consuming high levels of high-glycemic carbohydrates causes enhanced appetite and a tendency to overeat.¹²⁻¹³

One of the most important components of a low-glycemic diet is xylitol, a natural sweetener that has negligible effects on blood sugar levels.¹⁴ Replacing sugar with xylitol can help to stabilize blood sugar levels while satisfying the need for a sweet treat. Xylitol tastes like sugar and can be used in baked products. It is an important part of a blood-sugar-lowering program, and can be used effectively together with the nutritional supplements mentioned below.

Energy Enhancement

Although initial rises in blood sugar that occur after ingestion of a high-carbohydrate meal or snack can result in a short-term energy surge, this initial energy surge is followed by a subsequent blood sugar “crash” that results in increased fatigue. This explains, in part, why diabetics report fatigue as one of their most common symptoms. Clinically, I have noted that a blood-sugar stabilizing regimen that helps avoid these up and down blood sugar levels usually results in enhanced energy.

Blood Sugar Improvement Strategies

In my clinical practice, I have found that combining lifestyle approaches with nutritional supplements shown to support healthy blood sugar and cortisol levels can serve as an effective way to increase weight loss and reduce fatigue.

Goat’s Rue, bitter melon and cinnamon, as mentioned in the first installment of *The Five Components to Healthy Aging*, are three of the most effective botanicals for addressing hyperglycemic issues.

Goat’s rue is rich in guanidine, its hypoglycemic component. The guanidine in goat’s rue improves insulin sensitivity and causes a long-lasting reduction of blood sugar content in rats and an increase in carbohydrate tolerance. Goat’s rue extracts have stabilized blood sugar in both normal and diabetic humans.¹⁵

Cinnamon continues to be one of the most widely researched blood-sugar-supporting botanicals. Since I last reported

on this spice in the first installment of the *5 Components* article, a new pilot study has shown that cinnamon has some interesting effects in women with polycystic ovary syndrome, a condition characterized by abnormal glucose metabolism. Fifteen women with polycystic ovary syndrome randomized to daily oral cinnamon for 8 weeks experienced significant reductions in insulin resistance, an effect not noted in the placebo group.¹⁶

Bitter melon can be combined with cinnamon and goat’s rue to enhance glycemic control efforts. It contains substances with antidiabetic properties and has had anti-obesity effects in rodents.¹⁷

“A blood-sugar stabilizing regimen that helps avoid up and down blood sugar levels usually results in enhanced energy.”

One of the most effective ways to achieve results is to combine formulas containing goat’s rue, cinnamon and bitter melon with a multivitamin that contains nutrients such as chromium, lipoic acid, N-acetyl cysteine, and *Gymnema sylvestre*. Additional amounts beyond what’s found in a blood-sugar supporting multivitamin can also be taken to enhance the effects.

Chromium is one of the most important blood-sugar stabilizing nutrients we can consume. The more carbs we eat, the lower our chromium levels, and the majority of the population has been found to be subclinically deficient in this nutrient. Recently, researchers from Yale University found that supplementation with chromium picolinate plus biotin can improve glycemic control in type 2 diabetic patients not responding to oral antihyperglycemic agents.¹⁸ Another recent study determined that chromium picolinate can work together with a common anti-diabetic medication to improve blood sugar and substantially reduce weight gain in type 2 diabetics.¹⁹

Lipoic acid has emerged as a safe and effective agent with insulin-sensitizing

activity. In a recent study, type 2 diabetic patients given alpha-lipoic acid experienced an improvement in insulin sensitivity, indicating they were better able to use insulin.²⁰

Another antioxidant that should be included in any glucose-controlling supplement regimen is N-acetyl cysteine. It can be especially helpful when our will power weakens and we find ourselves consuming too many refined carbohydrates since recent animal studies have shown that NAC inhibits the hyperglycemia and body weight gain that occurs after consumption of a sucrose-rich diet.²¹

Gymnema sylvestre is another important component to a blood sugar stabilizing regimen. *Gymnema* has a profound effect on the modulation of taste, suppressing sweet taste sensations and helping to reduce appetite. One study that investigated *Gymnema sylvestre*’s effects on type 2 diabetic subjects also demonstrated that this herb could produce a significant reduction in blood glucose, glycosylated haemoglobin and that conventional drug dosage could be decreased or eliminated after *Gymnema* supplementation.²²

“These data” the researchers wrote, “suggest that the beta cells may be regenerated/repared in type 2 diabetic patients on *Gymnema* supplementation.”

