

Vitamin Research News

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Cardiovascular Health: The First Component of Healthy Aging

by Chris D. Meletis, ND

In the January newsletter article, *Five Components to Healthy Aging*, I touched upon the five most critical ways individuals can stay healthy throughout their lives. Beginning with this newsletter, I would like to expand upon those five components and delve deeper into each one in the coming months, starting with cardiovascular health, in order to help develop a comprehensive anti-aging strategy.

In *Five Components to Healthy Aging*, I emphasized the importance of lowering

cholesterol and homocysteine levels. In this newsletter, I will address other interrelated factors that play an equally important role in heart health: arterial calcification (atherosclerosis), thrombus (clot formation) and high fibrinogen and C-Reactive Protein levels.

Arterial Calcification

Atherosclerosis, otherwise known as hardening of the arteries or arterial calci-

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Lectin Lock™: Natural Defense Against a Hidden Cause of Digestive Concerns and Weight Gain

by Carolyn Pierini, CLS (ASCP), CNC

Last month's article on lectins and their damaging potential to our health was a technical introduction to their chemistry. For many it was the first exposure to an extensive and emerging science that has far reaching applications. The fact that lectins interact with us on a day-to-day basis makes it an important topic to become familiar with even though our understanding of lectin effects is a complex one to grasp. It is generally accepted that real health begins with proper digestion demanding an intact and blissfully functioning digestive system. But it would appear from the amount of complaints related to digestion that physicians encounter daily that this first stage

of health is being seriously compromised and in need of investigation. There are the probable reasons for faulty digestion like poor food quality, unhealthful eating habits around lifestyle, etc., but lectins give us a reason for poor digestion that is perhaps not so obvious. While the first article was a technical glimpse into the world of lectins, this article will answer the question begged from the last article, "So if lectins are in my foods and many are potentially harmful to me then what can I do to minimize my exposure to them?" As part of the answer to this question, here is a very simplified recap

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In addition to EDTA's intravenous benefits are its clinical uses when administered orally. Early clinical studies with EDTA reported loss of fat in rats, reduction of cholesterol in rabbits, and reduced blood pressure in humans. Consequently, a study of the effects of oral EDTA on patients with atherosclerosis and/or hypertension was conducted on 10 patients. Four of these patients had hypertension, four had angina pectoris, one had peripheral vascular disease (intermittent claudication), and one was recovering from a heart attack. All were treated with one gram of oral EDTA daily for three months. Seven of the

“Fibrinogen may possibly be the major risk factor for heart disease, exceeding the risk posed by homocysteine and cholesterol.”

ten patients experienced significant reductions in their cholesterol levels, and blood pressure was reduced in all ten. The most marked change occurred in the patient with intermittent claudication, whose cholesterol dropped from 278 mg per 100 ml to 128. This patient also reported improved exercise tolerance, and the researchers found improved pulsations in the extremities. The four patients with angina pectoris also all reported improvement.⁴

Scientists at Wayne State University also quantified reversal in atherosclerotic plaque in rabbits that were treated with daily subcutaneous EDTA injections.⁵

Garlic is another chelating agent that supports arterial health and healthy cholesterol levels, reduces the risk of thrombosis (the ability of clots to break away from the arterial wall and move through the blood stream), and promotes healthy blood pressure levels.⁶ Garlic's effects are attributed to allicin, ajoene, and other organosulfur constituents in the herb.⁷

Garlic shows promise for improving platelet-function discrepancies related to

cardiovascular disease. In one study, garlic extract inhibited platelet aggregation and adhesion to fibrinogen at all levels of supplementation.⁸ In another study of the effects of garlic on human blood, platelet adhesion to fibrinogen was decreased by approximately 30 percent compared to placebo.⁹ A new study on garlic confirms that it exhibits powerful fibrinolytic activity both in vitro and in vivo. In this study, it acted as an anticoagulant by downregulating thrombin formation.¹⁰ Thrombin is an enzyme formed in blood from prothrombin, which reacts with fibrinogen to convert it to fibrin, the primary material that holds together a blood clot. Garlic's thrombin-reducing mechanism of action led the researchers to state that garlic may have “a beneficial role in preventing pathological thrombus formation” in cardiovascular disorders that involve blood clotting.

Using chlorella to complement the chelating effects of EDTA and garlic can serve as a highly effective way to improve heart health. In a pilot study on chlorella's role in blood pressure health in 24 hypertensive subjects, 25 percent of the patients (6 of 24) experienced a reduction in the blood pressure. In the remaining subjects, the blood pressure stabilized after chlorella supplementation. Quality-of-life questionnaires indicated an overall perception that health had significantly improved in conjunction with chlorella consumption.¹¹

In animals, chlorella also has been shown to have anti-atherosclerosis actions and to protect the arteries against the damaging effects of a high-fat diet.¹²

Malic acid works with EDTA, garlic, and chlorella to help improve vascular health. This organic acid is important for overall heart health and protects human vascular endothelial cells from the effects of oxidized cholesterol.¹³

Weakening Fibrinogen

One of the most effective natural agents for lowering fibrinogen levels is nattokinase, an enzyme derived from the traditional fermented Japanese soy food known as natto. In vitro and in vivo studies have consistently demonstrated the potent fibrinolytic (fibrinogen-destroying) effect of this enzyme. In one in vitro study, nattokinase significantly reduced red blood cell aggregation and blood viscosity, with these

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The President's Desk

The Unreported Truth

Once again, the news media has launched an unsubstantiated attack on the supplement industry. I am referring to the CBS Evening News two-part series, which appeared on January 15 and 16. Billed as “The Great Supplement Debate,” the series was based on a new book whose author was quoted throughout the broadcast. This author claimed that nutritional supplements are not backed by scientific research and that they are a hazard.

Anyone who is truly familiar with the medical literature knows there are thousands of studies to support the efficacy and safety of natural products. The book author conveniently chose to ignore those positive studies and instead unjustly lambasted a number of natural substances.

The CBS broadcast also implied that dietary supplements are unsafe. Yet, dietary supplements have an enviable safety record, especially compared with pharmaceutical drugs and botched medical procedures, which kill hundreds of thousands of people each year. In addition, the CBS broadcast left viewers walking away with the impression that supplement sellers are left to run wild in their marketing and manufacturing efforts. Yet, both the FDA and the FTC can and do take action when necessary to police the market place. The Dietary Supplement Health and Education Act of 1994 was not the evil law that CBS News made it out to be. Rather, it gave the U.S. Food and Drug Administration the power to ensure dietary supplements are safe and properly labeled and that manufacturers' claims are substantiated. The new good manufacturing practices regulation, a DSHEA outgrowth, will further ensure the purity and quality of dietary supplements.

According to David Seckman, executive director and CEO of the Natural Products Association, “With between 150 to 200 million adult users of dietary supplements, a story that casts doubt on supplements' safety, efficacy and quality is sure to draw many curious viewers and potentially add to ratings.”

Please join with me in spreading the word about the safety and efficacy of nutritional supplements. Together, we can repair some of the damage inflicted by CBS's inaccurate reporting.



**Robert Watson
President/CEO**

Cardiovascular

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beneficial effects evident at concentrations similar to those achieved in previous in vivo animal trials.¹⁴

In another study, nattokinase demonstrated some impressive effects in rats. Three weeks before the researchers triggered endothelial damage in the arteries of the animals, they began feeding the animals nattokinase. Intimal thickening in animals fed nattokinase was significantly suppressed compared with controls. In the control group, after arterial injury was induced, although the center of vessel lumen was reopened, thrombi were attached on the surface of vessel walls. In contrast, in nattokinase-treated groups, thrombi near the vessel wall split apart. In addition, after breaking apart, most of the thrombi detached from the surface of vessel walls.¹⁵

“In conclusion,” the researchers wrote, “dietary natto-extracts supplementation suppressed intimal thickening produced by endothelial injury in rat femoral artery.”

