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August 2012

Protect Against Deadly Arterial Calcification

Who Really Makes
Popular Dietary
Supplements?

How Calcium May Cause Heart Attack

Suppress
Cravings for
Sugary Snacks



PLUS-

Doctors Overlook Most Thyroid Disorders Profile of Bioidentical Hormone Pioneer Multiple Benefits of Pycnogenol®



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The difficulty has been that hyaluronic acid is a large molecule not well absorbed by the body. When combined with krill oil, it has been shown to reach significantly *higher* levels in the bloodstream than in standalone form.⁸

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JUST ONE SOFTGEL DAILY

The suggested daily serving of <u>one</u> **Krill Healthy Joint Formula** softgel daily supplies **353 mg** of this proprietary blend.

A bottle containing <u>30</u> softgels of **Krill Healthy Joint Formula** retails for \$32. If a member buys four bottles,

the price is reduced to **\$21.75** per bottle. Just <u>one</u> softgel a day of **Krill Healthy Joint Formula** duplicates a successful human clinical trial.

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Pycnogenol®, a plant extract from the French Maritime pine tree, has been shown to modulate five major mechanisms of aging. Laboratory results demonstrate significant improvements in skin elasticity, blood glucose, cellular function, and capillary health with the use of this broad spectrum phyto-compound.



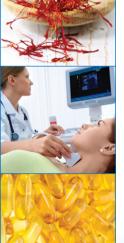
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Snacking can easily sabotage any weight loss program. Studies indicate that **saffron extract** targets food compulsions in the brain at the neurotransmitter level. Research has shown that saffron extract can safely inhibit the snacking impulse and block the increased appetite for food known as reactional hyperphagia.



68 DON'T OVERLOOK YOUR THYROID

The thyroid affects every cell in your body and is a key regulator of your energy, metabolism, and body weight. Too frequently, physicians overlook a malfunctioning thyroid as a cause for fatigue, lack of concentration, and even hair loss! Eva Cwynar, MD, explains why it is essential to test your thyroid, especially as you age.



accelerate skin aging and collagen destruction. Scientists have discovered that topical application of the gamma tocotrienol form of vitamin E regulates gene signals in the skin to reduce common causes of skin deterioration.



PROTECT AGAINST DEADLY ARTERIAL CALCIFICATION

and WHO REALLY MAKES **YOUR VITAMINS?**

A recent study showed that calcium supplements (by themselves) may increase heart attack risk. Omitted was data showing that magnesium and vitamin

K2 prevent cardiovascular disease by shielding soft tissues against deadly calcification. Find out who makes the most popular supplements in America and how these poorly designed formulas can accelerate occlusion of arteries in the heart and brain.





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Blueberries and strawberries delay cognitive aging; resveratrol reduces cardiovascular risk: testosterone linked to weight loss in obese men; apigenin slows progression of breast cancer and more.



As founder of the Bioidentical Hormone Initiative, Erika Schwartz, MD, educates physicians from around the globe on the multiple benefits and correct usage of bioidenticals despite the onslaught of money and opposition from pharmaceutical companies.



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Potential Danger of Calcium Supplements



BY WILLIAM FALOON*



One reason I find life so addicting is that virtually every week, new findings either confirm or contradict scientific positions *Life Extension*® has taken over the past 32 years.

A study published in May 2012 showed that **calcium supplements** may <u>increase</u> risk of cardiovascular disease. This study tracked almost 24,000 Europeans and suggested (in a subgroup analysis) that people taking *only* **calcium supplements** were about <u>twice</u> as likely to have a **heart attack**.¹

We carefully examined this report and found multiple design flaws that clearly skewed the results. But for the purposes of this editorial, I am going to assume this finding is accurate and explain how to protect against deadly calcification processes.

Later in this piece, I'll reveal startling information as to who really makes the most popular dietary supplements in America.

^{*} As I approach **58** years of age, I am taking even more aggressive steps to slow my rate of aging, like reducing calorie intake and getting in a bit more physical activity. I recently shaved my moustache to modernize my appearance for some TV shows scheduled later this year.

Calcium Should Not Be Taken By Itself

Those involved in nutritional medicine have long known that people who supplement with calcium should also take adequate amounts of magnesium. The reason is that magnesium is a natural calcium channel blocker.2

Magnesium deficiency can induce elevation of intracellular calcium concentrations, and accelerate atherosclerosis.3 Calcium is a component of atherosclerotic plaque and when calcium salts build up in soft tissues it causes hardening, which is technically called calcification.

Exposure to excess amounts of calcium over time, without adequate magnesium sets the stage for endothelial dysfunction and formation of atherosclerotic plaque.3-7

We have published an overwhelming number of articles about the importance of magnesium. I'll never forget when the FDA raided us at gunpoint in 1987 and seized literature we published stating that nutrients like fish oil and magnesium prevent heart attack. They ridiculed the notion that nutrients had any effect on disease risk. That day the FDA had the upper hand and seized our property under the pretext that we were promoting "unapproved drugs" since the FDA did not recognize any health benefit to supplements like magnesium and fish oil.

We later sued in Federal Court and won everything back, along with a small check from the US Treasury that covered some of our legal costs.

Magnesium Deficiency Contributes To Vascular Disease

If calcium supplements do increase heart attack and stroke risk, a lot has to do with magnesium deficiency. The US Department of Agriculture admits that 57% of the American public suffers inadequate magnesium intake.8 The reality is an even higher percentage of Americans are not getting optimal amounts of magnesium. Too bad the FDA

forcibly suppressed the dissemination of information about magnesium, while another department of government (Department of Agriculture) warned of an epidemic magnesium deficit.

If a person takes high amounts of calcium without magnesium, they may very well be accelerating the occlusion of arteries in their heart and brain.3-7

Despite threats of incarceration, we and others have repeatedly advised people to supplement with lots of magnesium. We have fortified many of our supplements with extra magnesium, causing some members to call and ask why so much magnesium and so little calcium? Our answer is that most fail to get enough magnesium to protect against vascular disease, whereas more calcium can readily be obtained from dietary and supplement sources.

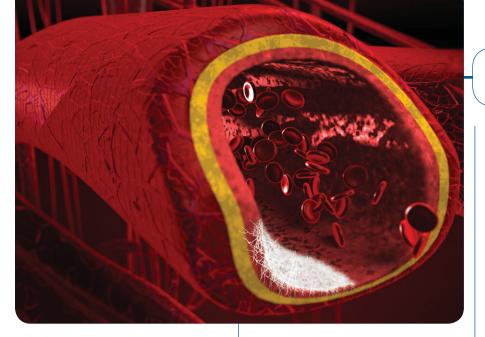
Assuming that excess calcium intake without regards to magnesium intake may increase heart attack and stroke risk, this may indeed validate what Life Extension® has long espoused about the critical need to balance calcium and magnesium.

Dangers Of Insufficient Calcium

Let's not forget that insufficient calcium intake will cause bone loss leading to osteoporosis and life-ending fractures.9

In fact, insufficient calcium itself accelerates atherosclerosis by causing excess removal of calcium from bone into the bloodstream where it calcifies arteries. 10 For example, in validated models of atherosclerosis, calcium-deficient diets increase the rate of tissue calcification by 170% while calcium-supplemented diets reduce calcification by 62%.10





The take home message is to ensure sufficient ingestion of **calcium** and **magnesium** and as you'll read next—**vitamin K2**. Regrettably, the majority of aging women still take **calcium supplements** with <u>no</u> **magnesium** or **vitamin K2**, thus setting the stage for arterial calcification and subsequent heart attack and ischemic stroke.¹²⁻²⁰

Vitamin K2 Keeps Calcium Out Of Arteries

Calcium is so essential that if blood levels fall too <u>low</u>, you will die from an electrolyte imbalance that causes your heart to lose contractile rhythm needed to circulate blood.

Remember there are four chambers to your heart that have to precisely expand and contract or your heart will not beat in a stable manner. Electrolytes are minerals such as potassium, magnesium, and calcium that are needed to maintain the heart's electrical synchronicity.

Adequate calcium is so critical that your body has evolved mechanisms to saturate your blood with calcium if there is even a perception of calcium deficit. In the presence of low calcium, parathyroid hormone is secreted that often pulls too much calcium from bones.²¹ The downside to this as

we age is our arterial walls can become infiltrated with calcium (i.e. **calcification**).

Fortunately, nature has developed a protective mechanism to keep excess calcium <u>out</u> of your arteries. For this important mechanism to function, **vitamin K2** is required. The problem is that our diet provides little vitamin K2 and the result is that virtually <u>all</u> aged people suffer **calcification** of their brain, glands, heart valves, and arteries.

Published data about the ability of **vitamin K2** to protect against cardiovascular disease is compelling. For instance, people with higher intake of vitamin K2 intake have a **57**% <u>reduction</u> in risk of dying from cardiovascular disease. Those with blocked arteries and damaged heart valves show <u>low vitamin K2</u> status. Women taking **vitamin K2** have reductions in nonvertebral **fractures** as high as **81**%. The protection of the protection of

The reason vitamin K maintains bone density while simultaneously

AS WE SEE IT

protecting against atherosclerosis is that it activates factors in bone to grab and retain calcium while functioning as a lock in the arterial wall to keep calcium out.^{15,28-32}

To explain this further, just imagine a set of **calcium-regulating proteins** in your arteries that determine whether calcium is allowed in or kept out. If these proteins are <u>locked</u>, they won't allow calcium to enter arterial cells. If the proteins are <u>unlocked</u>, calcium freely flows into cells and destroys them.

The **key** to turning on calcium-regulating proteins in the body is **vitamin K2**. If enough K2 is present, these proteins <u>prevent</u> calcium infiltration into soft tissues.³³⁻³⁷ (The name of this vitamin K-dependent calcium-blocking protein in arteries is *matrix Gla protein*).

Bones contain a protein called **osteocalcin** that functions like studs in a house. When activated by **vitamin K2**, osteocalcin grabs on to calcium and holds it in place. Without adequate K2, osteocalcin is not sufficiently activated, which results in calcium leaving bone and depositing into arteries. 24,34,45-47

Life Extension first issued an urgent warning about the lethal risks of vitamin K deficit in 1999. I regret we did not discover this sooner as I know of members (including my own father) who perished from systemic calcification brought on by lack of vitamin K2.

EFFECTS OF HIGHER INGESTION OF VITAMIN K¹⁷

Reduction in All-Cause Mortality
Reduction in Severe Aortic Calcification
Reduction in Coronary Artery Disease

26%

52%

57%

Vitamin K And Magnesium Remain Overlooked Nutrients

The ability of **vitamin K2** to <u>activate</u> calcium-regulating proteins, and thus maintain bone density <u>and</u> inhibit calcification is undisputed, yet the majority of aging Americans do not supplement with vitamin K2. This is slowly changing as word spreads about the critical importance of this overlooked nutrient.

Regrettably, knowledge about the benefits of **calcium** in protecting against **osteoporosis** has been widespread for over **30 years**, and the result is that aging women have been gobbling down large potencies of **calcium supplements** without concurrently taking **magnesium** and **vitamin K2**.

So it is not surprising for a study to show higher rates of heart attacks and stroke in those using calcium supplements without also taking magnesium and vitamin K. We at *Life Extension* warned of this risk long ago, yet few outside our membership paid attention. The tragic result may have been revealed in this recent study showing higher heart attack risk in calcium supplement users.