To achieve the best results from anti-hyperglycemic agents, I recommend also consuming botanicals designed to counteract high cortisol levels. Relora[®] is a proprietary blend of a patented extract from *Magnolia officinalis* bark and a patent-pending extract from *Phellodendron amurense* bark. In one clinical trial of Relora, after 49 stressed subjects who suffered from stress-induced overeating were given a two-to-three-times per day dose of Relora for two weeks, there was a 76 percent decline in high fat/sugar/salt snack eating. Sensoril[™] is a patented proprietary extract of roots and leaves from *Withania somnifera* Dunn, known as Ashwagandha in Ayurvedic medicine. Sensoril is standardized to contain the proper amounts of glycowithanolides, Withaferin-A, and oligosaccharides that research has shown to promote optimal anti-stress activity. It has protected against the negative effects of stress on the adrenal glands.²³

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Blood Sugar Control

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Conclusion

Many factors influence the way our bodies metabolize glucose, including diet, sleep, stress, pesticide exposure, and exercise quantity. Even if we take steps to control all of these measures, we must still contend with our advancing age and the resulting increase in insulin resistance that ensues as our bodies become less efficient at producing insulin. Consequently, participating in a glucose-controlling supplement regimen that includes a variety of natural substances can help achieve the best results.

References

1. Razay G, Vreugdenhil A, Wilcock G. The Metabolic Syndrome and Alzheimer Disease. *Arch Neurol*. January 2007;64(1):93-96.
2. Taylor V, MacQueen G. Associations between bipolar disorder and metabolic syndrome: A review. *J Clin Psychiatry*. 2006 Jul;67(7):1034-41.
3. Chung CP, Oeser A, Solus JF, Avalos I, Gebretsadik T, Shintani A, Raggi P, Sokka T, Pincus T, Stein CM. Prevalence of the metabolic syndrome is increased in rheumatoid arthritis and is associated with coronary atherosclerosis. *Atherosclerosis*. 2007 Jan 29; [Epub ahead of print]
4. Stattin P, Bjor O, Ferrari P, Lukanova A, Lenner P, Lindahl B, Hallmans G, Kaaks R. Prospective Study of Hyperglycemia and Cancer Risk. *Diabetes Care*. 2007

Mar;30(3):561-567.

5. Seyhan M, Ozcan H, Sahin I, Bayram N, Karıncaoğlu Y. High prevalence of glucose metabolism disturbance in patients with lichen planus. *Diabetes Res Clin Pract*. 2007 Jan 31; [Epub ahead of print].
6. Brand-Miller JC. Glycemic index in relation to coronary disease. *Asia Pac J Clin Nutr*. 2004;13(Suppl):S3.
7. Basili S, Pacini G, Guagnano MT, Manigrasso MR, Santilli F, Pettinella C, Ciabattini G, Patrono C, Davi G. Insulin resistance as a determinant of platelet activation in obese women. *J Am Coll Cardiol*. 2006 Dec 19;48(12):2531-8. Epub 2006 Nov 28.
8. Lee DH, Lee IK, Jin SH, Steffes M, Jacobs DR Jr. Association Between Serum Concentrations of Persistent Organic Pollutants and Insulin Resistance Among Nondiabetic Adults: Results from the National Health and Nutrition Examination Survey 1999-2002. *Diabetes Care*. 2007 Mar;30(3):622-628.
9. Kanter M, Uysal H, Karaca T, Sagmanligil HO. Depression of glucose levels and partial restoration of pancreatic beta-cell damage by melatonin in streptozotocin-induced diabetic rats. *Arch Toxicol*. 2006 Jun;80(6):362-9. Epub 2005 Dec 9.
10. Shiloah E, Rapoport MJ. Psychological stress and new onset diabetes. *Pediatr Endocrinol Rev*. 2006 Mar;3(3):272-5.
11. Agardh EE, Ahlbom A, Andersson T, Efendic S, Grill V, Hallqvist J, Norman A, Ostenson CG. Work stress and low sense of coherence is associated with type 2 diabetes in middle-aged Swedish women. *Diabetes Care*. 2003 Mar;26(3):719-24.
12. Speechly DP, Buffenstein R. Appetite dysfunction in obese males: evidence for role of hyperinsulinaemia in passive overconsumption with a high fat diet. *Eur J Clin Nutr*. 2000 Mar;54(3):225-33.
13. Ludwig DS, Majzoub JA, Al-Zahrani A, Dallal GE, Blanco I, Roberts SB. High glycemic index foods, overeating, and obesity. *Pediatrics*. 1999 Mar;103(3):E26.
14. Pierini C. Xylitol: A Sweet Alternative. *Unique Sweetener Supports Oral Health*. *Vitamin Research News*. Available at <http://www.vrp.com/art/673.asp>