Scientists have found that nattokinase has four times greater fibrinolytic activity than plasmin, an clot-destroying enzyme found naturally in the human body that is produced from the protein plasminogen.¹⁶

Human studies have produced similar results. In one study, 12 volunteers (six men and six women) were fed 200 grams (seven ounces) of natto, and two methods of measuring their blood's fibrinolytic activity were used. In the euglobulin clot lysis test, a blood sample was taken and the formation of a thrombus (clot) was then artificially stimulated. The time required for the blood to completely dissolve the clot was then measured. In the natto group, the time needed to completely dissolve the clot was cut in half compared to those in the control group.

The fibrin plate method was then used on other blood samples. In this test blood was added to a plate with a special polymerized fibrinogen to see how much it would dissolve in four hours. The control group's blood had no effect in this test, but the natto group's blood dissolved 15 mm² of fibrinogen.¹⁷

Next, the researchers had volunteers consume nattokinase tablets for eight days,

using the same two tests plus the fibrin degradation product test. They also measured tissue plasminogen activator (TPA) blood levels. These tests further confirmed nattokinase's clot-dissolving power, with the men showing an increase in TPA activity as well. While the researchers had previously shown that nattokinase had direct fibrinolytic activity, the finding of increased TPA activity (which increases plasmin) showed nattokinase to augment the body's own fibrinolytic activity.¹⁷

Nattokinase can be especially effective when combined with serrapeptase, an enzyme derived from the *Serratia* bacteria, which lives in the intestinal tract of silkworms. Hans Nieper, a pioneering medical doctor in Germany, became one of the first

“Nattokinase has four times greater fibrinolytic activity than the clot-destroying enzyme plasmin.”

clinicians to use serrapeptase to gradually reduce atherosclerotic plaque buildup. Other researchers have observed that serrapeptase “has been shown to induce intense fibrinolytic, anti-inflammatory, and anti-edemic activity...”¹⁸ Because inflammation elevates fibrinogen, and elevated fibrinogen increases clotting risk, serrapeptase's anti-inflammatory activity complements its fibrinolytic activity.

Turmeric (*Curcuma longa*) has exhibited equally powerful fibrinogen-destroying properties. Scientists in Spain treated eight subjects with elevated fibrinogen levels with 20 mg of turmeric extract per day. After only 15 days, previously elevated levels of fibrinogen dropped in all eight subjects.¹⁹⁻²⁰ A more recent review of turmeric's effects by the same researchers indicated that in human healthy subjects, a daily intake of 200 mg results not only in a decrease in lipid peroxidation, but also an antioxidant-induced normalization of the

plasma fibrinogen levels.²¹

In addition to lowering fibrinogen levels, turmeric is emerging as one of the most effective natural substances for lowering C-Reactive Protein, a risk factor for heart disease that becomes elevated in response to inflammation. When researchers induced inflammation in rodents, the level of C-Reactive Protein increased to 200 percent on day 21 and then fell to 50 percent on day 35 compared to controls not exposed to the inflammatory treatment. Curcumin, the pigment in turmeric responsible for its yellow color, further reduced the increased levels of CRP at both the time intervals.²²

Bacterial Origin of Heart Disease

Because a lot of the medical literature is now pointing to a possible infectious origin of heart disease, I wanted to briefly touch upon heart disease risk in patients whose cardiovascular concerns may be bacterial related. One of the agents shown to help in this group of patients is EDTA, the chelator I mentioned above. An interesting recent study indicates that EDTA, when combined with antibiotics and natural heart-supportive nutrients, can reverse calcification in coronary arteries in patients whose calcification may be pathogen triggered.

Recent reports in the medical literature suggest that infectious blood nanobacteria may serve as a trigger to begin the process of arterial calcification. Consequently, researchers enrolled 100 patients with stable coronary artery disease into a four-month study. The patients consumed a variety of substances, including vitamin C, niacin, folic acid, arginine, CoQ10, EDTA and hawthorn taken orally every evening. They also received an antibiotic every evening and rectal EDTA in addition to oral EDTA. Seventy-seven patients completed the study and all patients were positive for nanobacteria. In 44 of the subjects (57 percent), there was a significant decrease in total coronary artery calcium scores, the average decrease being 14 percent. Angina was decreased or ablated in 16 of 19 patients (84 percent). Lipid profiles significantly improved to non-atherogenic levels, a remarkable finding in a patient group where 86 percent were on continuous statin medication before the trial. No adverse physiologic effects were seen. The researchers concluded that their results

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CoQ10-H₂TM: A New, More Effective Form of Energy Catalyst for the Heart, Brain and Mitochondria

by Jeffrey Reinhardt, MSc

Throughout the years, researchers have extensively studied the antioxidant coenzyme Q10 for its ability to support heart and cognitive functions plus enhance mitochondrial production of ATP, the cellular energy molecule. However, just like with any nutritional supplement, the ability of the body to absorb coenzyme Q10 is critical to its effectiveness. Recently, a new breakthrough has revealed that the first generation of supplemental coenzyme Q10, called ubiquinone or CoQ10-Ox, while still absorbed by the human body to produce some benefits, isn't nearly as effective at increasing blood levels as its newer, more biochemically active, second generation form, CoQ10-H₂TM. This is important because increased blood levels help ensure that CoQ10 reaches important cellular sites.

Prior to the introduction of this new, reduced form, known as ubiquinol, individuals were often required to consume significant dosage levels of Co-Q10-Ox in order to achieve clinical benefits. With CoQ10-H₂, however, higher blood levels can be achieved with smaller doses, indicating that less is required to produce optimal results. Fifty to one hundred milligrams (50-100 mg) of CoQ10-H₂ yields higher blood levels, which produce prolonged bioenergetic and improved antioxidant benefits. As an example, individuals who are consuming 100 to 150 mg per day of the first generation form of coenzyme Q10 to replenish the depletion of this antioxidant caused by statin drugs, can now consume considerably less of the new CoQ10-H₂ and achieve the same therapeutic benefits with fewer side effects.

In next month's issue of *Vitamin Research News*, a leading expert on CoQ10-H₂ will delve deeper into the research conducted on this fascinating new form of one of nature's most important bio-energetic catalysts and powerful, fat-soluble antioxidants. In this article, I will review

some of the research that I mentioned in last month's article and address more of the reasons why I believe CoQ10-H₂ will become the preferred choice for physicians, nutritionists and patients who want to improve cardiac function, and increase vitality and longevity.

Better Absorption Equals Better Efficacy

The human body is continually recycling its cellular stores of coenzyme Q10. Before the introduction of CoQ10-H₂, this cycle was "primed" with the oxidized form of coenzyme Q10, known as CoQ10-Ox or ubiquinone because, obviously, this was the only form of CoQ10 available in supplement form. During biochemical transformations in the mitochondria, the body transforms CoQ10-Ox into the reduced form, CoQ10-H₂. It is, in fact, actually CoQ10-H₂ that the body uses to catalyze the synthesis of ATP in the mitochondria. In addition, in order for coenzyme Q10 to trap and inactivate free radicals, particularly the highly reactive hydroxyl radical (OH) and the superoxide radical (O₂⁻) to protect the integrity of the lipid membranes of cells and their mitochondria, it must first be changed into the reduced form, CoQ10-H₂. In both coenzyme Q10's primary mechanism of actions (the ability to catalyze the production of ATP in the mitochondria and to act as a fat soluble antioxidant), CoQ10-H₂ is more effective than the more extensively studied, oxidized form of coenzyme Q10, the only form available to clinicians, patients and health conscious consumers previously.