Drug Companies Sell Most Dietary Supplements

Health conscious people may be **shocked** to learn that the most popular dietary supplements are <u>not</u> made by people dedicated to keeping you alive.

Commercial supplement sales are dominated by **Centrum®** (made by a division of **Pfizer**) and **One-A-Day®** (made by a division of **Bayer**). These companies do not care about your health or lon-

gevity. This has been proven over and over as pharmaceutical companies face criminal charges for selling drugs they knew would kill human beings!

As we reported two years ago, **Pfizer** pled guilty (through a shell company) to a criminal charge that it fraudulently promoted the drug Bextra® in dangerously high doses to relieve acute surgical pain. Bextra® was never approved for this use.⁴⁸ In an analysis presented at the American Heart Association, Bextra® was shown to more than double the risk of heart attack or stroke.49,50 Pfizer paid a record-breaking criminal settlement to the federal government of \$1.195 billion for the fraudulent marketing of Bextra®.51,52 By using a subsidiary to plead guilty, Pfizer continues receiving lucrative Medicare/Medicaid reimbursement on its many other drugs.53

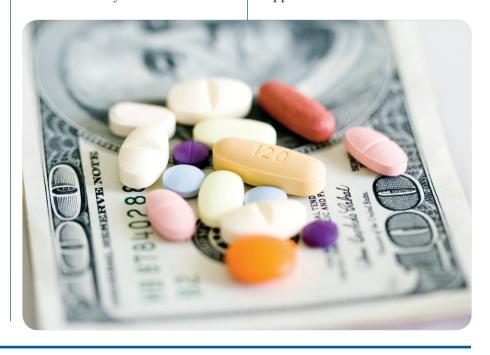
An article I wrote last year titled "FDA's Most Heinous Drug Approval" described how Bayer covered up the lethal side effects of a drug it made called Trasylol[®]. ⁵⁴ By delaying the withdrawal of Trasylol[®] from the mar-

ket, Bayer caused the deaths of 1,000 human beings a month.⁵⁵ Experts estimate that had **Bayer** not <u>hidden</u> findings about the dangers of Trasylol®, that **22,000 lives** could have been spared.⁵⁶

Would you trust **dietary sup- plements** sold by **Pfizer**, **Bayer**,
or other pharmaceutical giants
who financially benefit if you fall
ill? Their track record shows a
complete disregard of moral legitimacy. The scary part is that large
corporations are increasingly
dominating the dietary supplement marketplace by buying up
name-brand vitamin companies.

Small Vitamin Companies Gobbled Up By Corporate Behemoths

As the public discovers the disease-preventing properties of nutrients, large corporations realize they have fallen behind the curve. A look at the primitive formulations of **Centrum®** and **One-A-Day®** provides a stark example of what happens when drug companies try to make effective dietary supplements.





A disturbing trend has been corporate giants buying out venerable supplement companies like the recent purchase of New Chapter by Proctor and Gamble⁵⁷ (world's largest consumer products company) and Alacer (maker of Emergen-C® effervescent vitamin C) bought out by Pfizer (world's largest drug company).58

Proctor and Gamble who makes Tide laundry detergent and Pringles potato chips will soon be bringing you supplements under the New Chapter brand (a frequent advertiser in this magazine). There is no need to panic, since the founders of New Chapter will stay on for a while and it will be run for now as an independent subsidiary of Proctor and Gamble. That usually works until the corporate cost-cutters come in to find ways to earn more money from their acquisition.

Solgar⁵⁹ was once a bedrock of nutritional credibility, but was purchased by NBTY (formerly known as Nature's Bounty), which then sold to private equity giant Carlyle Group in 2010 for \$4 billion.60 (NBTY bought out a number of vitamin companies before selling itself to Carlyle Group—a conglomerate that invests in businesses as diverse as automotive, real estate, energy, and defense contracting).

GNC had its founding in 1935 as a small health food store in Pittsburgh.61,62 It grew to become the largest vitamin retail chain in the world. In 1999, Dutch company **Royal Numico** purchased GNC at a premium.63 In 2003, Numico sold GNC at a huge loss to privateequity firm Apollo Management.64 In 2007, Apollo sold GNC to an affiliate of the Ontario Teachers' Pension Plan.65 In April 2011, GNC launched a successful initial public offering and became a publically traded corporation again.66

As you'll read next, large corporations lack the agility, expertise, and commitment to enable humans to stave off aging-related disease.

Pharmacy Chains Don't Care If You Live Or Die

Displayed prominently at the check-out counter when you walk in to most Walgreen's or CVS stores is a tall wall of tobacco products. These large pharmacy chains offer all kinds of packaged junk foods, toxic OTC drugs like acetaminophen, and of course any side-effect prone prescription drug your doctor may have been duped into prescribing.

We have previously written about the immorality of openly selling cigarettes since it provides nicotine addicts with an easy opportunity to continue or resume their lethal habit. An argument could be made to organize

boycotts against pharmacy chains until they stop selling cigarettes. The sad fact is that the public has become far too apathetic for this kind of boycott to succeed in removing tobacco products from pharmacy shelves.

The typical consumer trusts the private label brands of pharmacy chains and even supermarkets, vet these corporate behemoths lack the scientific integrity to make state-ofthe-art nutritional formulas.

To give you a startling example of how poorly formulated products made by pharmacy giants are, look at a fiber product made by Walgreen's. It has an attractivecolored label, a healthy sounding name "Wal-Mucil 100% Natural Fiber" and a low price of just \$10.99. There is even a health claim on the side panel stating that the fiber in this product may reduce risk of heart disease.

You may recall that the primary benefit of fiber taken before meals is to slow the absorption of carbohydrates into the bloodstream, or stated differently, to reduce dangerous after-meal blood glucose surges that cause heart attacks and strokes.



Now hold on to your seat as you find out what's really in Walgreen's fiber supplement. One of the top ingredients in this **fiber** product is table sugar (sucrose). Each serving provides 3 grams of sugars and only 3 grams of fiber.⁶⁷ Those seeking to use Walgreen's fiber to prevent diabetes and vascular disease would inadvertently increase these risks by using-according to the label—a "Dietary Fiber Supplement."

Life Extension and other quality supplement companies have long made fiber products that do not contain **sugar.** Walgreen's may or may not have known about the dangers of excess sugar consumption. What we know is that sugar is a cheap filler ingredient and it made their product taste good. Walgreen's was either oblivious or didn't care that their fiber product would inflict serious health problems on someone who regularly used it.

I directly learned almost 20 years ago that these pharmacy giant's only concern is the financial bottom line—not their customer's health. As the first organization to launch melatonin, we were besieged by calls from pharmacy

chains after prestigious mainstream doctors began endorsing it. Back in those days we were the only ones able to make virtually 100% pure melatonin. The best our competition at the time could do was 98% purity. Pharmacy chains who called us were only concerned with the cost and whether we had product liability insurance.

One of these companies I talked to complained we were slightly overpriced. I warned that the 2% impurities in our competitor's product might cause a health risk analogous to contaminated tryptophan (since the biosynthesizing processes were similar). I will never forget when a major pharmacy chain representative told me:

"We don't care about the quality of the ingredient. Our only concern is lowest price and whether you have product liability insurance to cover lawsuits that might be filed if your ingredient harms someone."

Life Extension® seldom carries product liability insurance (because of the confidence in our ingredients) and 100% melato-

nin cost more to make than 98% material, so we never benefited in a major way financially from an ingredient (melatonin) that we were the first to introduce.

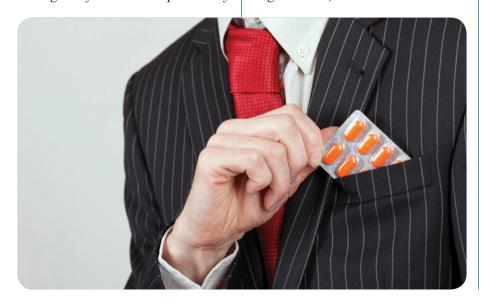
Based on my direct interactions with pharmacy chains, they don't care if you live another day, while I will feel perpetually guilty for not identifying the disease-preventing properties of vitamin K before 1999.

Why We Are Different...

Life Extension® has been, and continues to be structured as an entity that will fund biomedical research in perpetuity. We will not sell out to large corporate interests and our mission to indefinitely extend the healthy human life span will not alter.

How can we assure this? Each year, we fund a scholarship program that brings the most committed life extensionists under age 31 to South Florida. Through a meticulous screening process, we identify incredibly bright young people who are determined to vanquish aging, disease, and death. We enlighten these young life extensionists as to what we expect of them when it comes to their participation in fraternal organizations that will forever ensure that Life Extension® continues its unwavering scientific commitments.

Each year, we also support a long weekend meeting of some of the wealthiest and enlightened individuals on the planet who, like the under age 31 group, are also personally determined to vanguish aging, disease, and death. These individuals have the option of joining perpetual oversight organizations that will forever ensure that Life Extension® continues its biomedical research initiatives.



These arrangements to fund lifesaving research are irrevocable and permanent. Professional trustees are in place to guarantee that these provisions are not changed. So you will not hear that Life **Extension** has sold out to **Pfizer**. Bayer, Proctor and Gamble or any other company whose sole purpose is to make money.

No one in history has done what we have to safeguard a benevolent mission. As a member of the Life Extension Foundation®, you help support a historic undertaking to overcome the absurdly short life spans that currently afflict the human race.

For longer life,



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Brain degeneration affects all aging adults. Enhancing communication between neurons may hold the key to maintaining youthful cognition and memory.

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Uridine-5'-monophosphate (UMP) is a compound naturally found in the milk of nursing mothers and is essential to humans when their brains are the youngest. UMP also supports superior cognitive function in aging adults and is included in **Cognitex**®.

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Wild blueberry extract is included to protect against free-radical damage, and **pregnenolone** has shown beneficial properties as well.

In order to protect against inflammation to a healthy brain, a **proprietary NeuroProtection Complex Blend** contains standardized extracts of hops, ginger, and rosemary—all known to help suppress imflammatory cytokines.

With a healthy brain in place, the proper levels of *acetylcholine* are needed to enable brain neurons to communicate. To maintain these levels, Cognitex® includes **alpha-glyceryl phosphoryl choline** to boost acetylcholine and **Sensoril® ashwagandha extract** to inhibit an enzyme that degrades acetylcholine in the aging brain.

The retail price for 90 softgels of **Cognitex**® with NeuroProtection Complex (with or without pregnenolone) is \$74 (item # 00922) and \$72 (item # 00921), respectively. If a member orders four bottles of either version, the price per bottle is reduced to just \$49.95 and \$48, respectively.