15. Petricic J, Kalodera Z. Galegin in the goats rue herb: its toxicity, antidiabetic activity and content determination. *Acta Pharm Jugosl*. 1982; 32(3):219-23.
16. Wang JG, Anderson RA, Chu MC, Sauer MV, Guarnaccia MM, Lobo RA. The effect of cinnamon extract on insulin resistance parameters in polycystic ovary syndrome: a pilot study. *Fertil Steril*. 2007 Feb 9; [Epub ahead of print].
17. Tongia A, Tongia SK, Dave M. Phytochemical determination and extraction of Momordica charantia fruit and its hypoglycemic potentiation of oral hypoglycemic drugs in diabetes mellitus (NIDDM). *Indian J Physiol Pharmacol*. 2004 Apr;48(2):241-4.
18. Singer GM, Geohas The effect of chromium picolinate and biotin supplementation on glycemic control in poorly controlled patients with type 2 diabetes mellitus: a placebo-controlled, double-blinded, randomized trial. *J Diabetes Technol Ther*. 2006 Dec;8(6):636-43.
19. The 65th Scientific Sessions of the American Diabetes Association (ADA), June 16, 2005, San Diego. Information provided by The Pennington Biomedical Research Center of the Louisiana State University.
20. Kamenova P. Improvement of insulin sensitivity in patients with type 2 diabetes mellitus after oral administration of alpha-lipoic acid. *Hormones (Athens)*. 2006 Oct-Dec;5(4):251-8.
21. Diniz YS, Rocha KK, Souza GA, Galhardi CM, Ebad GM, Rodrigues HG, Novelli Filho JL, Cicogna AC, Novelli EL. Effects of N-acetylcysteine on sucrose-rich diet-induced hyperglycaemia, dyslipidemia and oxidative stress in rats. *Eur J Pharmacol*. 2006 Aug 14;543(1-3):151-7. Epub 2006 Jun 2.
22. Baskaran K, Kizar Ahmath B, Radha Shanmugasundaram K, Shanmugasundaram ER. Antidiabetic effect of a leaf extract from *Gymnema sylvestre* in non-insulin-dependent diabetes mellitus patients. *J Ethnopharmacol*. 1990 Oct;30(3):295-300.
23. South J. Stress and Cortisol: The Plague of the 21st Century. *Vitamin Research News*. Available at <http://www.vrp.com/art/1224.asp>.

Antioxidant Study

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- A 2005 study published in the *American Journal of Clinical Nutrition* compared the levels of alpha-carotene, beta-carotene and alpha-tocopherol in elderly Europeans. The results of this prospective study indicated “that high plasma concentrations of carotene are associated both with lower mortality from all causes and with cancer in the elderly.”⁵
- A case-control study, nestled within the European Prospective Investigation into Cancer and Nutrition (EPIC), found that “higher plasma concentration of some carotenoids, retinol and alpha-tocopherol are associated with a reduced risk” of developing gastric cancer.⁶
- In 2006, Australian researchers found that selenium offered protection against cancer of the colon and rectum, and that dietary levels of vitamins E and C

“were statistically significantly protective for both colon and rectal cancer at all levels of consumption, and for both vitamins there was a dose-response effect of increasing protection, particularly so for colon cancer.”⁷

This is just a small sampling of the large number of antioxidant studies with positive outcomes that have emanated from research centers around the world. Yet very few of these were included in JAMA’s anti-oxidant meta-analysis, which “proved” antioxidants are harmful. Is it because the researchers decided in advance what the conclusion would be, then cherry-picked studies that would support their view?