The emerging research documents the superior bioavailability of CoQ10-H₂ in animals and humans. A published single-blind, placebo controlled, four week study of healthy Japanese subjects has shown that CoQ10-H₂ was absorbed rapidly and efficiently from the gastrointestinal tract after oral administration. The Japanese

researchers reported that the benefits of reduced Coenzyme Q10, CoQ10-H₂, were attributable to the over 210 percent increase in blood levels of ubiquinol. This is a dramatic and therapeutically efficacious elevation when compared to the oxidized form of coenzyme Q10. Importantly, this study also revealed no abnormal laboratory values seen in blood chemistry panels or any other indications of clinically relevant safety concerns, as evidenced by the clinicians' assessments of adverse events related to higher dosages of CoQ10-H₂ up to 300 mg. per day.¹

Less is More?

One of the advantages to consuming this new, reduced form of coenzyme Q10, as CoQ10-H₂, may be that lower doses are required to achieve the same or improved responses. This is important because many of the clinical studies that have shown positive neurological effects actually used rather large doses of the first generation, oxidized form of CoQ10. For example, a 16-month randomized, placebo-controlled pilot trial in 80 subjects with mild Parkinson's disease found significant benefits for oral CoQ10-Ox at 1,200 mg per day. At this dose, oxidized coenzyme Q10 appeared to slow functional deterioration.² However, 1,200 mg per day is a substantial and expensive dose of this antioxidant; achieving similar benefits with a much lower amount of CoQ10-H₂ would obviously be ideal. It's likely that, although first generation coenzyme Q10 has demonstrated efficacy in supporting the health of patients with heart disease in many studies, the reason why some of the earlier coenzyme Q10 trials have not produced as dramatic a result as would be expected may be because the subjects were not absorbing enough of the 150 mg to 200 mg of oxidized CoQ10 used in these trials, to produce the blood levels of coenzyme

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Lectin Lock

Continued from front page

of what lectins are, including their digestive impact and effects on our systemic health.¹

- Lectins are a class of proteins that are found in common foods especially grains, seeds, beans, nuts, some fruits and vegetables, and seafood. They act as a sort of an immune system for plants by “sticking” themselves to the structural carbohydrates (sugars) of invaders. When we eat foods containing these proteins we risk lectin attachments to the structural carbohydrates (sugars) antigens found in the gut and

“Lectins affect metabolism by mimicking hormones like insulin.”

immune system. Our unique genetic make-up and the state of health will determine the lectins we are sensitive to and how we will react to them. It is important to note that many people will report that they do not feel any digestive disturbances but that does not mean that lectins are not affecting them. Lectin damage may be cumulative and show up as pathology years later. Lectin attacks in the gut initiate inflammation that may be expressed in other parts of the body. The fact that as humans we possess these cell surface sugars, such as n-acetylglucosamine, fucose, and mannose, and more, means that certain lectins that bind to those sugars will affect us all (but to different degrees). Also there are other genes that directly and indirectly affect how we deal with lectins.

- Lectins from the diet damage the delicate intestinal lining (the microvilli)

and negatively influence gut permeability (leaky gut) and protein digestion.

- Lectins are capable of being actively endocytosed (transported) across the intestinal membranes into the general circulation where they may attach to other tissues (connective, nervous, bladder) causing immune dysfunction and systemic inflammation.
- Lectins contribute to food sensitivities (or food intolerances) and may provoke the immune system to make antibodies against them.
- Lectins are chemical messengers potent enough to initiate and aggravate existing inflammatory conditions including autoimmune diseases (e.g. thyroiditis, lupus, rheumatoid arthritis, scleroderma, fibromyalgia, and pemphigus).
- Lectins affect metabolism by mimicking hormones like insulin and blocking digestive hormones like cholecystokinin (CCK), contributing to significant weight gain. Weight gain is not as easy as calories in-calories out. All of the hormonal influences on metabolism are affected by insulin. How your body metabolizes calories is controlled by insulin. Refer to the January article for more detail here.
- Lectins stimulate polyamines in the gut, which decreases the natural killer cell population and contribute to halitosis (bad-breath). Polyamines are endogenous growth factors that can stimulate growth in the digestive organs. According to animal studies, increases in the size of the intestines, pancreas and liver occurred when test animals were fed dietary lectins.

Symptoms of Lectin Sensitivities

Many of the common health problems that people complain of from day-to-day are related to the foods they consume. They do not often make the connection between how they feel and what they ate because often the reaction to food is not immediate and may appear over the course of several days. Lectin reactions are food intolerances and may cause true food allergies (Table 1).

Genetic individuality determines our recognition of food as friend or foe and

it is not based on the nutritional value of a food. For example, tomatoes contain lycopene, an important antioxidant, but tomatoes also contain a panhemagglutinin lectin (*Lycopersicon esculentum agglutinin*) that is not harmless. It lowers mucin, binds to blood cells, nerve tissue, and interferes with gastrin in the stomach creating problems in susceptible people. (Consider watermelon, guava and red grapefruit or a supplement to consume adequate amounts of lycopene.) The same is true of many foods. Foods like corn, dairy, chicken, peas, bananas, beans and legumes, soy, potatoes, pomegranate, nuts, cantaloupe, seafood, wheat, millet, and many more, although they contain a variety of very healthful nutrients, contain potentially dangerous lectins that can be a problem for some people.

A Natural Shield Against Lectins

Since lectins are so prevalent in the diet it was suggested in the first article that a supplement regimen be considered to reduce lectin interactions. Lectins have the ability to bind to sugar residues of

Symptoms of Lectin-Related Food Intolerances

- Headaches, brain fog, lack of concentration
- Skin problems such as acne, eczema, itchy skin
- Water retention (edema) and puffiness in face, extremities, under the eyes
- Bloating- a very common reaction
- Easy weight gain and stubborn weight loss
- Post-meal fatigue and chronic fatigue in general
- Excess mucous, chronic clearing of the throat
- Respiratory problems (asthma, chronic, non-infectious coughing)
- Joint stiffness and pain (especially in the morning)
- Urinary weaknesses, chronic urinary tract infection or cystitis
- Abdominal pain and gas with meals, excessive belching (lectins have also been shown to reduce HCL levels)
- Gastric reflux and stomach upset
- IBS, spastic colon, other intestinal irritation
- Hyperactivity especially in children
- Sinus problems, itchy nose (hayfever-like reactions), congestion and post-nasal drip
- Insulin shifts in blood sugar control

Table 1.

polysaccharides and amino sugars in the gut and on the intestinal cell surfaces. By consuming an array of these friendly sugar structures, which are part of our digestive makeup, then a type of decoy system is implemented in which “sacrificial” molecules are present to bind lectins and keep them from sticking to our cells and causing damage. The application of a lectin-locking device exists in a new product called Lectin Lock™. Supplementing with these decoy sugars at the start of a meal allows for the binding of potentially harmful lectins and their elimination through the gut. Besides the all-important lectin binding, the product supports health in numerous other ways.

Mucins, which have been called digestive gatekeepers, are a family of heavily glycosylated proteins that protectively line the digestive tract. Saliva contains mucin, which moistens and lubricates the food we eat. According to Wikipedia, the dense “sugar-coating” of mucins makes them resistant to protein breakdown, which may be important in maintaining mucosal barriers in the gut. Mucins protect against yeast, bacteria and food sensitivities. Mucin has lectin-binding capacity. It contains the sugars that lectins like to stick to including sialic acids.