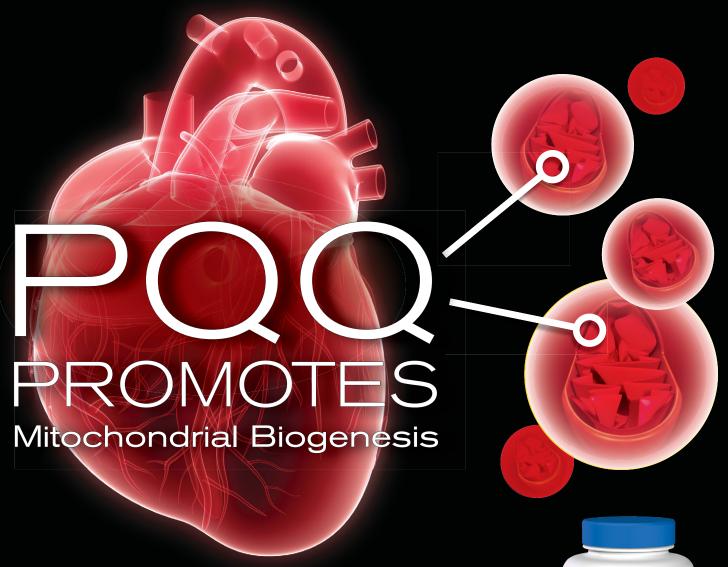
To order Cognitex® with NeuroProtection Complex, call 1-800-544-4440 or visit www.LifeExtension.com

Caution: If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

Perluxan® is used with permission. Sensoril® is protected under US Patents Nos. 6,153,198 and 6,713,092, and is a registered trademark of Natreon, Inc. Sharp-PS® GOLD is a registered trademark of Enzymotec Ltd. US Patent No. 7,935,365

Contains fish (wild herring, blue whiting), soybeans



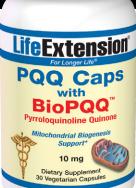


Critical Importance of Mitochondria

Back in 1983, **Life Extension**® was the first to introduce **CoQ10** as a proven method to enhance **mitochondrial** energy production.

CoQ10 has since gained universal recognition for its role in supporting cellular performance throughout the body.¹⁻⁶

In an unprecedented breakthrough, a compound called **PQQ** (pyrroloquinoline quinone) has been shown to support mitochondrial biogenesis—the spontaneous generation of **new mitochondria** in aging cells.⁷ **PQQ** is available as a low-cost dietary supplement.



Item #01500

Mitochondria are cellular energy generators that supply virtually all the power your body requires for a healthy life span. An abundance of published studies underscores the critical importance of the *mitochondria* to <u>overall</u> health, especially as we age.⁸⁻¹⁴ Energy-intensive organs like the heart and brain are *dense* with mitochondria.

Until recently, the <u>only</u> natural ways for aging individuals to increase the number of mitochondria in their bodies were long-term calorie restriction or exhaustive physical activity—which are difficult or impractical for most people to implement.

PQQ offers a viable alternative.

The Ultimate Cell Rejuvenator

The enormous amount of energy generated within the mitochondria exposes them to constant free radical attack. The resulting *mitochondrial decay* is a hallmark of aging.

PQQ protects and augments delicate mitochondrial structures to promote *youthful* cellular function in **three** distinct ways:

- Antioxidant power. Like CoQ10, PQQ is a highly potent antioxidant. Its extraordinary molecular stability enables it to facilitate thousands of biochemical reactions in the mitochondria, without breaking down, for maximum antioxidant and bioenergetic support.¹⁵
- Favorably modulates gene expression.
 PQQ activates genes that promote formation of new mitochondria⁷—and beneficially interacts with genes directly involved in mitochondrial health. These same genes also support healthy body weight, normal fat and sugar metabolism, and youthful cellular proliferation.¹⁶
- Mitochondrial defense. Mitochondria possess their own DNA, distinct from the DNA contained in the nucleus. Unfortunately, compared to nuclear DNA, mitochondrial DNA is relatively unprotected. PQQ's antioxidant potency and favorable gene expression profile act to <u>support</u> mitochondrial defense.

Vital Protection for the Aging Heart and Brain

PQQ is an **essential nutrient**, meaning your body cannot make it on its own. A growing body of research indicates that PQQ's unique nutritional profile supports heart health <u>and</u> cognitive function—alone <u>and</u> in combination with CoQ10.^{17,18} This comes as no surprise, given how much energy these vital organs need.

Research shows that **PQQ** supports **heart cell function** in the presence of free radicals and promotes blood flow in heart muscle.¹⁹

When taken in combination with **CoQ10**, just **20 mg per day** of **PQQ** has been shown to promote **memory**, **attention**, **and cognition** in maturing individuals.²⁰

A Breakthrough Weapon in the Battle Against Aging

Life Extension® has identified a purified, highly potent form of PQQ from Japan that is produced through a <u>unique</u> fermentation process. The result is the highest quality PQQ available on the market today called **BioPQQ™**.

A bottle containing **30 10 mg** vegetarian capsules of **PQQ Caps with BioPQQ**™ retails for \$24. If a member buys four bottles, the price is reduced to just **\$16.50** per bottle.

A 10 mg dose of **PQQ** is also included in the **Mitochondrial Energy Optimizer with BioPQQ™** and **Mitochondrial Basics with BioPQQ™** formulas.

Contains rice.

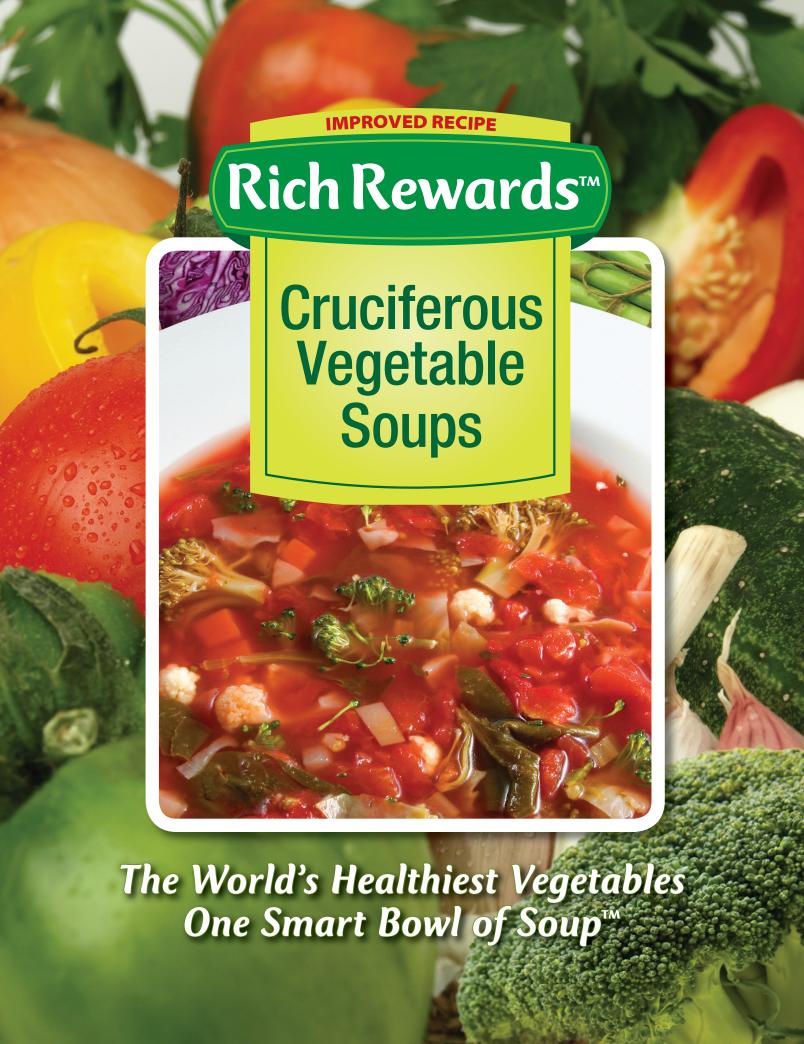


To order PQQ Caps with BioPQQ™ standalone or any other PQQ-containing formula call 1-800-544-4440 or visit www.LifeExtension.com

BioPQQ™ is a trademark of MGC (Japan).

References

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Processed food companies sell vegetable soups so cheaply because they load them with *high-glycemic* carbohydrates (rice, potatoes, pasta) that cost virtually nothing. They then add inexpensive ingredients like corn, sugar, and sometimes omega-6 fats (like cottonseed oil). So for less than \$2, you get a relatively high-carb-calorie soup that provides virtually <u>no</u> health benefits.

Life Extension® has formulated two vegetable soups that contain only healthy ingredients, including loads of **cruciferous vegetables** (cauliflower, broccoli, cabbage, etc.), **extra-virgin olive oil**, and a host of other beneficial **plant foods**.

Vegetable and Rich Rewards Spicy
Cruciferous Vegetable soup contains only
60 to 70 calories of the best-documented
foods to maintain your precious health.
You can consume the entire contents or use
a smaller portion of the soup as part of a
meal for you (or several people).

Each **60-70 calorie** portion of these new soups provides a **full serving** of the world's healthiest vegetables. The entire container supplies about **3.5 servings** of these vegetables—with <u>none</u> of the glucose-spiking fillers found in commercial soups.

The retail price for a **3.5 serving bottle** of **Rich Rewards Cruciferous Vegetable** or **Rich Rewards Spicy Cruciferous Vegetable** soups is \$11.95. Member price is **\$8.96**. If a **Life Extension**® member purchases any assortment of six bottles, the price is reduced to **\$8.44** per bottle (or **\$2.56 per serving**).

To order your fresh supply of
Life Extension's Rich Rewards Cruciferous
Vegetable or Rich Rewards Spicy
Cruciferous Vegetable soups, call
1-800-544-4440 or visit www.lef.org/soup





<mark>Souper Tasty.</mark> Souper Satisfying.

You know you don't eat enough veggies. So **Life Extension**® cooked up a convenient, tasty way to spoon-feed these souper foods.

This soup provides unique garden-fresh ingredients, such as cruciferous vegetables, tomatoes, carrots, and other beneficial plant foods plus heart-healthy extra virgin olive oil.

One Smart Bowl of Soup

A full serving of vegetables per serving (or about 3.5 servings of healthy vegetables per bottle)

Less than 71 calories per serving
No added starches, preservatives, or sugars!

Excellent source of cruciferous vegetables

Low total fat per serving

No saturated fat or cholesterol

0 grams trans fat

Cruciferous Vegetable Soup

Nutrition Facts

Serving Size 1 cup (245g) Servings Per Container about 3.5

Amount Per Serving	
Calories 60 Ca	lories from Fat 10
	% Daily Value *
Total Fat	1g 2%
Saturated Fat	0g 0 %
Trans Fat	0g
Cholesterol	0mg 0 %
Sodium	45mg 2 %
Potassium	580mg 17 %
Total Carbohyd	rate 12g 4%
Dietary Fiber	3g 12 %
Sugars	8g
Protein	3g
A 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- J
Vitamin A 60% •	Vitamin C 80%
Calcium 6%	Iron 8%

Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs: 2,500 Calories: 2,000 Total Fat Less than Saturated Fat Less than 65g 20g 80g 25g 300mg 2,400mg 3,500mg Cholesterol Less than 300mg Sodium Potassium Less than 2,400mg 3,500mg Total Carbohydrate Dietary Fiber

Ingredients: Water, Diced Tomatoes in Juice (tomatoes, tomato juice, citric acid, calcium chloride), Tomato Paste, Carrots, Celery, Cauliflower, Green Cabbage, Red Cabbage, Broccoli, Spinach, Brussels Sprouts, Chicken Broth, Asparagus, Red Bell Pepper, Garlic, Parsley, Extra Virgin Olive Oil, Thyme, Dill Weed, Black Pepper, Basil, Bay Leaf.