Our understanding of antioxidants is still evolving, and there are still gaps in our knowledge. Researchers are currently comparing the effects of natural and synthetic sources of antioxidants, of antioxidants in their different chemical forms, of single antioxidants versus combinations, and of varying doses. However, it is clear that both high levels of antioxidant

consumption and high levels of antioxidants in the blood are associated with better health and increased longevity.

References:

1. Bjelakovic G, Nikolova D, Gluud LL, et. al. Mortality in randomized trials of antioxidant supplements for primary and secondary prevention: systematic review and meta-analysis. *JAMA*. 2007;297(8):842-57.
2. Stampfer MJ, Hennekens CH, Manson JE, et. al. Vitamin E consumption and the risk of coronary disease in women. *NEJM*. 1993;328(20):1444-9.
3. Rimm EB, Stampfer MJ, Ascherio A, et. al. Vitamin E consumption and the risk of coronary heart disease in men. *NEJM*. 1993;328(20):1450-6.
4. Ito Y, Kurata M, Suzuki K, et. al. Cardiovascular disease mortality and serum carotenoid levels: a Japanese population-based follow-up study. *J Epidemiol*. 2006;16(4):154-60.
5. Buijsse B, Feskens EJ, Schlettwein-Gsell D, et. al. Plasma carotene and alpha-tocopherol in relation to 10-y all-cause and cause-specific mortality in European elderly: the Survey in Europe on Nutrition and the Elderly, a Concerned Action (SENECA). *Am J Clin Nutr*. 2005;82(4):879-86.
6. Jenab M, Riboli E, Ferrari P, et. al. Plasma and dietary carotenoid, retinol and tocopherol levels and the risk of gastric adenocarcinomas in the European prospective investigation into cancer and nutrition. *Br J Cancer*. 2006;95(3):406-15.
7. Kune G, Watson L. Colorectal cancer protective effects and the dietary micronutrients folate, methionine, vitamins B6, B12, C, E, selenium, and lycopene. *Nutr Cancer*. 2006;56(1):11-21.

Women's Hormones

Continued from page 6

reduce their estrogen levels. This is where a healthy diet, exercise, a nutritional program, and stress reduction all play a part in creating hormonal balance. The best way to assess an individual's unique hormonal profile is with a saliva test.

Conclusion

Restoring truthful knowledge of the female physiology allows women of all ages to journey through all of life's cycles, in health and in balance. The sociologist Margaret Mead had it right when she said, "There is nothing more powerful than a menopausal woman with zest!"

References:

1. Bull Hist Med. 2003 Spring;77(1):103-32.
2. Robert A. Wilson, *Feminine Forever* (New York: M. Evans, 1966), 19.
3. Smith DC, Prentice R, Thompson DJ, Herrmann WL. Association of Exogenous Estrogen and Endometrial Carcinoma. *New England Journal of Medicine*. December 1975; 293(23):1164-67.
4. Ziel HK, Finkle WD. Increased Risk of Endometrial Carcinoma among Users of Conjugated Estrogens. *New England Journal of Medicine*. December 1975; 293(23):1167-70. Mack TM, Pike MC, Henderson BE, Pfeffer RI, Gerkins VR, Arthur M, Brown SE. Estrogens and Endometrial Cancer in a Retirement Community. *New England Journal of Medicine*. 1976 June;294(23):1262-67.
5. Ockene JK, Barad DH, Cochrane BB, Larson JC, Gass M, Wassertheil-Smoller S, Manson JE, Barnabei VM, Lane DS, Bryski RG, Rosal MC, Wylie-Rosett J, and Hays J. Symptom Experience after Discontinuing Use of Estrogen + Progestin. *JAMA*. July 2005;294(2):183-93.

6. National Institute of Environmental Health Sciences (NIEHS) <http://ntp.niehs.nih.gov/ntp/roc/eleventh/profiles/s084ster.pdf>.
7. Prior JC. Perimenopause--the ovary's frustrating grand finale. *A Friend Indeed*. 1998;15(7):1-4.
8. Prior JC. Ovulatory changes with perimenopause. *Endocrine Ageing in Women*. In: *Endocrine Facets of Ageing in the Human and Experimental Animal*. Veldhuis JD, Laron Z, eds. London: Wiley Publishers (in press), 2001.
9. Garcia CR, Cutler WB. Preservation of the ovary: a reevaluation. *Fertil Steril*. 1984;42:510.
10. http://www.johnleemd.com/store/estrogen_dom.html ovary. Longcope C, Hunter R, Franz C. Steroid secretion by the postmenopausal ovary. *Am J Obstet Gynecol*. 1980 Nov 1;138(5):564-8.