N-acetylglucosamine (NAG), the very specific form of glucosamine that binds the disruptive wheat lectin called wheat germ agglutinin (WGA), is another important nutrient. NAG is a glycoprotein contributing to the total glycosylation of the human body, which plays an important role in body structure and biological functions like immune regulation, inflammation, and cell signaling. This particular form of glucosamine is the most effective for lectin-binding. One of NAG’s most interesting abilities is its tendency to suppress the anti-secretin effects of the lectin WGA. Secretin is a digestive hormone, which stimulates the pancreas to secrete pancreatic juice. The lectin WGA has been shown to inhibit secretin production by about 57 percent. However, administration of N-acetylglucosamine completely suppressed this effect.²

Binding or locking lectins that interfere with secretin may be particularly important in the management of autism. One abstract on secretin reported a study of three children with autism and GI problems who

were given an infusion of secretin and became more social and communicative.³

Another lectin-blocking substance is Bladderwrack (*Fucus vesiculosus*). This nutritious seaweed component makes several contributions. The particular fucose sugars found in Bladderwrack, called “fucoidins,” are capable of binding to lectins and also microorganisms such as viruses, bacteria and yeast. Fucose is a favorite sugar attachment site on the surface of cells for *Helicobacter pylori* (the bacteria responsible for ulcers and gastritis) and *Candida albicans*. Microbes like these must be able to attach and anchor themselves to cells in order to become a problem. Therefore, L-fucose becomes

“Binding lectins may be particularly important in the management of autism.”

an anti-attachment type of therapy. The fucose in Bladderwrack can bind not only to problem lectins but also to these two opportunistic pathogens, preventing their attachments and locking them up for elimination from the body. Supplementing with Bladderwrack reduces *H. pylori*, *C. albicans*, and harmful lectins, providing an example of selective therapy that doesn’t disrupt other balances in the GI tract.

Studies also have shown fucoidin’s antimicrobial effects against herpes simplex virus, human cytomegalovirus, human immunodeficiency virus (HIV), certain strains of *E. coli* and all strains tested of *Neisseria meningitidis*. Research and in vitro studies have provided evidence that fucose sugars have been found to prevent the initial HIV viral attachment to cells necessary for HIV infection. The same concept was used in studies of malarial spread through the red blood cells with the same conclusion. Thus fucose sugars inhibit the spread of these infections through selectively binding to the organisms so they can’t bind to the cells of the body. As a possible addition to conventional treatment, fucoidins offer an adjunctive support that

may improve clinical outcomes. Fucose sugars also support the immune system through enhancing phagocytosis (engulfing and destroying pathogens by white blood cells) and controlling inflammation. Bladderwrack has been shown to support thyroid function in boosting metabolism contributing to weight loss.⁴⁻¹⁷

Okra is a vegetable and a rich source of lectin-binding protective mucilage. It helps protect the digestive tract from lectins and harmful microorganisms. Like the other ingredients discussed in this article, it also helps remove existing lectins that are already attached to cells. It is a rich source of bioavailable calcium. Okra in combination with the proteolytic enzyme pepsin, may help to clear away excess mucous formed as a result of food intolerance or food allergy in the digestive tract thus allowing for better absorption of nutrients. Okra is often beneficial for ulcers, colitis, malabsorption, and other intestinal problems. It essentially helps to clean the intestine.

D-mannose is also a common binding sugar for lectins. It is capable of binding with the lectins in grains and other foods and also microorganisms as discussed in the January article on lectins.

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Customers’ Corner Supplement Index From pages 8-9

Product	Code
5-HTP	5765
ActiBiotic™	1690
Advanced Essential Minerals	1841
Advanced Inflammation Control	1625
AGEBlock™	1985
AndroAMP	7200
Boswellia Serrata	5041
Cranberry Concentrate	5091
DHEA	6381
D-Mannose Plus	5504
Essential Minerals	1871
Extension IQ	2193
GluControl™	1980
HerBalance™ Cream	2101
Iodine Test Kit	9137
Iodoral™	9139
John Lee’s Premenopause Book	9909
Lithium Orotate	7241
Natto 3x	6252
Oral ChelatoRx	1820
Pregnenolone	5712
Strontium	8731
Tribulus Terrestris	5561
Tryptophan	8901
Turmeric Extract	5102
UniZyme™	1630



CUSTOMERS' CORNER

by Ward Dean, MD
Medical Director

Antiphospholipid Antibody Syndrome

Dear Dr. Dean,

My wife has the antiphospholipid antibody syndrome with the lupus anticoagulant. She is 49 years old and the blood clotting disorder was found when she had a Deep Vein Thrombosis (DVT) three and a half years ago. She was on Coumadin® for 6 months at that time and hated it, so she has just been on 80 mg per day of aspirin since.

She developed another blood clot about a month ago, which they said was a DVT but is below the knee this time so not as serious. They gave her 10 days of Lovenox® and recommend lifetime Coumadin, but she is opposed to starting it again. After hearing about the clot-busting properties of *Nattokinase* she started taking it immediately after the course of Lovenox, and began at 4,000 units per day and then increased to 8,000 units per day for the last 2-3 weeks. However, an ultrasound a couple days ago shows the clot hasn't changed at all. Once a clot has formed, what do you recommend to dissolve it, and what would you recommend for her condition to try and prevent future clots? Should she increase the aspirin dosage? Thanks so much.

Mr. W.

Dear Mr. W.,

As you know, antiphospholipid antibody syndrome is an inherited hypercoagulable condition that frequently causes recurrent vascular thrombotic events. In addition to continuing *Nattokinase* and aspirin, I suggest that your wife add three grams per day of *Turmeric Extract*, and *Oral ChelatoRx* (start with three to six capsules per day, and increase gradually to a maximum of twelve capsules per day, depending on her bowel tolerance).

Turmeric Extract will lower blood fibrinogen levels (fibrinogen is the last factor in the clotting cascade), and *Oral ChelatoRx* contains EDTA, a very effective anti-coagulant. This combination is often very effective.

Ward Dean, M.D.

Bone Loss After Chemo

Dear Dr. Dean,

I was recently treated for Hodgkin's Lymphoma with a combination of chemotherapy and a course of radiation. I am concerned about bone loss as I have an active lifestyle that sometimes includes light-contact sports. I have read the similar entries to mine in the Dear Doc section suggesting *DHEA* and *Strontium* to help bone strength. Are there any other supplements you would suggest? Also, I have read on your website that one should avoid taking *Calcium* when consuming *Strontium*. Do you have any dietary suggestions (i.e. consumption, timing, etc.) for receiving adequate daily *Calcium* while maximizing the benefits from *Strontium*? Thanks.

Mr. L.

Dear Mr. L.,

The recommendation regarding avoiding *Calcium* when taking *Strontium* should specify "at the same time." There is some indication that taking *Strontium* and *Calcium* at the same time may impair their absorption. Therefore, it's best to take them separately.

Our mineral formulas, *Essential Minerals* or *Advanced Essential Minerals*, were based on the recommendations in Dr. Alan Gaby's book, *Reversing Osteoporosis*. They are specifically designed to help maintain bone density.

Ward Dean, M.D.

Increasing Testosterone

Dear Dr. Dean,

I am a 63-year-old male in good health. I have been taking *DHEA* and *Pregnenolone*, 50 mg of each, for several years. I was wondering if it is still safe to continue with these dosages. Is it a good idea to take both? I've read that taking at least 100 mg of *DHEA* would beneficially raise my testosterone levels. I would appreciate any insight on taking these two supplements. Thanks.

Mr. R.

Dear Mr. R.,

Yes, it is safe to continue taking *DHEA* and *Pregnenolone*. I think it's a good idea.

However, I don't know that you would obtain any additional benefit from boosting your *DHEA* dosage to 100 mg. I don't think the additional *DHEA* would do much to elevate your testosterone levels. *DHEA* is very efficiently converted to testosterone in women, and will definitely boost a woman's testosterone levels, but it doesn't have much effect in that regard with men.

Tribulus Terrestris, on the other hand, may boost testosterone levels, and restore testosterone receptor sensitivity (making what testosterone you do have more effective). *AndroAMP* also contains a number of ingredients that can promote healthy testosterone levels in men.

Ward Dean, M.D.

Urinary Tract Infections

Dear Dr. Dean,

My daughter has had continuous bladder infections since the age of 18 (she's now 24). The doctor told her she might have to have some kind of operation (she won't tell me all the details because she's scared). She has been prescribed something for the pain and antibiotics. Every two or three months the infection reappears. What can I give her? Please help!