Spicy Cruciferous Vegetable Soup

Nutrition Facts

Serving Size 1 cup (245g) Servings Per Container about 3.5

Amount Per Ser	ving
Calories 70	Calories from Fat 20
	% Daily Value *
Total Fat	2g 3%
Saturated Fa	at 0g 0 %
Trans Fat	0g
Cholesterol	0mg 0 %
Sodium	40mg 2 %
Potassium	560mg 16 %
Total Carbol	
Dietary Fibe	
Sugars	8g
Protein	3g

Vitamin A 45% Vitamin C 80%
Calcium 6% Iron 8%

"Percent Daily Values are based on a 2,000
calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	809
Saturated Fat	Less than	20g	250
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500mg	3,500mg
Total Carbohydr	ate	300g	3750
Dietary Fiber		25g	300

Ingredients: Water, Diced Tomatoes in Juice (tomatoes, tomato piuce, citric acid, calcium chloride), Tomato Paste, Bok Choy, Cauliflower, Carrots, Onion, Broccoli, Red Bell Pepper, Green Onion, Red Cabbage, Chicken Broth, Extra Virgin Olive Oil, Cilantro, Garlic, Pepper Sauce (aged red peppers, distilled vinegar, salt), Fennel, Ginger, Black Pepper.



Vitamin C's popularity is undeniable—and so are its benefits! It has been over 80 years since this critical vitamin was isolated, and its importance in our diet cannot be overstated. However, since humans don't manufacture **vitamin C** internally, it must be obtained through dietary sources or supplements.

This can be problematic because **vitamin C** is a *water-soluble* nutrient that is quickly oxidized and released by the body, which means that for those seeking vitamin C's optimal health benefits, they have to consume the vitamin several times a day.¹

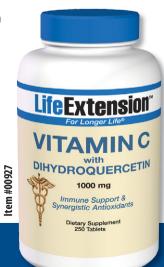
Fortunately, a *flavonoid* antioxidant known as *dihydroquercetin* functions as a **vitamin C** "supercharger." Studies demonstrate that *dihydroquercetin* acts to inhibit the oxidation of **vitamin C**, thereby helping to maintain its concentration and to recycle **vitamin C** throughout the body.^{2,3} This synergistic relationship between *dihydroquercetin* and **vitamin C** greatly enhances the efficacy of <u>both</u> molecules in the body's organs and tissues.

Vitamin C with Dihydroquercetin was formulated for those seeking to obtain optimal efficacy and antioxidant protection from their vitamin C supplement. The suggested daily dose of one tablet of this formula supplies 1,000 mg of vitamin C (as ascorbic acid), along with 10 mg of dihydroquercetin-3-rhamnoside, a highly bioavailable form of dihydroquercetin derived from grape leaf extract.

A bottle containing 250 tablets of **Vitamin C** with **Dihydroquercetin** retails for \$25.50. If a member buys four bottles, the price is reduced to just \$17.44 per bottle.

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To order VITAMIN C <u>with</u> Dihydroquercetin, call 1-800-544-4440 or visit www.LifeExtension.com



IN THE NEWS

Increased Vitamin D Intake Linked with Lower Stroke Risk Over 34-Years of Follow-Up

An article published recently in *Stroke* reports a protective effect for greater vitamin D intake against the risk of ischemic stroke in Japanese-American men.*

Gotaro Kojima, MD, and colleagues utilized data obtained from 7,385 Japanese-American men who were between the ages of 45 to 68 upon enrolling in the Honolulu Heart Program. Dietary interviews conducted upon enrollment were analyzed for the intake of vitamin D from food.

Over the 34-year follow-up period, stroke was documented in 960 subjects. For men whose vitamin D intake was among the lowest 25% of participants, the risk of stroke was 22% higher compared to the risk experienced by those whose intake was among the top 25%. When stroke

> was analyzed by type, the risk of thromboembolic stroke

was 27% higher for those whose vitamin D intake

> was lowest in comparison with the highest

Editor's Note: "Based on the results of this and other epidemiological studies, higher vitamin D intake or vitamin D supplementation may be beneficial for stroke prevention," the authors write.

—D. Dye

Stroke. 2012 May 24.

Curcumin to Be Tried in Colon Cancer Patients

An upcoming trial conducted by the Cancer Research UK and National Institute for Health Research Experimental Cancer Medicine Centre (ECMC) in Leicester, England, will evaluate the effectiveness of curcumin, a compound that occurs in turmeric, as a means of improving the effectiveness of standard chemotherapy for metastatic colon cancer.*

In previous experiments, curcumin was shown to enhance chemotherapy's ability to kill cultured colon cancer cells. Colorectal cancer patients are commonly treated with a combination of three chemotherapy drugs, yet approximately half of those treated fail to respond and those who do respond are frequently plagued with side effects such as severe nerve pain.

The trial will recruit 40 patients with colon cancer that has metastasized to the liver. Threefourths of the participants will be administered curcumin supplements for one week prior to being treated with standard chemotherapy drugs. while the remainder will receive chemotherapy alone, and the benefits and side effects of treatment will be evaluated.

Editor's Note: "The prospect that curcumin might increase the sensitivity of cancer cells to chemotherapy is exciting because it could mean giving lower doses, so patients have fewer side effects and can keep having treatment for longer," commented chief investigator William Steward, who is the ECMC director at the University of Leicester.

—D. Dye

Experimental Cancer Medicine Centre (ECMC), Leicester, England.

IN THE NEWS

Curcumin Helps Improve Immune Function

In a recent article in the *Journal of Nutritional Biochemistry*, researchers from Oregon State University reported a benefit for curcumin, a compound found in the spice turmeric, in innate immune function.*

Adrian Gombart and colleagues discovered that curcumin nearly tripled the expression of a gene that encodes a protein known as cathelicidin antimicrobial peptide (CAMP), which can help combat bacteria, viruses, and fungi that have not been previously encountered by the immune system. CAMP is the only known antimicrobial peptide of its kind in humans, and is able to destroy a wide range of bacteria (including that which causes tuberculosis) as well as help prevent sepsis. While curcumin's effect on CAMP is not as potent as that previously found for vitamin D, the compound may still be of value in improving immune function, in addition to providing anti-inflammatory and antioxidant benefits.

Editor's Note: Dr. Gombart remarked that although curcumin is generally consumed in low levels, "It's possible that sustained consumption over time may be healthy and help protect against infection, especially in the stomach and intestinal tract."

—D. Dye

* J Nutr Biochem. 2012 May 25.



Probiotics Help Prevent Antibiotic-Associated Diarrhea

A review and meta-analysis reported in the *Journal of the American Medical Association* found a protective effect for orally-administered probiotics against diarrhea that often develops as a response to antibiotic drugs.*

Susanne Hempel, PhD, and her colleagues reviewed 82 randomized clinical trials of patients receiving antibiotics that compared the effects of a probiotic to no treatment, a placebo, or a different probiotic or probiotic dose. A pooled analysis of 63 of the trials, which included a total of 11,811 participants, concluded that the use of probiotics was associated with a 42% lower risk of developing diarrhea as a result of antibiotic use compared to not consuming probiotics.

"The pooled evidence suggests that probiotics are associated with a reduction in antibiotic-associated diarrhea," the authors conclude. "More research is needed to determine which probiotics are associated with the greatest efficacy and for which patients receiving which specific antibiotics."

Editor's Note: While antibiotics destroy harmful as well as beneficial bacteria, probiotics consist of beneficial live microorganisms whose presence in the digestive tract can help prevent the overgrowth of unhealthy organisms.

—D. Dye

* JAMA. 2012 May 9;307(18):1959-69.

Consuming Berries Could Delay Brain Aging Up to Two and a Half Years

An article published in the *Annals of Neurology* reports a protective effect for diets containing high amounts of blueberries and strawberries against cognitive decline in older women.*

Dr. Elizabeth Devore of Harvard Medical School and her associates evaluated data from women who were enrolled in the Nurses' Health Study in 1976. Questionnaires completed every four years since 1980 were analyzed for the frequency of berry intake as well as the intake of 31 individual flavonoids. Cognitive function was tested every two years in 16,010 participants who were over the age of 70 between 1995 and 2001.

Consuming a high amount of blueberries or strawberries was associated with a slower decline in cognitive function test scores over the follow-up period compared to women whose intake was lower, resulting in a delay in cognitive aging of up to **2.5** years.

Editor's Note: Berries are high in compounds known as flavonoids, which may help reduce the negative impact of inflammation and stress on cognitive function. In this study, greater intake of the anthocyanidin class of flavonoids and total flavonoids was also associated with a reduced rate of cognitive decline.

-D. Dye

* Ann Neurol. 2012 Apr 26.



Clinical Trial Finds **Heart-Protective** Benefits for Resveratrol

The results of a trial published in The American Journal of Cardiology reveal a benefit for resveratrol in reducing cardiovascular disease risk factors in men and women taking statin drugs.*

Spanish researchers divided 75 participants who were at high risk of cardiovascular disease to receive a grape extract containing 8 mg resveratrol, a grape supplement without resveratrol or a placebo daily for six months, followed by a six month period during which the dose of the treatments was doubled. The pro-inflammatory cytokine interleukin-6 increased and the anti-inflammatory molecule interleukin-10 decreased by the end of the study in the placebo group, but no changes were observed among those who received grape extract without resveratrol. Subjects who received resveratrol experienced a 26% decrease in C-reactive protein as well as a 19.8% decline in TNF-a by the end of twelve months, indicating a significant decrease in inflammation.

Editor's Note: Additionally, plasminogen activator inhibitor type 1 (PAI-1) was reduced, reflecting a reduction in the risk of excessive blood clotting, while adiponectin and interleukin 10 were increased in the group that received grape extract with resveratrol.

—D. Dye

Am J Cardiol. 2012 Apr 19.

IN THE NEWS

Celery and Parsley Compound May Treat Breast Cancer

A recent study performed at the University of Missouri showed that apigenin, a natural substance found in celery and parsley, may be a nontoxic treatment for an aggressive form of human breast cancer.* According to Salman Hyder, the Zalk Endowed Professor in Tumor Angiogenesis and professor of biomedical sciences in the College of Veterinary Medicine and the Dalton Cardiovascular Research Center, apigenin slowed the progression of human breast cancer cells in three ways: By inducing cell death, by inhibiting cell proliferation, and by reducing expression of a gene associated with cancer growth. Blood vessels responsible for feeding cancer cells also had smaller diameters in apigenin-treated mice compared to untreated mice. Smaller vessels mean restricted nutrient flow to the tumors and may have served to starve the cancer as well as limiting its ability to spread.

"This is the first study to show that apigenin, which can be extracted from celery, parsley, and many other natural sources, is effective against human breast cancer cells that had been influenced by a certain chemical used in hormone replacement therapy," Hyder concluded.

-M. Richmond

* Available at: http://www.ncbi.nlm.nih.gov/pubmed/22569706. Accessed May 23, 2012.

Testosterone Linked to Weight Loss in Obese Men

Researchers with Bayer Pharma AG, of Berlin, Germany reported in a new study that testosterone replacement may promote weight loss in obese older men who have low levels of the hormone.* The purpose of the study was to discover improved ways that obese men could lose weight.