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PET CORNER

By Gary L. Ailes, DVM

Cardiovascular Care in Animals

Many of the conditions we see in humans are replicated in pets. But is heart disease in our pets really something to be concerned about? Actually, the cardiac events that occur in people (heart attacks) are rarely seen in animals. The length of time animals are with us doesn't allow for the build up of plaque in the arteries as happens in people.

Despite the fact our pets do not suffer from the same type of artery-destroying plaque build up as humans, animals are subject to some other types of cardiovascular problems. Blood clots, for example, are possible in pets. Furthermore, weakened heart muscle (cardiomyopathy), leaky heart valves (heart murmur), ruptured or torn supports for the valves and similar problems do occur in our animals.

Cardiomyopathy is a degenerative condition of the heart muscle. This causes a weakness in the ability of the heart to contract and pump the blood through the body. That in turn, creates a deficiency in the body's ability to receive the necessary oxygen and nutrients. While that is happening, waste

products build in the system since they cannot be efficiently transported to the liver and kidneys for elimination. Some of the cardiomyopathy that occurs in cats and dogs can be traced to taurine deficiency in the diet.

Leaky heart valves can create the problem referred to as heart murmurs. These leaks may be caused by a congenital problem or may be acquired over time. Many of the acquired leaks can come from teeth that have not been kept clean. The buildup of tartar allows bacteria to grow under the gums (gingivitis, leading to pyorrhea) to shower into the system anytime there is trauma to the mouth. This would include bumping of the mouth or something as simple as eating. While the body is usually good at handling this kind of infection, over time, it is not unusual for the bacteria to start growing on the heart valves. That creates a problem called verrucous endocarditis, which creates bumps on the valves and secondary leaks.

To read the rest of this article please go to www.vrppet.com

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Fiber Crucial to Breast Health in Premenopausal Women

A new epidemiological study has found that premenopausal women who consume 30 or more grams of fiber per day experience a 52 percent reduction in breast cancer risk.

Researchers studied 35,792 women who participated in the United Kingdom Women's Cohort Study. The researchers assessed dietary intakes of the women using a self-administered 217-item food frequency questionnaire. Subjects had a wide range of exposure to dietary fiber with intakes of total fiber in the lowest quintile of less than 20 grams per day up to greater than 30 grams per day in the top quintile.

The researchers divided the women into five groups (quintiles) according to their fiber intakes. Effects of fiber, adjusting for confounders, were examined for pre- and post-menopausal women separately.

In the mean follow-up period of 7.5 years, 350 women developed invasive breast cancer postmenopausally and 257 developed the disease premenopausally. In premenopausal, but not postmenopausal, women a statistically significant inverse relationship was found between total fiber intake from cereal and fruit and risk of breast cancer. Subjects who consumed the most fiber compared with those who consumed the least experienced roughly half the risk of developing breast cancer. According to the study, an average daily intake of 30 grams or more of total fiber was associated with a 52 percent lower risk of breast cancer in premenopausal women, compared to premenopausal women with a daily intake of 20 grams or less. In the UK, the average person consumes roughly 12 grams per day.

A further model including dietary folate appeared to strengthen fiber's protective role against breast cancer.

The researchers suggested that fiber may support health in premenopausal women because antioxidant nutrients in high-fiber foods have protective properties against reactive oxygen species. Another theory, they suggested, is that fiber may stabilize insulin levels in the body, since

hyperglycemia may be a potential cause of cancer. Another theory why fiber may be important to breast health, they suggested, revolves around estrogen's role in the development of breast cancer. Past studies have indicated that dietary fiber may help regulate estrogen. Because premenopausal women have higher levels of estrogen than postmenopausal women, this could explain why fiber appeared to offer more benefit in the younger subjects.

Reference:

Elizabeth Cade J, Burley VJ, Greenwood DC. Dietary fibre and risk of breast cancer in the UK Women's Cohort Study. *International Journal of Epidemiology*. Published online on January 24, 2007.

Women who want to increase their dietary fiber intake can supplement with Fiber-Rite or Detox FiberPlex.