Ms. P.

Dear Ms. P.,

She may be suffering from urethral reflux or some other surgically correctable condition. It would help to know more.

Nevertheless, I suggest that she begin a daily regimen of *Cranberry Concentrate* and *D-Mannose Plus*—both taken in doses as described on the bottles. In many cases, this combination is very effective in people with urinary tract infections. At the very least, it may reduce the frequency and severity of her infections and enhance the effectiveness of the antibiotics, should they be required.

Another supplement that is very helpful in UTI/bladder infections is *ActiBiotic*™.

Hope this information helps.

Ward Dean, M.D.

Hyperthyroidism

Dear Dr. Dean,

My 14-year-old son has hyperthyroidism. From all that I have read, the only protocol that will be followed will be either surgery, radiation, or anti-thyroid medications, none of which sound like healthy alternatives. Could *Iodoral*™ help him? I had him tested for thyroid antibodies and the test came out positive. If *Iodoral* could help him, what dosage would I begin with?

Thanks so much.
Ms. C.

Dear Ms. C.,

Of the three mainstream options you mentioned, I usually opt for carefully titrated antithyroid medication, using the old standard, propylthiouracil (PTU).

According to iodine expert Dr. Guy Abraham, hyperthyroidism, just like hypothyroidism, is caused by iodine deficiency. He has achieved success in hyperthyroid patients using *Iodoral*. In addition, one of our writers was diagnosed with hyperthyroidism (her thyroid hormone levels were through the roof when she was first tested). After taking *Iodoral*, her thyroid test came out normal. Consequently, if your son is iodine deficient, *Iodoral* may be of benefit. An Iodine Sufficiency Test would help determine if this is a factor and the proper dosage of *Iodoral* to consume.

Since his thyroid antibodies are positive, I also suggest one or more substances designed to counteract inflammation, such as *Advanced Inflammation Control*, *UniZyme*™ (a powerful combination of anti-inflammatory enzymes), *Turmeric Extract* and/or *Boswellia Serrata Extract*.

Hope these suggestions help.

Ward Dean, M.D.

Neurochemical Imbalances

Dear Dr. Dean,

I have abused several psychoactive substances in the past and as a result, large neurochemical imbalances have effectively impaired my memory, learning ability, focus/concentration and overall awareness. I usually feel hypnotized and like a zombie and my emotions are usually disconnected from me being aware.

I have been on antidepressants in the past and my condition is much better now, but still far from where I was

before my usage. Can you offer advice about neuro-supplements, neurotransmitter precursors, or anything that could help? Any feedback would be greatly appreciated. Thanks in advance!

Mr. L.

Dear Mr. L.,

Of course, knowing which neurotransmitter system is impaired would be helpful. Knowing which antidepressant resulted in your greatest improvement would also help.

The best combination cognitive enhancer is *Extension IQ*, which boosts acetylcholine and the dopaminergic neurotransmitters. On the other hand, if you were helped by an SSRI antidepressant like Prozac®, Paxil®, or Zoloft®, I suggest adding *5-HTP* or *L-Tryptophan*, as well. Another suggestion is to try *Lithium Orotate*. I would try these supplements one at a time, to see what works best for you.

Another substance that may help is L-deprenyl. Deprenyl acts by restoring dopaminergic receptor sensitivity. In case it is the dopaminergic system that has been “burned out,” this substance may also be of benefit.

Let me know how you do.

Ward Dean, M.D.

Ovarian Cysts

Dear Dr. Dean,

In my 20s I suffered from ovarian cysts and had several drained. The cysts stopped when I had my hysterectomy at the age of 33. My daughter, age 34, has now started experiencing ovarian cysts for the first time. She has had four pregnancies—3 viable (she has 3 children). Her gynecologist has determined that these cysts are functional: they come and go with her menstrual cycle. He does not want to do anything unless the cysts interfere with her daily functions. However, the cysts are painful and uncomfortable. Are there any products you can recommend that would help alleviate the formation of the cysts or the discomfort surrounding the cysts? She has an otherwise normal menstrual cycle and is in good health.

Thank you—we truly enjoy reading *VR News* and using your products.

Ms. T.

Ms. T.,

The “orthodox” method to prevent ovarian cysts is to prescribe oral contraceptives. However, many women obtain significant

relief of recurrent ovarian cysts by the addition of topical progesterone cream (*HerBalance™ Cream*). For an in-depth discussion on this topic, I suggest reading Dr. John Lee’s book, *What Your Doctor May Not Tell You About Premenopause*.

Also, the treatment of choice for the Polycystic Ovary Syndrome (PCOS) is the drug metformin, due to the link between PCOS and impaired insulin function. I think it may also help with isolated ovarian cysts as your daughter is experiencing. Consequently, I suggest she ask her physician for a prescription for metformin (500 mg two to three times per day). Alternatively, she could try *GluControl*™, which is similarly formulated to restore insulin sensitivity.

Hope these suggestions help.

Ward Dean, M.D.

Arterial Health

Dear Dr. Dean,

A test I recently took revealed that my arterial age is greater than 80. I am 65. What do you suggest I take and/or do?

Thank you.
Ms. G.

Dear Ms. G.,

If your “arterial age” is as stated, I recommend IV chelation therapy and/or oral chelation with *Oral ChelatoRx*. Start with two capsules per day, and increase the dose progressively, based on your “bowel tolerance,” up to a maximum of 12 capsules per day.

It would also help to know your lipid profile and your blood levels of fibrinogen and H6A1C. You might also consider *AGEBlock*™, with its powerful anti-cross-linkage ingredients, to help reverse your arterial biological age.

Two other suggestions are *Nattokinase* or *UniZyme*™, especially if your fibrinogen levels are elevated, as each of these supplements serve as fibrinogen-lowering agents and are known to improve arterial health. *Turmeric* is another powerful fibrinogen-lowering substance.

Ward Dean, M.D.

Be sure to visit the dear doctor section at www.vrppet.com where you'll find questions and answers like these about your pets. You can also ask questions at dearvet@vrppet.com

Libido Enhancement: Botanical and Hormonal Support for Increased Satisfaction

by Chris D. Meletis, ND

[Editor's Note: Dr. Meletis is author of the book *Better Sex Naturally*, published by HarperCollins.]

Low libido is a health concern most people are reluctant to discuss. Yet, it can take a huge toll on emotional health. For both women and men, not being able to perform at an optimal level can interfere with self esteem, the quality of relationships and outlook on life in general.

More than 10–20 million American men suffer from erectile dysfunction. This equates to approximately 1 man in 10, with that number becoming even larger by age 50, at which time, 1 man in 4 is believed to be affected.¹⁻² Such statistics are not as readily available for women, probably because of the previous lack of research into the field of female sexual response and the fact that it's harder to measure sexual parameters in females due to a less obvious external response. Yet, because the same mechanisms drive sexual response in both genders, logic and clinical practice suggests that, in females, the same principals of support prove to be as helpful as they are in men.

Despite the fact that erectile dysfunction and female libido issues increase with age, it is not a foregone conclusion that men and women must become less sexually active as they age. In fact, traditional healers and physicians around the world have long known there are many natural substances that can enhance sexual desire and function in both men and women of all ages.

This article will address libido in both men and women and offer botanical and hormonal support to help encourage a satisfying sex life.

The Male Libido

Leonardo Da Vinci was the first scientist to realize that during an erection the penis swells with blood. Da Vinci wrote, "The penis does not obey the order of its master, who tries to erect or shrink it at will, whereas instead the penis erects freely while its master is asleep. The penis

must be said to have its own mind, by any stretch of the imagination."³ Since then, researchers have determined the penis isn't quite as independently minded as Da Vinci observed 500 years ago, but is largely under the control of the central nervous system and both conscious and subconscious cues.