Traditionally, reducing caloric intake does result in a reduction of overall weight, however, lean body mass is reduced as well. The researchers acknowledged that adding a moderate exercise program to a diet that limits food intake can maintain lean body mass and improve insulin sensitivity in obese men, but in the long run, sticking to these measures is difficult for most men. While surgery may be an option for some men, a few clinical and pre-clinical studies have pointed to a role for testosterone to combat obesity.

The researchers found that overall, lower levels of testosterone increase the accumulation of fat deposits around the mid-

section. This layer of fat is commonly related to increased risk for metabolic syndrome, type 2 diabetes mellitus, and cardiovascular disease.

Taking this into account, the researchers concluded that testosterone treatment in obese men may increase energy, mood, and reduce fatigue, which could allow these men a greater chance at success in terms of committing to an exercise program and maintaining a reduction in daily calorie consumption.

—J. Finkel

Curr Diabetes Rev. 2012 Mar;8(2):131-43.



Comprehensive Pomegranate Protection!

POMEGRANATE FORMULA

Few nutritional sources have gained as much scientific validation as **pomegranate**.¹

The vast majority of research has focused on extracts from the *fruit*. Only recently have scientists identified the synergistic action of compounds specific to other parts of the pomegranate—most notably its **seeds** and **flowers**.

The Next-Generation Pomegranate Formula

Life Extension® offers an advanced, cutting-edge pomegranate formula that brings together novel phytonutrients for the first time in a unique, high-potency blend.

Full-Spectrum Pomegranate[™] combines standardized extracts from the whole fruit and flower, along with pomegranate seed oil, to support system-wide health. In addition to the highly absorbable antioxidant powerhouses found in pomegranate fruit,²⁻⁴ Full-Spectrum Pomegranate[™] augments these polyphenols with newly discovered biologically active compounds from other parts of the pomegranate plant.

These little-known nutrients include: *punicanolic acid*, a member of the **triterpene** family of essential oils that provides cellular support to help with inflammation,⁵ and *pomegranatate*, to combat age-related metabolic changes.⁶

This superior formula supplies the *complete* nutritional profile of the pomegranate plant. Just one softgel of **Full-Spectrum**Pomegranate[™] provides polyphenols equivalent to 12.3 ounces of pomegranate juice concentrate (or 30 pomegranates) *plus* a proprietary blend of **seed oil** and **flower extract**.

One softgel of **Full-Spectrum Pomegranate**™ contains:

seed oil (standardized to 22% (30 mg) punicic acid)]

Full-Spectrum Pomegranate™

A bottle containing 30 softgels of **Full-Spectrum Pomegranate**[™] retails for \$24. If a member buys four bottles, the price is reduced to just **\$15.75** per bottle. **Item # 01423 Contains soybeans.**



Item # 01423

To order Full-Spectrum Pomegranate™, call 1-800-544-4440 or visit www.LifeExtension.com

References:

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POMELLA® extract is covered under U.S. Patent 7,638,640 and POMELLA® is a registered trademark of Verdure Science, Inc.

Advanced RESVERATROL Formula

In 2003, the Life Extension Foundation® introduced a standardized **resveratrol** extract shown to favorably alter genes implicated in the aging process—many of the <u>same</u> genes that respond to **calorie restriction**.

Since then, we have identified additional compounds that simulate calorie restriction's ability to trigger youthful **gene expression**—the process by which genes transmit signals that slow certain aspects of aging.

Compelling evidence reveals that certain compounds found in berries, such as pterostilbene and fisetin, possess potent "longevity gene" activators that work in synergy with **resveratrol**. For example, **fisetin** (found in strawberries) has been shown to stabilize resveratrol in the body by shielding it from metabolic breakdown, 1-10 thus extending its beneficial effects.

High-Potency Resveratrol with Synergistic Activators

Life Extension® members gain access to standardized transresveratrol combined with plant extracts that favorably influence longevity gene expression. Unlike many commercial formulas, Life Extension standardizes to trans-resveratrol, which researchers contend is the most active constituent.

A bottle containing 60 vegetarian capsules of **Optimized Resveratrol with Synergistic Grape-Berry Actives** retails for \$46. If a member buys four bottles, the price is reduced to just \$31 per bottle. The suggested dose of one capsule a day provides:

<i>Trans</i> -Resveratrol	250 mg
Grape-Berry Actives	85 mg
Quercetin	60 mg
Trans-Pterostilbene	0.5 mg
Fisetin	10 mg

Item # 01430

CAUTION: If you are taking anti-coagulant or anti-platelet medications or have a bleeding disorder, consult your healthcare provider before taking this product.

- **References**1. *Cell.* 2006 Dec 15;127(6):1109-22.
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- Nature. 2004 Aug 5;430(7000):686-9.

10. Xenobiotica. 2000 Sep;30(9):857-66

To order Optimized Resveratrol with Synergistic Grape-Berry Actives, call 1-800-544-4440 or visit www.LifeExtension.com

RESVERATROL rgistic Grape-Berry Actives 250 mg

GREEN TEA EXTRACT When Life Extension® introduced standardized green tea extract in 1993, the supplement was very expensive. As more research was published about green tea's multifaceted benefits, more companies competed to make **higher-potency** extracts at lower prices. The good news for consumers is that they can obtain high-potency standardized green tea extract capsules at a fraction of the original price. The Life Extension Foundation Buyers Club offers 98% green tea extracts in either a lightly caffeinated or decaffeinated form. These 98% extracts are standardized to provide high potencies of critical EGCG, the most important **polyphenol** found in green tea. Each capsule of Mega Green Tea Extract provides more polyphenols than are found in three cups of green tea. These highly concentrated Mega Green Tea Extract Caps contain 725 mg of either lightly caffeinated or decaffeinated 98% standardized green tea extracts. The retail price for a 100 vegetarian capsules bottle of Mega Green Tea Extract is \$28. If a member buys four bottles of 725 mg Mega **Green Tea Extract** capsules, the price is reduced to \$19.88 per bottle or as low as \$6.41 a month based on the typical intake of just one capsule a day. Contains rice. **LifeExtension** MEGA GREEN TE **LifeExtension** To order Mega Green Tea Extract, **EXTRACT** call 1-800-544-4440 or Per-Day Concentrate
Polyphenol Extract MEGA GREEN TEA visit www.LifeExtension.com Dietary Supplemen EXTRACT Per-Day Concentrate Polyphenol Extract Item # 00953 Dietary Supplement 100 Vegetarian Capsule

These supplements should be taken in conjunction with a healthy diet and regular exercise program. Results may vary.

Item # 00954

The Ultimate Two-Per-Day Formula



Compare CENTRUM® to TWO-PER-DAY:

Sample Ingredient Comparison	LIFE EXTENSION® TWO-PER-DAY	Centrum® Silver® Adults 50+
Vitamin C	500 mg	60 mg
Vitamin D	2,000 IU	500 IU
Vitamin B1	75 mg	1.5 mg
Vitamin B2	50 mg	1.7 mg
Vitamin B6	75 mg	3 mg
Vitamin B12	300 mcg	25 mcg
Niacin (as niacinamide)	50 mg	20 mg
Pantothenic acid	100 mg	10 mg
Vitamin E	100 IU (natural)	50 IU (synthetic)
Natural Folate	400 mcg	400 mcg (synthetic)
Zinc	30 mg	11 mg
Selenium	200 mcg	55 mcg
Lutein	5,000 mcg	250 mcg
Lycopene	2,000 mcg	300 mcg
Biotin	300 mcg	30 mcg
Boron	3,000 mcg	150 mcg
Chromium	200 mcg	45 mcg
Molybdenum	100 mcg	45 mcg
Magnesium	100 mg	50 mg
Manganese	2 mg	2.3 mg
lodine	150 mcg	150 mcg
Potassium	25 mg	80 mg
Vitamin A (as beta-caroten	e) 4,500 IU	1,000 IU
Vitamin A (preformed)	500 IU	1,500 IU
Choline (as bitartrate)	20 mg	(none)
Inositol	50 mg	(none)
PABA	30 mg	(none)
Calcium	12 mg	220 mg
Alpha Lipoic Acid	125 mg	(none)

Contains soybeans, rice, and corn.



Ratings based on results of the 2012 ConsumerLab.com Survey of Supplement Users. More information at www.consumerlab.com. To order Life Extension
Two-Per-Day Tablets or Two-Per-Day
Capsules, call 1-800-544-4440
or visit www.LifeExtension.com

Commercial "one-a-day" supplements provide very low potencies.

Compared to conventional "one-a-day" products, **Life Extension Two-Per-Day** contains up to 50 times more potency! This Two-Per-Day formula is available in <u>tablet</u> or <u>capsule</u> form.

The box to the left reveals how much more potent **Two-Per-Day** is compared to the leading commercial multi-vitamin.

Commercial supplements often contain the cheapest form of nutrients that don't provide optimal benefits. For example, the 50 IU of synthetic vitamin E contained in Centrum® Silver® Adults 50+ may provide relatively little vitamin E to the bloodstream. The 100 IU of natural vitamin E contained in Two-Per-Day provides much more vitamin E activity.





Item # 01615 Tablets

Item # 01614 Capsules

Compared to Centrum[®] Silver[®] Adults 50+, Two-Per-Day Tablets or Capsules provide about:

- 4 times more Vitamin D
- 8 times more Vitamin C
- 2 times more Vitamin E
- 10 times <u>more</u> Biotin
- 20 times <u>more</u> Boron
- 4 times more Selenium
- 25 times more Vitamin B6
- 50 times more Vitamin B1
- 12 times more Vitamin B12
- More than twice as much niacin, zinc, and many other nutrients

Two-Per-Day Tablets retail for \$20, but members pay only \$13.50 each when four bottles are purchased. Two-Per-Day Capsules retail for \$22, but cost members only \$15 each when four are purchased.

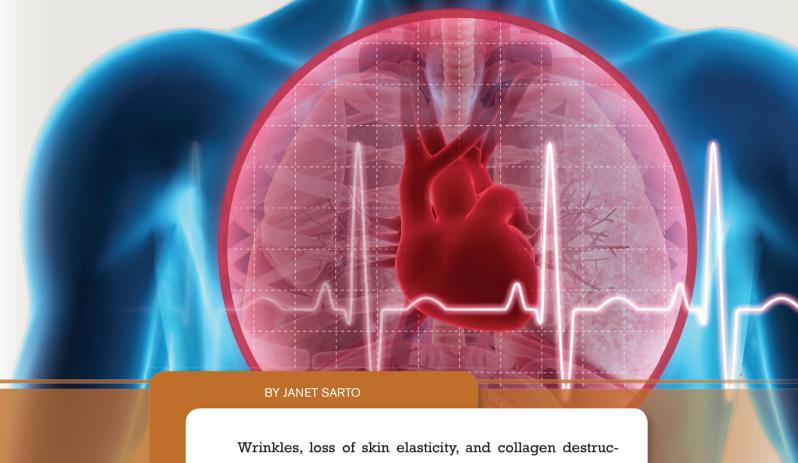
Each bottle of **Two-Per-Day** lasts **60 days**, so members can obtain the benefits of this high-potency formula for as little as **\$7.50 per month**.