Selenium Boosts Immunity in HIV Patients

A new human trial has found that selenium decreases HIV viral load and increases levels of beneficial immune cells.

For the double-blind, randomized, placebo-controlled trial, researchers screened 450 HIV-1-seropositive men and women and initiated treatment in 262 of those subjects. Of those treated, 174 completed the nine-month follow-up assessment.

The subjects were given high selenium yeast (200 μg per day) or a placebo. The scientists then assessed selenium's effect on HIV-1 viral load and its effect on the CD4 immune cell count after 9 months of treatment.

Subjects consuming selenium had higher levels of the mineral than those consuming a placebo. Selenium-treated subjects who also had high levels of the mineral experienced decreased HIV-1 viral load and increased CD4 count. Follow-up analyses evaluating treatment effectiveness indicated that the non-responding selenium-treated subjects whose serum selenium change was less than or equal to 26.1 μg /liter did not adhere to the selenium supplementation protocol. In these subjects, HIV-1 viral load was elevated and CD4 count decreased. In contrast, selenium-treated subjects whose serum selenium increase was greater than

26.1 μg /L evidenced excellent treatment adherence, no change in HIV-1 viral load, and an increase in CD4 count.

According to the study authors, "daily selenium supplementation can suppress the progression of HIV-1 viral burden and provide indirect improvement of CD4 count. The results support the use of selenium as a simple, inexpensive, and safe adjunct therapy in HIV spectrum disease."

Reference:

Hurwitz BE, Klaus JR, Llabre MM, Gonzalez A, Lawrence PJ, Maher KJ, Greeson JM, Baum MK, Shor-Posner G, Skyler JS, Schneiderman N. Suppression of Human Immunodeficiency Virus Type 1 Viral Load With Selenium Supplementation. A Randomized Controlled Trial. *Archives of Internal Medicine*. January 22, 2007;167(2):148-54.

Whey Protein Rivals Soy for Muscle Building

A new animal study indicates that whey protein synthesizes skeletal muscle after exercise and that its ability to do so is comparable to that of soy.

Researchers compared the early response of skeletal muscle protein synthesis following the ingestion of different protein sources in an animal model of endurance exercise. The researchers divided rats into four groups. The first group served as a non-exercised control group. The remaining three groups were treadmill exercised for 2 hours, then fed a meal containing carbohydrates only, carbohydrate plus soy, or carbohydrate plus whey protein.

Serum concentrations of branched-chain amino acids in the soy-supplemented and in the whey-protein-supplemented animals were higher than in the group fed only carbohydrates. Serum leucine and isoleucine concentrations were higher in the whey group than in the soy group. Both soy and whey protein caused a significantly higher rate of skeletal muscle protein synthesis compared to carbohydrate feeding only. Whey protein and soy protein also increased markers of protein synthesis.

Reference:

Anthony TG, McDaniel BJ, Knoll P, Bunpo P, Paul GL, McNurlan MA. Feeding Meals Containing Soy or Whey Protein after Exercise Stimulates Protein Synthesis and Translation Initiation in the Skeletal Muscle of Male Rats. *J Nutr*. February 2007;137:357-362.

Alpha-Lipoic Acid Guards Against Metabolic Syndrome

A recent review of the medical literature has concluded that alpha-lipoic acid can help alleviate the cluster of symptoms associated with metabolic syndrome.

In animal experiments, alpha-lipoic acid, a potent antioxidant and free radical scavenger, has been shown to cause weight loss, ameliorate insulin resistance and high lipid levels and to lower blood pressure—all components of the metabolic syndrome, the reviewers pointed out in a March 2007 article.

Recent investigations on its mechanisms of action indicate that alpha-lipoic acid can trigger a series of beneficial effects in cardiac tissue and aorta smooth muscle.

According to the reviewers, “To a large extent, these findings can explain the observed beneficial metabolic effects of alpha-lipoic acid, supporting its potential application as a therapeutic agent for the treatment of the metabolic syndrome.”

Reference:

Pershad Singh HA. Alpha-lipoic acid: physiologic mechanisms and indications for the treatment of metabolic syndrome. *Expert Opin Investig Drugs*. 2007 Mar;16(3):291-302.

Quercetin Improves Immunity and Mental Performance in Individuals Undergoing Physical Stress

Quercetin, a flavonoid antioxidant found in plants, may help reduce illness and maintain mental performance in physically-stressed subjects, according to research presented at the Southeastern regional meeting of The American College of Sports Medicine.