Nitric oxide plays a starring role in an erection. Sexual stimulation triggers excitatory signals in the brain, which causes the parasympathetic nerves to release nitric oxide (NO) gas directly and indirectly via endothelial cells in the penis. Nitric oxide acts as a chemical messenger by entering into smooth muscle cells lining the arteries of the spongy erectile tissue called the corpus cavernosum. This in turn triggers the activation of substances that cause smooth muscles of the penile arteries to relax, infusing more blood into the organ. When the corpus cavernosum of the penis fills with blood, the veins that normally drain blood from the penis compress. The additional blood creates added pressure, which squeezes the veins nearly closed, trapping blood within the corpus cavernosum and resulting in an erection.⁴

Because nitric oxide is the instigator of the male sexual response, finding natural substances that boost nitric oxide levels are often the focus of steps to enhance sexual satisfaction. In addition, preserving the health of the nervous system is important to generating sexual satisfaction. Before we take a look at natural substances that perform these roles, however, I would like to address the other side of the spectrum, the female libido.

The Female Libido

Although male sexual health is more widely studied due to the easily measurable external rate of response, sexual dysfunction in women is just as damaging to quality of life as it is in men. The female sexual response is driven by many of the same factors that govern male libido such as nitric oxide synthesis, proper blood flow and hormonal factors.

As the female body ages, both estrogen levels and testosterone levels decline. This affects the central nervous system as well as the sensory organs that are key players in environmental sexual stimuli. Prolactin increase may further inhibit libido.⁵ Therefore, enhancing both blood flow and hormonal health is integrally important to sexual satisfaction.

Possible Causes of Dysfunction

Before I discuss the ways that both men and women can improve their libido, it's important to address the causes behind sexual dysfunction. Indeed sexual dysfunction can serve as the barometer of ones overall health status since a healthy cardiovascular, neurological and mental wellness must all be present for peak performance.

First, a well-functioning sex drive depends upon neuromuscular health. Without optimal nervous-system health, nerve impulses are less than efficient in impulse transmission. Nerve impulses are important in the release of nitric oxide and proper functioning of the central nervous system is essential to sexual health in both genders.

Mental health also is extremely important to proper sexual function. In addition, prostate problems, chronic stress and the use of certain medications such as antipsychotics, antidepressants, anticholinergics, antihypertensives, and antihistamines can decrease libido.

Furthermore, there is a huge link between cardiovascular health and the libido in both genders. Scientists have hypothesized that unsatisfactory erectile function is a manifestation of atherosclerosis and that the common denominator between the two conditions is the endothelial L-arginine-Nitric oxide pathway.⁶ The fact that a reduction in nitric oxide bioavailability contributes to vascular changes in both conditions further cements the link between libido and cardiovascular health.⁶ This link makes sense because sufficient blood flow is required for optimal male and female sexual performance just as it is for heart health.

A number of studies have demonstrated an increased erectile dysfunction incidence in heart patients. Among men with ischemic heart disease, the prevalence of ED was approximately 75 percent.⁷ Researchers also established a connection between ED and the number of coronary vessels occluded on angiography.⁸ A study in females with coronary artery disease reached similar conclusions. Female sexual dysfunction was diagnosed in 12 of 20 (60 percent) CAD patients participating in the study, compared to only five of 15 (33.3 percent) of healthy female controls.⁹

Due to the diverse causes behind sexual dysfunction, anyone interested in enhancing their sexual well-being should consider participating in a four-pronged approach: 1) using the botanicals mentioned below to increase blood flow and improve nitric oxide synthesis; 2) improving central nervous system health; 3) balancing hormonal health with DHEA and testosterone-boosting supplements and 4) enhancing cardiovascular health. For more information on cardiovascular health, please see my article [*Cardiovascular Health: The First Component of Healthy Aging*] located in this newsletter. In this article, I will now address natural strategies to improve blood flow, nitric oxide synthesis and hormonal and central nervous system health.

Natural Libido Enhancers

One of the most effective natural libido enhancers is arginine. This amino acid is the precursor to nitric oxide, and consequently is vitally important to sustaining blood flow to the genitals. In both animal and human studies, arginine has improved erectile response, indicating that both penile erectile function and clitoral engorgement may be improved. It is also likely that arginine-enhanced pelvic circulation improves vaginal lubrication. Clinically, arginine has been effective in approximately 80 percent of cases in which increased circulation was needed to optimize sexual function.

In one uncontrolled trial, men with ED were given 2.8 grams of arginine per day for two weeks. In the arginine group, 40 percent of the men reported improvement, compared to none in the placebo group.¹⁰ A larger, double-blind trial studied 50 men with ED for six weeks. The subjects were administered 5 grams L-arginine per day or a matching placebo. There was a significant subjective improvement in sexual

Nutritional Support To Enhance Libido

Arginine	Human studies indicate improvements in erectile dysfunction and an increase in nitric oxide levels.
Ginkgo Biloba	Improved sexual satisfaction in both males and females with antidepressant-induced sexual dysfunction in several studies. Increases nitric oxide availability.
Tribulus Terrestris	Increased testosterone levels in rodents and primates. In women, decreased levels of the libido-destroying hormone prolactin.
Muira Puama	Improved erections and libido in male subjects.
Mucana Pruriens	Rich source of L-dopa, which is known to stimulate sex drive.
Panax Ginseng	Increases nitric oxide production. Produced a significant improvement in erectile parameters such as penile rigidity, girth, duration of erection, improved libido, and patient satisfaction.
Vitamin B12	Supports nervous system health.
DHEA	Low levels found in women with diminished libido and sexual dysfunction. Particularly effective in women with adrenal insufficiency. In men with erectile dysfunction, 50 mg of DHEA per day improved sexual performance.

function in 31 percent of the patients taking L-arginine. Researchers had noted low urinary nitric oxide excretion at baseline in all patients who reported subjective improvements at the end of the study. Nitric oxide concentrations had doubled by the end of the study.¹¹ Consequently, scientists have speculated that L-arginine may be the most effective in ED patients who have dysfunctional alterations in nitric oxide activity and reduced NO availability.

Ginkgo biloba is another circulation enhancer that has demonstrated some impressive results in patients with antidepressant-induced sexual dysfunction. Like arginine, ginkgo enhances blood flow by facilitating microvascular circulation, vasodilation, and smooth-muscle relaxation.¹² However, ginkgo's abilities go one step farther as it has potent antioxidant and vascular stabilizing effects as well. Its ability to enhance sexual satisfaction was discovered accidentally when male geriatric patients taking ginkgo for memory enhancement also reported improved erections. In these patients, researchers noted that impaired sexual function was a side effect of antidepressant medications.

Selective serotonin reuptake inhibitors, which millions of people use for depression, cause an elevation in serotonin, which causes a decline in nitric oxide synthase activity and starves the penile smooth muscle cells of the nitric oxide required to cause an erection. Ginkgo may mitigate the effects of SSRIs on sexual function by increasing NO availability as researchers have shown that ginkgo can increase NO synthase activity.¹³ In one four-week trial of ginkgo in 30 men taking antidepressants, the subjects were given 40 or 60 mg capsules of ginkgo twice per day, titrated up to 120 mg twice per day with an aver-

age dose of 207 mg per day. Ginkgo was 76-percent effective in alleviating symptoms related to all phases of the sexual response cycle in men, including erectile function.¹⁴ In another study investigating ginkgo's effects on antidepressant-related sexual dysfunction in both genders, 12 men and 12 women experienced significant improvement in sexual response after both three and six weeks of ginkgo use.¹⁵

Tribulus terrestris is another botanical commonly used to enhance libido. It has long been used in traditional Chinese and Indian medicine for various ailments and has been studied in animals with encouraging results. After conducting a study of tribulus terrestris in rodents, researchers concluded that "tribulus terrestris extract appears to possess aphrodisiac activity probably due to androgen increasing property of tribulus terrestris."¹⁶ They reached the same conclusion in both an earlier study on primates, where they found that tribulus increased testosterone in the animals, and another later study on rodents, leading them to conclude "The increase in intracavernous pressure which confirms the proerectile aphrodisiac property of tribulus terrestris could possibly be the result of an increase in androgen and subsequent release of nitric oxide from the nerve endings innervating the corpus cavernosum."¹⁷

Tribulus also is known to decrease levels of prolactin in women.¹⁸ An increase in prolactin is associated with reduced libido.