PYCNOGENOL:

Multi-Modal Defense Against Aging





Wrinkles, loss of skin elasticity, and collagen destruction are the first visible signs of aging. More than skin deep, these degradations also are reflective of our internal aging as well. By slowing the factors that cause skin aging, we can also slow total body aging. That's because the same basic mechanisms are at work to age us on the outside as well as the inside: oxidant stress, inflammation, damage to DNA, glycation, and cell membrane damage.

Extensive research into a plant extract Pycnogenol® from the French Maritime pine tree has shown that this collection of phyto-molecules not only rejuvenates skin elasticity and reduces collagen degradation, but works internally to lower blood glucose levels, increase nitric oxide to dilate blood vessels, restore capillary health, and normalize blood pressure. And it does all this by attacking the same fundamental aging mechanisms.

Pycnogenol® is a natural plant extract that contains procyanidins, bioflavonoids, and other health-giving molecules that act synergistically on <u>five</u> of the major processes that cause your skin—and your entire body—to age too quickly. 1-3 >>



Pycnogenol® Fights Aging Mechanisms

Researchers have identified several fundamental mechanisms that cause the diseases related to aging. Many scientists now believe that these mechanisms are involved in aging itself, and that the "diseases of aging" are merely symptoms of this process.

Basic laboratory studies reveal that Pycnogenol® directly and indirectly shuts down at least five of the key mechanisms of aging that include:

- Oxidant Stress²
- Membrane Damage⁴
- DNA Damage⁵
- Inflammation³
- Glycation⁶

With the wealth of published data on the broad spectrum health benefits of Pycnogenol®, scientists began digging deeper into the impact that this extract has on the numerous factors of aging. In order to better understand the various benefits of Pycnogenol® researchers created a study using accelerated aging mice,7 which grow old much faster than normal animals. These specially bred mice show the typical effects of aging, such as decreased immune function, poor blood cell production, and learning and memory deficits.

When researchers fed a group of age-accelerated mice a diet supplemented with Pycnogenol®, the mice demonstrated significant improvements in cellular function, particularly their immune system's infectionand tumor-fighting cells. These hallmarks of a strong

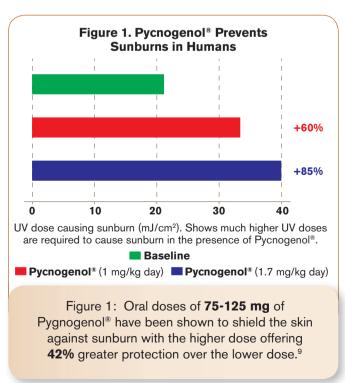
immune system are also the hallmarks of optimal health. The animals also showed increased production of blood cells from their bone marrow, becoming more like normal vounger animals.⁷

The researchers concluded that Pycnogenol®, a unique natural mixture of health-promoting substances, was able to rejuvenate the experimental animals' biology in ways that no single drug, or even nutrient, could do. Pycnogenol® synergistically restored many of the important defense factors that help us fight off various diseases when we are young. but that deteriorate with age.

Armed with this insight, scientists began to explore other ways that Pycnogenol® fights the primary aging mechanisms and slows the aging process in many different organs and systems at once.

Beauty from Within: Pycnogenol® Rejuvenates Skin

Let's first examine Pycnogenol's ® impact on preserving and restoring skin health and vitality before we turn to its internal health benefits. Skin ages for many reasons; leading to the visible signs we associate with older people. Numerous studies have shown that Pycnogenol® can reduce many of the aging factors that destroy supple skin by reducing free radical damage and protecting collagen and elastin from enzymatic degradation. To many scientists' surprise, Pycnogenol® can block UV light's damaging effects



thereby preventing the inflammation and protein loss that ultimately leads to wrinkling.8-10

In one study, researchers showed that Pycnogenol® supplementation (75 to 125 mg/day) protected human volunteers from damaging sunburn after exposure to UV light. In other words, Pycnogenol® acts as an internal sun-screen, reducing your exposure to this major cause of wrinkles.

Pycnogenol® further prevents wrinkling by protecting vital skin proteins from degradation, while increasing their natural production. 11-13 These proteins break down by UV-induced inflammatory processes caused by sun exposure. Healthy protein levels give youthful skin its supple, taut, elastic quality; their loss is a major contributor to wrinkling.

In animal studies, mice supplemented with a mixture containing Pycnogenol® had significantly fewer wrinkles after exposure to UV light.¹³ They also had reduced UV-induced skin thickening and toughening, problems that also age human skin.

In a key human study, 62 women ages 45-73 took part in a double-blind, placebo-controlled trial of a similar Pycnogenol®-containing oral mixture. Skin elasticity improved by an impressive 9% after 6 weeks of treatment, compared to the placebo group. 14 By 12 weeks of supplementation, skin roughness was also significantly reduced by 6%.14

Another study in 2012 showed that Pycnogenol® alone, at a dose of 75 mg/day, increased skin hydration by 8% after just 6 weeks; in women with dry skin at baseline the increase was 21%.11 Skin elasticity increased, and skin fatigue decreased significantly in this study as well, further lowering the wrinkling risk.

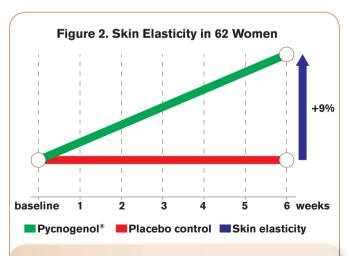


Figure 2: After 6 weeks supplementation with a Pycnogenol®-containing supplement, skin elasticity improved by 9% over the placebo group.14



Pycnogenol® **Protects Against Premature Aging**

- Your skin provides an excellent reflection of your entire body's aging.
- Skin, like the rest of your body, ages as the result of a handful of biological events.
- Pycnogenol®, a complex mixture of flavonoids and other beneficial molecules from the bark of a European pine, combats 5 of those major aging causes.
- Pycnogenol® reduces skin aging, prevents wrinkling and abnormal pigment deposits, and even reduces skin symptoms of cardiovascular disease.
- By the same basic mechanisms, Pycnogenol® reduces the risk of other age-related diseases, including heart disease, diabetes, cognitive decline, and arthritis.
- You should be supplementing with Pycnogenol® to optimize your defense against premature aging.



Pycnogenol® also has favorable effects on the uneven and undesirable pigmentation of skin known as *melasma* which is typically seen on facial areas with high sun exposure.

In a study, 30 women with melasma took 75 mg/ day of Pycnogenol® for 30 days.15 At the end of the study, the size of their unwanted skin pigmentation was significantly reduced. Other areas of skin became lighter as well, as the density of pigment decreased.

Chronic venous insufficiency, unlike wrinkling and melasma, is often part of a life-threatening process, such as congestive heart failure or a blood clot.16 The resulting skin breakdown and ulceration also opens victims up to the risk of serious infections.

Two large clinical studies showed Pycnogenol's® benefits in fighting chronic venous insufficiency. In the first, patients took 150 or 300 mg/day for 8 weeks. in comparison with an established drug treatment called Daflon.¹⁷ Pycnogenol® supplemented patients had reduced leg swelling, along with improvements in oxygen and carbon dioxide content of the tissue.¹⁷ These changes all indicated improved blood flow and decreased capillary fluid leakage compared with the Daflon group.

The second study compared Pycnogenol® 150 mg/day with a placebo, over an 8-week period. Supplemented patients had a 26% decrease in ankle swelling and a 64% reduction in tissue fluid (edema).¹⁶ That netted patients a 60% decrease in overall symptoms including pain, restless limbs, and skin alterations.

Clearly Pycnogenol[®] battles aging skin both internally and externally. Let's look now at how it fights the effects of age in some other tissues and organs.

Pycnogenol® for Heart and Artery Health

More than 27 million Americans have heart disease: nearly 600,000 die from it each year. 18 Age-related dysfunction of the endothelium (the layer of cells lining arteries and smaller vessels), is to blame for many cardiovascular diseases. A malfunctioning endothelium can't properly control blood flow and pressure.

Excessive platelet function is another cause of heart disease and stroke. When platelets are overactive, clots form inside blood vessels, blocking blood flow.

The result of endothelial dysfunction and platelet activation can be a heart attack or stroke. Pycnogenol® improves both conditions.

Pycnogenol's® antioxidant function helps protect endothelial cells from damage.¹⁹ In addition, it may bind to proteins in blood vessel walls, helping to "seal" them and prevent capillary leakage.20 Studies demonstrate how these effects play out in human subjects with endothelial dysfunction. When patients with high blood pressure were given 100 mg/day of Pycnogenol® for 12 weeks, they were able to reduce their blood pressure medication.²¹

In another study, **125 mg** Pycnogenol®/day helped normalize blood pressure in 58% of hypertensive diabetic patients, while cutting their need for blood pressure medication by 50%.6 Supplementation can also reduce the fluid accumulation that is a common side effect of blood pressure medications.²² Insight into how Pycnogenol® works to lower blood pressure comes from human studies using ultrasound to measure blood flow. Healthy young men treated with 180 mg/day of Pycnogenol® had a 41% increase in blood flow response to the vascular-response neurotransmitter acetyl choline indicating significantly lower risk for cardiovascular complications.²³

A similar study done in patients with existing coronary artery disease, (who were considered at high risk for heart attacks) showed that **200 mg** of Pycnogenol® per day along with standard cardiovascular therapy, produced a 32% increase in coronary blood flow, but no change occurred in placebo patients.²⁴Another benefit of improved blood flow is better erectile function in men. A dramatic study showed that a combination of L-arginine aspartate and Pycnogenol® intake for one month restored erectile dysfunction to normal, and doubled the frequency of intercourse.²⁵Along the way, cholesterol and blood pressure were also reduced.

The physiology behind the improvement in erectile function is important, and applies equally to men and women. That's because nitric oxide, a signaling compound, is essential in dilating blood vessels, not only to allow a normal erection, but also to control blood pressure throughout the body. Our bodies relax their arteries by increasing nitric oxide levels in the vessels' lining cells, or endothelium.²⁶

Pycnogenol® beneficially modulates nitric oxide production.²⁷ In endothelial cells, Pycnogenol® boosts levels of endothelial nitric oxide synthase (eNOS), the enzyme system that produces vessel-relaxing nitric oxide in response to blood flow and blood pressure.²⁸ That effect is powerful enough to overcome the vessel-constricting, blood pressure-elevating effects of adrenaline and other stress-induced compounds.²⁸ The result is an increase in blood flow to vital tissues, and a decrease in blood pressure.²⁷

Animal and human studies have repeatedly shown that treatment of hypertension with Pycnogenol® results in lowered blood pressure and reduced damage to blood vessels and organs such as the kidney.^{27,29}And the positive elevation of nitric oxide in endothelial tissue can also inhibit LDL cholesterol oxidation, slowing the early development of atherosclerotic plaques.²⁸

Among the most exciting developments with Pycnogenol® and nitric oxide are studies showing that Pycnogenol® can mitigate the effects of congestive heart failure. In this condition, chronically elevated pressures within the heart cause the muscle to become floppy and ineffective. Victims become weak, fluid accumulates in their tissues, and death often results from increasingly insufficient blood flow.