In the new study, led by researchers at Appalachian State University, trained cyclists consumed 1,000 mg per day of quercetin (plus niacin and vitamin C) for five weeks. Another group of 20 cyclists were given a placebo. After three weeks, subjects rode a bicycle three hours per day for three days to the point of exhaustion. Researchers measured blood and tissue samples to determine physiological changes.

After the exercise period, approximately 45 percent of the placebo-consuming cyclists became ill, while only 5 percent of the quercetin group suffered any illness. Furthermore, when given an alertness test, the quercetin-consuming subjects better maintained their ability to react after exhaustion.

Quercetin’s ability to enhance immunity only took effect after the three-day intense exercise program, leading researchers to suggest that quercetin’s infection-fighting properties primarily occur after significant stress.

Reference:

Nieman DC, et. al. Research presented at the Southeastern Regional Meeting of the American College of Sports Medicine, Charlotte, N.C., February 9, 2007, <http://theapp.appstate.edu/content/view/2022/43/>.

Quercetin is found in *QuerCelain™* and *Bioflavonoid Complex with Quercetin*.

Vitamin D: New Study on Weight Management

A new study emphasized the role vitamin D and calcium may play in an effective weight management program.

In the study, researchers determined the effects of daily vitamin D combined with calcium during a weight-loss intervention program. The trial included 63 healthy, overweight or obese women. The subjects were randomly assigned in a double-blind manner to 1 of 2 groups: one group consumed 2 tablets per day of a calcium plus vitamin D supplement (600 mg elemental calcium and 200 IU vitamin D per tablet) while another group consumed a placebo. Both groups observed 700 kcal/day energy restriction.

After the 15-week intervention, significantly greater decreases in low-density lipoprotein cholesterol (LDL, or “bad” cholesterol) were observed in the calcium plus vitamin D group than in the placebo group. In addition, the LDL:HDL ratio also decreased substantially in the calcium plus vitamin D group. The differences were independent of changes in fat mass and waist circumference. A tendency for more beneficial changes in high-density lipoprotein (HDL “good” cholesterol), tri-

glycerides, and total cholesterol was also observed in the calcium plus vitamin D group.

Reference:

Major GC, Alarie F, Dore J, Phouttama S, Tremblay A. Supplementation with calcium + vitamin D enhances the beneficial effect of weight loss on plasma lipid and lipoprotein concentrations. *Am J Clin Nutr*. 2007 Jan;85(1):54-9.

Vitamin A and Carotenoids Support Gastric Health

Results of a large study indicate that higher intakes of vitamin A, retinol and provitamin A carotenoids are associated with a reduced risk of gastric cancer.

Vitamin A may influence gastric carcinogenesis through its essential role in controlling cell proliferation and differentiation. Therefore, in the current study, researchers examined the associations between intakes of vitamin A, retinol, and specific carotenoids and the risk of gastric cancer in 82,002 Swedish adults. The subjects, ages 45–83 years, had completed a food-frequency questionnaire in 1997 and were followed through June 2005.

During the mean 7.2-year follow-up, 139 incident cases of gastric cancer were diagnosed. High intakes of vitamin A and retinol from foods only (dietary intake) and from foods and supplements combined (total intake) were associated with a lower risk of gastric cancer. Dietary carotene and beta-carotene also were associated with a lower risk of gastric cancer. Compared with subjects who consumed the least intake of these nutrients, individuals with the highest intake of total vitamin A had a 47-percent reduced risk. Total retinol was associated with a 44 percent reduced risk and beta-carotene with a 45 percent reduced risk. Alpha-carotene decreased the risk by about half.

The study authors concluded, “High intakes of vitamin A, retinol, and provitamin A carotenoids may reduce the risk of gastric cancer.”

Reference:

Larsson SC, Bergkvist L, Näslund I, Rutegård J, Wolk A. Vitamin A, retinol, and carotenoids and the risk of gastric cancer: a prospective cohort study. *American Journal of Clinical Nutrition*. February 2007. 85(2):497-503.



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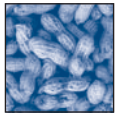
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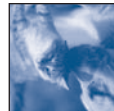
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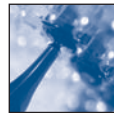


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