Another libido-enhancing botanical is muira puama. At The Institute for Sexology in Paris, France, a study of 262 men who were experiencing a lack of sexual desire and inability to attain or maintain an erection found that muira puama

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Libido

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(*Ptychopetalum guyanna*) enhanced both erectile-tissue response and libido. After 2 weeks of taking *Mucuna pruriens*, 51 percent of patients with erectile dysfunction improved and 62 percent reported increased libido.¹⁹ This effect also occurs consistently in clinical practice. In women, it would be reasonable to expect that the benefits would be comparable to those found in men.

Mucuna Pruriens, also a natural libido enhancer, is a rich source of L-dopa and, as such, has been studied as a possible substance that can improve the health of Parkinson's patients.²⁰ L-dopa is a treatment of choice for Parkinson's patients and the pharmaceutical drug source of L-dopa (levodopa) has been known to cause an increased sex drive. Therefore, although *Mucuna pruriens* has not been studied specifically for any potential libido-enhancing effects, the fact it is a source of L-dopa indicates it may have the ability to support a healthy sex life.

Panax ginseng relaxes smooth muscle and thereby increases circulation as well as nitric oxide production.²¹ The ginsenosides contained in ginseng have been shown to cause a dose-dependent relaxation of the corpus cavernosal smooth muscle in rabbits by increasing nitric oxide release.²²⁻²³ In one human study, 90 patients were divided into three groups and given Panax ginseng, a placebo, or trazodone orally. Frequency of intercourse, premature ejaculation, and morning erections after treatment were unchanged in all three groups. However, in the Panax ginseng group a significant improvement in erectile parameters such as penile rigidity, girth, duration of erection, improved libido, and patient satisfaction were reported. The overall therapeutic efficacy for erectile dysfunction was 60 percent for the Panax ginseng group but only 30 percent for the trazodone and placebo groups.²⁴

A more recent, double-blind, placebo-controlled, crossover study confirmed these results. Forty-five men diagnosed with ED received either 900 mg Panax ginseng or placebo three times per day for eight weeks. The first eight weeks of treatment were followed by a two-week

washout period, after which the patients switched groups—those who had initially received the placebo received ginseng and those who initially received ginseng received the placebo for an additional eight weeks. Researchers measured the efficacy of treatment through changes observed in indexes of erectile function, including the International Index of Erectile Function (IIEF). Mean scores on the IIEF for Panax ginseng were significantly higher than for placebo after eight weeks of each treatment. In addition, penile tip rigidity was significantly better after eight weeks of Panax ginseng compared to placebo.²⁵

The above natural agents can be combined with supplements to support nervous system health such as vitamin B12.

Hormonal Help

Another important factor to explore, when dealing with low libido, is hormonal health. Taking a salivary hormone test to determine whether low testosterone levels are a cause sexual dissatisfaction can determine whether natural hormone replacement is warranted. If so, DHEA can be used to help increase testosterone levels and improve libido. Researchers have found low levels of circulating DHEA in women with diminished libido and other symptoms of sexual dysfunction. DHEA appears to be especially effective in elevating sex drive in women with adrenal insufficiency.²⁶

In 40 men with ED and low DHEA levels, a double-blind, placebo-controlled study found that DHEA at a dose of 50 mg per day for six months improved sexual performance. Efficacy of DHEA was defined as the ability to achieve or maintain an erection sufficient for satisfactory sexual performance.²⁷

Conclusion

It is clear that ultimate sexual functioning depends on a strong and well-nourished body that provides the ability to attain or maintain an erection. Using the appropriate botanicals and natural hormones as well as addressing lifestyle factors that inhibit libido can help ensure that nearly everyone experiences the level of satisfaction they were meant to enjoy.

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Lectin Lock

Continued from page 7

Sodium alginate is a soluble fiber derived from seaweed and is resistant to digestion. It is fermented in part by the colonic bacteria to highly beneficial short-chain fatty acids including butyrate, which is a favorite food for the colonic epithelial cells that use these fatty acids for energy. Sodium alginate may have cholesterol-binding (lowering) and blood-sugar regulating properties. It is also used for detoxification. Sodium alginate is used in the treatment of GERD as it reacts with gastric acids to form a viscous gel called the alginate raft. This alginate raft floats on top of gastric contents and acts as a barrier to acid and food reflux.¹⁸⁻²⁰

In addition, the sugars in Lectin Lock encourage healthy bowel flora and enhance joint and synovial health. Supplementing your diet with these sugars also is a key component in achieving weight loss goals. As a general rule, lectins that bind D-mannose or N-acetylglucosamine increase the ability to store fat and decrease fat burning, while lectins that bind with fucose tend to reduce fat burning.

New Lectin-Blocking Supplement

The natural substances mentioned above, all contained in the novel new supplement Lectin Lock, help to protect against adverse reactions caused by lectins. Obviously, if you know that a particular food is a definite problem, using the natural agents contained in the supplement is not

an invitation to indulge freely on that food. However, Lectin Lock can help support the occasional cheating on the menu. Taken as 2 or more capsules at the start of a meal this product may be a valuable aid in:

1. Promoting weight loss through improved metabolism and energy
 2. Restoring proper water balance
 3. Achieving healthy joints, muscles, and organs
 4. Reducing inflammation (that lies at the core of chronic disease) and improving immune function
 5. Repairing the digestive tract and keeping it healthy
 6. Facilitating healthy detoxification in the liver and the gut
 7. Support with any meal but especially when eating out, when consuming junk food or fast food diets, and when highly processed and refined, prepared foods are eaten (many gums found in commercially processed foods can intensify the effects of dietary lectins, i.e., carageenan, acacia, guar, xanthan, arabic).
- Larch AG is a complementary product to Lectin Lock when gut repair and maintenance is the focus.

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PET CORNER

By Gary L. Ailes, DVM

Blood Sugar Control in Pets

Last month, I discussed the problem of obesity in pets. This month, I will address the topic of diabetes in pets as a natural continuation of my discussion on obesity.

Nearly all diabetes cases we see in pets are type 1 insulin dependent. This means the body requires an exogenous source of insulin since the pancreas is not producing enough. However, as pets age, even if they don't suffer from outright diabetes, they can become more insulin resistant and pre-diabetic.

The pancreas secretes insulin from cells that are called the islets of Langerhans. The insulin is secreted directly into the blood stream and the body uses that to move glucose into the cell to be processed for energy. When there is a deficiency of insulin, glucose builds up in the blood stream and is unusable by the body. This is what is called sugar diabetes.

This excess glucose creates many different problems. Just like in humans, the most common symptoms we see with our diabetic pets are weight loss, drinking excess

water, urinating in excess and eating more than normal. Later in the course of the disease, it is not unusual to see diabetic cataracts leading to blindness. However, in pets, we do not usually see the diabetic neuropathy or peripheral nerve dysfunction that is seen in diabetic people.

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Cardiovascular

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inferred that the combination of EDTA, the nutritional supplements listed above and antibiotics regressed the calcified coronary artery plaque volume.²³

It would be interesting to take this study one step farther and to research whether the EDTA and additional nutrients were able to achieve the same effects independently of the antibiotics. However, this study indicates that EDTA combined with the nutrients mentioned above as well as natural anti-infectious substances, may prove to be an additional modality to support arterial health.