Changes in heart structure during congestive heart failure are the direct result of impaired nitric oxide production. Supplementing animals with Pycnogenol® reverses that remodeling in congestive heart failure, reduces the gradual degradation of heart muscle proteins, and restores the heart's ability to pump blood normally.30,31

Boosting nitric oxide in endothelial cells and platelets also gives Pycnogenol® impressive effects on platelet function. It reduces their "stickiness," which lowers the risk that these tiny blood cells will produce a deadly clot in one of your vessels.28

Smokers, who are at high risk for blood clots, participated in a study that showed 200 mg of Pycnogenol® was sufficient to reduce over-activated platelet function.³² This effect is likely due to reduction in thromboxane, a clot-inducing protein that is elevated in many high-risk conditions including diabetes and obesity.33





Pycnogenol® Protects Against Five Mechanisms of Aging

Mechanism	Problem	Resulting Diseases	Pycnogenol® Effects
Oxidant Stress	Oxidant stress releases free radicals that "burn" cells and tissues. That damages DNA and cell membranes, and triggers dangerous inflammation.	Oxidant stress underlies neurocognitive disorders like Alzheimer's and Parkinson's diseases, as well as atherosclerosis and cancer.	Pycnogenol® reduces free radical production, boosts cells' natural antioxidant systems, and scavenges free radicals, preventing the development of oxidant-related diseases. ^{2,47,55-58}
Membrane Damage	Damage to membranes of cells and their internal organelles disrupts cellular structure and communication.	Damage to cell and mitochondrial membranes is implicated in chronic obstructive pulmonary disease (COPD) and congestive heart failure.	Pycnogenol® stabilizes membranes, protects them against toxic injury, restores their normal characteristics, and prevents their rupture and leakage.4,5,19,59
DNA Damage	Damaged DNA can fail to produce working proteins, and can lose control over cell replication.	The best-known consequence of DNA damage is cancer, but it is also involved in Alzheimer's disease, attention deficit/hyperactivity disorder (AHDH) and atherosclerosis.	Pycnogenol® reduces DNA damage by its antioxidant effect and possibly other mechanisms.3,58,60,61
Inflammation	Chronic inflammation damages almost every component of cells and their organelles.	Inflammation is involved in every chronic, age- related disease, including atherosclerosis, osteoporosis, kidney disease, arthritis, and cancer, to name just a few.	Pycnogenol® fights inflammation by switching off a central inflammation-generating system and reducing the production of inflammatory cytokine molecules. ^{8,54,62-64}
Glycation	Proteins and fats become "glycated" when sugar molecules bond to them. Glycated molecules function abnormally and trigger oxidation and inflammation.	Glycation is implicated in cancer, cardiovascular disease, Alzheimer's disease, osteoporosis, and arthritis. It also contributes to obesity, itself a cause of inflammation and chronic disease.	Pycnogenol® prevents glycation by lowering blood sugar levels and preventing sugar absorption in the intestine. 6,38,65,66

Five major molecular mechanisms contribute substantially to aging and chronic diseases. Studies show that Pycnogenol® combats all five mechanisms and prevents disease.

When you sit still for long periods of time (for example, on a long airplane flight), you are at risk for developing dangerous blood clots in your legs. These clots can travel, eventually blocking major arteries from the heart to the lungs, and cause sudden death.

Pycnogenol® shows a unique ability to prevent these so-called thrombotic events. When a group of 99 long-haul airline passengers were given **200 mg** of Pycnogenol® before departure, and another 200 mg 6 hours later, then 100 mg next day, they had zero thrombotic events, compared with 5 such events in a similar-sized group of placebo patients.³⁴

Pycnogenol® Helps Control Diabetes

People with diabetes are in a constant state of accelerated aging, vulnerable to all five of the key mechanisms described on the preceding page. Controlling blood sugar levels is vital to prevent these age-enhancing effects.

Pycnogenol[®] supplementation lowers blood sugar levels, especially in the critical after-meal period when high sugar leads most powerfully to heart disease. 35,36 One way Pycnogenol® works is by blocking starch breakdown in the intestine.37 This slows glucose absorption (we get much of our glucose from breaking down starch), and helps level off the blood sugar flux throughout the day. Pycnogenol® also stimulates cells to take up excess glucose from the blood, reducing blood sugar even more. 38,39 Patients treated with 125 mg/day of Pycnogenol® saw a drop in fasting blood sugar of 23.7 mg/dL, compared with a decrease of just 5.7 in controls. Hemoglobin A1c, a marker of long-term blood sugar levels, dropped by 0.8% in supplemented patients, compared with just 0.1% in controls. LDL (bad) cholesterol dropped by 12.7 mg/dL as well.6 In a second study involving 30 individuals with type II diabetes who were not on conventional therapy. Pycnogenol[®] showed dose dependent lowering of blood sugar levels.³⁵ The participants were administered **50** mg of Pycnogenol[®] for 3 weeks, followed by 100 mg for 3 weeks, and finally 200 mg for 3 additional weeks. As little as 50 mg per day of Pycnogenol® had significant blood sugar lowering effects not just on fasting blood sugar but post-meal blood sugar as well. However, the benefit of taking 100 mg or 200 mg of Pycnogenol® was even more dramatic. Many people with diabetes need to lose weight. Strict control of blood sugar and weight loss will reduce, but not eliminate, the risk of diabetic complications. Many of these complications result from small blood vessel damage in the eve, the skin, and the nerves.

Pycnogenol® slows progression of blood vessel disease in the eve (diabetic retinopathy) by reducing capillary damage in the retina and improving blood flow. 39-41

One study using 150 mg/day for 2 months completely blocked the loss of retinal function in diabetic patients.²⁰ Placebo patients just got worse. Supplemented patients showed no deterioration of retinal function, instead experienced a significant recovery in visual acuity (ability to see according to the standard "Snellen" eye chart).20 Blood vessel studies in supplemented patients demonstrated improved distribution of blood vessels, and a reduction in the "leakiness" of capillaries that damages vision.



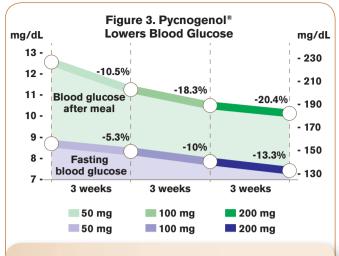


Figure 3: In Type II diabetics not requiring medication, **50-200 mg** of Pycnogenol® lowered both fasting and after meal glucose levels.³⁵

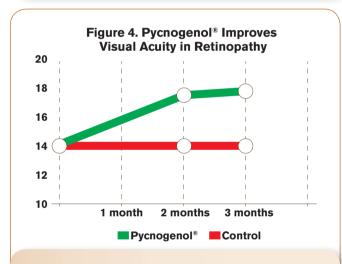


Figure 4: Pycnogenol® use has afforded improvements in visual acuity on the Snellen chart by an average 21.4%, even for those already afflicted with serious eye disease such as retinopathy. 41

An independent study at a different hospital showed similar results.⁴¹ Eighteen out of 24 patients had subjective improvement in their vision, and the average visual acuity on the Snellen chart improved by **21.4%** after just 2 months of treatment. No change was found in the placebo group.

Diabetic damage to capillaries in the skin (microangiopathy) produces skin breakdown and ulcers. Oral Pycnogenol® at **150 mg/day** can produce complete healing of ulcers in up to **85%** of patients. 42,43

Prolonged exposure to elevated glucose damages nerves, producing a painful condition called diabetic neuropathy. People with this condition experience burning, stinging sensations; meanwhile, their nerves conduct impulses more slowly than normal.

Pycnogenol® has been shown to slow declines in nerve conduction velocity, even under diabetic conditions.³⁶

Pycnogenol[®] Boosts Brain and Memory Function

Our delicate brain tissue is especially vulnerable to the effects of aging. The brain receives **30**% of overall blood flow, which is good, but which also exposes it to very high levels of oxidant stress. Over time, the other aging mechanisms also accumulate in the brain, eventually leading to loss of memory, slowed learning, and specific conditions like Alzheimer's disease.

Pycnogenol[®] is especially good at protecting brain cells from oxidant and inflammatory damage in Alzheimer's disease.^{19,44} It slows cell death following exposure to the dangerous "Alzheimer's protein" called Abeta (amyloid beta), and other oxidant stressors.^{44,45}

Studies show that Pycnogenol® not only blocks oxidant damage, but also increases levels of natural antioxidants in brain cells, further increasing their resilience. 44,46

These biochemical effects produce real results in older adults. Three months' supplementation with Pycnogenol® **150 mg/day** in healthy older adults produced significant improvements in *working memory*. That's the kind of memory you use, for example, when you look up a phone number and remember it long enough to dial it, or to find your way back to your room in a new house or hotel.

Pycnogenol® also helps improve *spatial memory* in aged animals with low testosterone (a common finding in men after "male menopause").⁴⁸ Spatial memory is what you use to remember where you put something, for example.

Menopause in women also causes loss of memory and some other brain functions. Pycnogenol® decreased overall menopausal symptoms in women by **46%**, compared with no change in placebo patients, with specific improvement in memory function, concentration, mood, and sleeping patterns.⁴⁹

Even people at the other end of the age spectrum can benefit from Pycnogenol® supplementation for memory. Healthy students supplemented with Pycnogenol® experienced improved attention, memory, and mood ratings. 50 Not only that, but they performed better on real tests. Control students failed 10.7% of their tests, while supplemented students failed only 6.25%; average test scores were 7.6% better in those on supplements.



Pycnogenol® Enhances Performance of Metformin

The incidence of type II diabetes is skyrocketing in many countries worldwide.⁶⁷ Chronically elevated blood sugar causes debilitating damage to just about every bodily system. Pycnogenol® has been shown in numerous scientific studies to significantly lower blood sugar levels and mitigate the effects of elevated blood sugar on the body.^{6,35,36,41,43,65,66} In a double-blind, randomized, placebo controlled study of 77 individuals diagnosed with type II diabetes who were also using metformin, **100 mg** per day of Pycnogenol® was shown to significantly lower fasting blood sugar by **16.2%** in just 8 weeks.⁶⁵

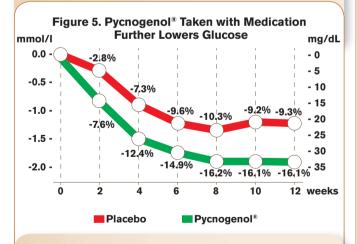


Figure 5: Pycnogenol® has been shown to enhance the blood sugar lowering effects of Metformin®. Type II diabetics taking Metformin® along with **100 mg** per day of Pycnogenol® demonstrated a decrease in blood sugar of over **16**%.⁶⁵

Pycnogenol® Eases Arthritis

Stiff, aching joints are almost a stereotype of an aging person. Joints age for the same reason that other tissues do; they succumb to the 5 basic mechanisms of aging that we've been discussing.

The most common consequence of aging in joints is osteoarthritis, suffered by fully one-third of people over age 65.⁵¹

Pycnogenol® offers dramatic relief for osteoarthritis sufferers, as demonstrated by a 3-month study of 156 people. ⁵² Just **100 mg/day** produced a **56%** reduction in the global WOMAC score, (a standard arthritis self-assessment test that evaluates pain, stiffness, and functional limitation of arthritic joints), while placebo recipients' scores dropped only **9%**. Before supplementation, patients could walk only about **223** feet; that distance increased **66%** to **650** feet after treatment. Placebo recipients saw little change.