Conclusion

Nourishing the health of the heart entails focusing on a number of factors including cholesterol, homocysteine, arterial calcification and blood clots, fibrinogen and C-Reactive Protein levels. Using a combination of the supplements mentioned above, along with omega-3 fatty acids and connective tissue nutrients such as vitamin C and bioflavonoids, will help address all these factors to ensure that as we age our cardiovascular systems remain as strong and healthy as possible.

CoQ10-H₂

Continued from page 5

Q10 required to produce a positive, clinical outcome.

One group of researchers, who reviewed the use of CoQ10 in congestive heart failure, ischemic heart disease, hypertensive heart disease, diastolic dysfunction of the left ventricle, and reperfusion injury after coronary artery bypass graft surgery, concluded, "The attainment of higher blood levels of CoQ10 with the use of higher doses of CoQ10 appears to enhance both the magnitude and rate of clinical improvement."³ CoQ10-H₂ can be expected to produce the higher blood levels required to produce these desired clinical improvements.

Conclusion

Coenzyme Q10 plays well documented roles in cardiovascular and mitochondrial health. Researchers have stated that,

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"Supplemental coenzyme Q10 alters the natural history of cardiovascular illnesses and has the potential for prevention of cardiovascular disease through the inhibition of LDL cholesterol oxidation and by the maintenance of optimal cellular and mitochondrial function."³ Coenzyme Q10 deficiency also has been observed in patients with congestive heart failure, angina pectoris, coronary artery disease, cardiomyopathy, hypertension, and mitral valve prolapse.⁴

Furthermore, coenzyme Q10 is a powerful, fat soluble antioxidant that mitigates the potential adverse consequences of free radicals produced in the inner mitochondrial membrane. The biochemical pathologies produced by oxidative stress result in depletion of glutathione and oxidant "nicks" in both nuclear and mitochondrial DNA, plus damage to proteins. This free radical mediated pathology has been implicated in many neurodegenerative

disorders, including Alzheimer's disease, Parkinson's disease and Huntington's disease.²

Although it is too early to state with absolute certainty, I feel confident that all previously published study outcomes and personal experience benefits provided by the first generation of supplemental coenzyme Q10, in its oxidized form, will be significantly superceded by the appropriate dosages of the new, stabilized CoQ10-H₂.

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Incontinence Is Common After Childbirth

A new doctoral thesis from Karolinska Institutet in Sweden has found that nearly a quarter of mothers suffer from exertion incontinence one year after childbirth.

To compile the thesis, titled *Women's Health After Childbirth*, postgraduate student and midwife Erica Schytt surveyed roughly 2,500 Swedish women. The subjects were asked to complete a series of questionnaires on physical symptoms after childbirth. The results indicate that most of the women exhibited at least one symptom for their entire first year, and that a quarter of them had five or more symptoms. Exertion incontinence was the most common complaint. A year after childbirth, 22 percent of the women were troubled by this condition.

Obese subjects, women who suffer from constipation, and subjects who have already had a child or who are older than 35 were at increased risk of developing exertion incontinence. Women who gave birth by caesarean were at lower risk. Other post-childbirth complaints included fatigue, headaches, and neck, shoulder or lower back pain. Pain from the caesarean operation, pain during intercourse and hemorrhoids also were common after two months, but these problems had stopped after a year in most of the women surveyed.

Reference:

<http://www.sciencedaily.com/releases/2006/12/061212213536.htm>

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Women who want to improve urinary tract health may want to consider using Vesteva™, a proprietary herbal and mineral formula that aids in bladder control.

Vitamin K Exerts Impressive Effects on Arterial Health

A new animal study has found that vitamin K may prevent calcification of the arteries.

Arterial calcification is generally regarded as an independent risk factor for cardiovascular morbidity and mortality. Matrix Gla-protein (MGP) is a potent inhibitor of arterial calcification and its activity depends on vitamin K2. In rats, inactivation of MGP by treatment with the vitamin K-antagonist warfarin leads to rapid cal-

cification of the arteries. Consequently, researchers decided to investigate whether a vitamin-K-rich diet can regress arterial calcification.

First, the researchers divided the rats into two groups, a control group with vitamin K added to the diet, and a group given warfarin, which induces arterial hardening in rats by acting as a vitamin K-antagonist. After six weeks of warfarin treatment, the rats showed signs of significant arterial hardening. For an additional six weeks, the study authors then further divided the rodents initially treated with warfarin into four groups: animals fed a standard diet plus warfarin, a standard diet plus vitamin K1 at normal dose (5 micrograms per gram of food), a standard diet plus high-dose vitamin K1 (100 micrograms per gram of food), or the standard diet plus high-dose vitamin K2 (100 micrograms per gram of food).

During the second six-week period, the calcifications in the warfarin-treated control group continued. The arterial calcification also continued in the normal dose vitamin K1 group, indicating that vitamin K1 received from the diet in normal amounts had no effect. By contrast, in both groups that consumed high doses of vitamin K1 and K2 arterial calcium content declined by about 50 percent. Additionally, arterial distensibility (elasticity of the blood vessels) was restored by the vitamin-K-rich diet. The high-vitamin-K diet not only prevented calcification in the animals but also regressed existing arterial calcification. Furthermore, by measuring antibodies for MGP (Matrix Gla-protein, a potent inhibitor of arterial calcification) researchers determined that local vitamin-K deficiency was demonstrated at sites of calcification.

The fact that the vitamin K2 concentration in the tissues of both high-dose groups was similar indicated that vitamin K1 was converted into vitamin K2 when consumed at these higher doses.

The researchers concluded, "This is the first study in rats demonstrating that arterial calcification and the resulting decreased arterial distensibility are reversible by high vitamin K intake."

Reference:

Schurgers LJ, Spronk HM, Soute BA, Schiffrin PM, Demey JG, Vermeer C. Regression of warfarin-induced medial elastocalcinosis by high intake of vitamin K in rats. *Blood*. 2006 Nov 30; [Epub ahead of print].

Omega-3 Fatty Acids Decrease Anxiety in Substance Abusers

A new study has found that omega-3 fatty acids found in fish oil decrease feelings of anxiety in substance abusers, adding to the mounting evidence that fish-oil-derived fatty acids can improve well-being.

Past studies have shown that omega-3 fatty acids have a role to play in alleviating depression and that their deficiency is associated with bipolar disorder. Preclinical studies also have shown that omega-3 fatty acids decrease anxiety-like behaviors. Because there is a strong association between anxiety disorders and substance use disorders and because substance abusers have poor dietary habits, researchers investigated the theory that omega-3 supplements would decrease anxiety in a group of substance abusers.

In the three-month, randomized, double-blind trial, researchers gave 13 patients capsules containing 3 grams of omega-3 fatty acids (eicosapentaenoic acid plus docosahexaenoic acid) per day. Eleven patients received placebo capsules.

At the study's start and on a monthly basis thereafter, the researchers administered a scale assessing anxiety feelings. Six patients consuming the omega-3 supplements and 8 placebo group patients were followed for an additional three months after treatment discontinuation and administered the same questionnaire monthly.

Subjects who received the omega-3s for three months showed a progressive decline in anxiety scores. This same improvement was not noted in the placebo group. A comparison of the two groups showed that there was a significant difference between those taking the omega-3s and the subjects taking the placebo. Furthermore, for three months after treatment discontinuation, anxiety scores remained significantly decreased in the omega-3 group.

"In conclusion," the researchers wrote, "these preliminary data indicate that n-3 [omega-3 fatty acid] supplementation could be beneficial in the treatment of some patients with anxiety disorders."

Reference:

Buydens-Branchey L, Branchey M. n-3 Polyunsaturated Fatty Acids Decrease Anxiety Feelings in a Population of Substance Abusers. *Journal of Clinical Psychopharmacology*. December 2006;26(6):661-665.



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