In the same study, drug use dropped by **58%** in supplemented patients, and just **1%** in controls.⁵² Meanwhile, stomach complications (common in people taking high doses of arthritis drugs), dropped **63%** (and only **3%** in placebo patients).

Similar studies have shown identical results for osteoarthritis,⁵³ and also improvement in arthritis caused by gout.⁵⁴ The benefits of Pycnogenol[®] on arthritic joints are likely the result of sharp reductions in inflammatory markers in the blood, which signal diminished damage in joints.^{54,55}

Summary

Aging is accelerated by multiple pathological events. It is most evident in the skin, our largest and most visible organ. But the same processes take place throughout the body. Pycnogenol®, a natural mixture of health-promoting phyto-molecules, dramatically improves skin aging, reducing the risk of wrinkles, abnormal pigmentation, and even the thinning and ulceration that accompanies vascular insufficiency. Studies show that Pycnogenol® synergistically attacks five of the most prominent causes of aging in skin and in many other organs and systems. The multiple antiaging mechanisms of Pycnogenol® would be expected to substantively reduce risk for cardiovascular disease, diabetes, cognitive decline, and arthritis. ●

If you have any questions on the scientific content of this article, please call a Life Extension®

Health Advisor at 1-866-864-3027.

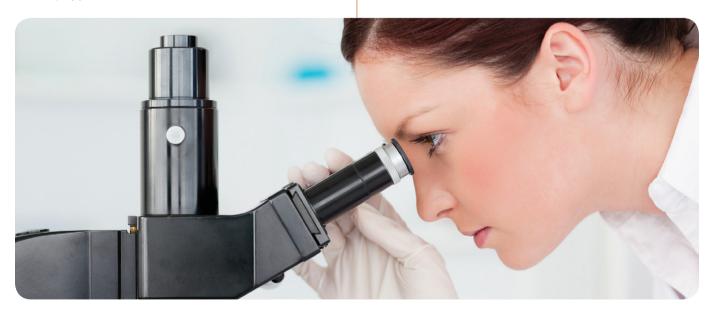
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ITEM #00747 OveRxCast

Consumers often spend hundreds of dollars on just one pair of so-called "designer" sunglasses. Life Extension® members can obtain <u>superior</u> protection against damaging solar radiation at a fraction of the price of commercially sold sunglasses.

Foundation members can now choose between **SolarShield®** sunglasses or **OveRxCast** polarized lenses that provide the same eye protection, plus improved vision under difficult weather conditions.

Life Extension's **SolarShield**® sunglasses are recognized as the **number-one doctor-recommended sunglass** in the world, with more than 50 million pairs sold to date. Patented **SolarShield**® sunglasses with **durable polycarbonate lenses** and **100% UV protection** fit **comfortably over prescription eyewear**, providing convenient protection from the harmful effects of ultraviolet radiation.

For those who desire the added benefit of lenses that reduce distracting glare, Life Extension's **OveRxCast** sunglasses come with **polarized** gray lenses that provide natural color definition with

100% UV protection. Like the **SolarShield**® sunglasses, **OveRxCast polarized** sunglasses are designed to be worn over your prescription eyeglasses.

The SolarShield® sunglasses retail for \$12.99 for one pair, and the member price is \$9.74. If a member buys two pairs, the price is reduced to only \$8.63 a pair.

One pair of **OveRxCast** sunglasses retails for \$27, and the member price is \$20.25. If a member orders two pairs, the price is reduced to just \$15.75 per pair.

To order SolarShield® or OveRxCast sunglasses, call 1-800-544-4440 or visit www.LifeExtension.com

SolarShield® is a registered trademark Dioptics, Inc.

ANTI-AGING EFFECTS OF PYCNOGENOL®

Life Extension® **Pycnogenol®** French Maritime Pine Bark Extract is a natural plant extract containing procyanidins, bioflavonoids, and other health-giving molecules that synergistically support the body's natural defenses against 5 major processes that characterize premature aging. Its effectiveness is backed by 40 years of study.

Life Extension® **Pycnogenol®** French Maritime Pine Bark Extract is designed to counteract premature-aging-related changes by providing support for the following mechanisms:

MEMBRANE FUNCTION: *Pycnogenol*® promotes the integrity and normal characteristics of cell membranes.¹⁻⁴

DNA FUNCTION: *Pycnogenol*® helps support normal DNA function through antioxidant activity and possibly other mechanisms.⁵⁻⁸

EASE INFLAMMATION: *Pycnogenol*® helps ease inflammation by normal modulation of inflammatory cytokine molecules. 9-13

OXIDATIVE STRESS: *Pycnogenol*® supports the normal functioning of healthy antioxidant systems to help suppress free radicals and protect DNA.¹⁴⁻¹⁹

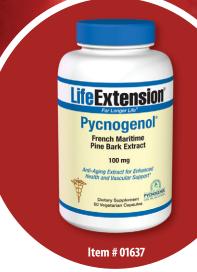
GLYCATION: *Pycnogenol®* supports cellular metabolism of sugar, healthy fasting, and post-meal blood sugar levels already within normal range, and normal sugar absorption in the intestine.²⁰⁻²⁵

Unlike other forms of pine bark extract, Pycnogenol® is a superior patented and standardized ingredient that has undergone extensive human clinical research to substantiate its numerous anti-aging properties. A bottle of **Life Extension® Pycnogenol® French Maritime Pine Bark Extract** containing 60 vegetarian capsules retails for \$64. If a member buys four bottles, the price is reduced to \$45 per bottle. The dose for most people is <u>one</u> capsule daily, so each bottle lasts **two months**.

Each capsule of Life Extension® Pycnogenol® French Maritime Pine Bark Extract provides:

Pycnogenol® dried French Maritime pine (Pinus pinaster) extract 100 mg
(bark)[std. to 65% procyanidins (65 mg)]

Vitamin C (as ascorbyl palmitate) 4 mg



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Applying Curcumin's Multitargeted Benefits To Arthritis

Curcumin is derived from the bright vellow Indian spice turmeric and has been used by traditional medicine for almost four thousand years.6 Curcumin is well-established in the medical literature as a powerful anti-inflammatory ingredient.⁵ Unlike pharmaceuticals, curcumin acts through multiple pathways and on numerous targets to limit the inflammatory response that underlies both rheumatoid and osteoarthritis (See table 1 at bottom of this page).⁶

Scientists now universally recognize that multitargeted therapies like curcumin are vastly superior to the typical single-targeted mechanisms of conventional drug treatments.^{6,7} Curcumin is a potent antioxidant, and also boosts natural antioxidant systems inside vour cells.8 Curcumin can also enhance other natural detoxifying machinery in your liver.8 By slowing naturally occurring cell death in joint tissue, curcumin can help preserve supple, youthful joints.9-12

But where curcumin really shines is in directly suppressing the inflammation that underlies not only rheumatoid arthritis, but also most of the chronic diseases of aging that afflict all of us sooner or later.¹³ One recent report showed that curcumin can reduce all of the inflammation-promoting molecular targets for which the FDA currently approves single-targeted (and often dangerous) pharmaceuticals.⁷

Curcumin's ability to safely quash inflammation in such a broad-spectrum manner makes it a compelling topic among anti-aging researchers. It is being studied for its potential benefits in a number of inflammation based diseases such as Alzheimer's, cardiovascular disease, cancer, multiple sclerosis, and diabetes^{5,13} To explore curcumin's therapeutic potential for rheumatoid arthritis, one of the most inflammatory diseases known, a distinguished team of international researchers decided to examine the benefits of curcumin. Based in the US at Baylor University Medical Center and in India at the Nirmala Medical Centre, the team's members represent some of the most advanced thinkers in the field.

Curcumin's Effectiveness Against Rheumatoid Arthritis

The researchers enrolled 45 people with active rheumatoid arthritis during a flare-up of the disease.⁵ That strategy allowed the researchers to test curcumin's effects at the peak of the inflammatory response. Each of the 45 patients was randomly assigned to one of three study groups. Group 1 was the curcumin-only group. Each patient in this group received 500 mg/ day of the superior-absorbing curcumin .5,14,15 Group 2 received the curcumin formulation in addition to 50 mg/day of the non-steroidal anti-inflammatory drug diclofenac sodium. Group 3 received only diclofenac.

TABLE 1: Multiple Molecular Targets Blocked by Curcumin^{7,40}

Molecular Target Inhibited by Curcumin	Pathologic Effect
Tumor Necrosis Factor (TNF)	Destroys joint cartilage and other tissues
Vascular Endothelial Growth Factor (VEGF)	Promotes excessive blood vessel growth in inflamed joints and in cancers
Human Epidermal Growth Factor (EGF)	Promotes growth and activity of cells involved in joint destruction in rheumatoid arthritis ³² and in many cancers
Estrogen Receptors	Promote growth of many breast cancers; also decrease effectiveness of drugs used in rheumatoid arthritis ³³
Nuclear factor-kappa B (NF-kB)	Potent inducer of the inflammatory cascade by activating the genes responsible for producing inflammatory compounds

Curcumin suppresses activity of at least 5 categories of molecular signals that promote inflammation and joint destruction in rheumatoid arthritis, and are implicated in many cancers.

All patients took their assigned drug regimen for 8 weeks.

Throughout the study, the patients were evaluated using a standard rheumatoid arthritis disease activity score.⁵ In addition, blood tests were done at the beginning and the end of the treatment period, to determine the patients' overall degree of inflammatory responses. Patients also assessed their own pain levels on a 0-10 scale. Finally, the researchers tracked the number of patients who achieved improvements of 20%, 50%, or 70% in tenderness or swollen joints by the end of the

The results were compelling, and demonstrated the practical advantages of curcumin over the standard drug treatment.

Curcumin-treated patients hurt less. All patients in the study experienced significant improvements in their disease activity scores by the end of the study.⁵ Patients in the curcumin-only group showed improvement of 44.5%; improvement was 44.4% in the curcumin plus diclofenac group, and 42.1% in the diclofenac-only group. (Patients' self-measured pain scores showed a greater difference in favor of the curcumin-only group, which had a mean 60% reduction in pain scores; the curcumin-plus-diclofenac group's mean reduction was 56%; and that of the diclofenaconly group was **50%**.)

Curcumin-treated patients' joints were less swollen and tender. The curcumin-only group had the largest number of patients experiencing 20%, 50%, or 70% reductions in overall joint swelling and tenderness (93%, 73%, and 33%, respectively).5

Curcumin-induced measurable changes on blood tests of inflammation. These impressive improvements in joint pain and swelling were matched by changes in blood markers of inflammation. For scientists, these improvements in the patients' blood markers of inflammation are exciting proof that curcumin is hitting its multiple targets and quelling the inflammatory process.

For example, the curcumin-only and curcuminplus-diclofenac groups saw reductions of 11.2 and 13.3% in the erythrocyte sedimentation rate test, a measure of inflammation; the diclofenac-only group had just an 8.3% reduction. Still more dramatic results were seen on the more sensitive C-reactive-protein (CRP) measurement that is capable of detecting systemic inflammation; the curcumin-only group had a **52**% reduction in CRP, the curcumin-plus-diclofenac group had a 26.9% CRP reduction, and the diclofenaconly group had a 1.5% increase in CRP.5

Curcumin-treated patients had no side effects. While patients in the groups receiving diclofenac experienced drug-related adverse events, those in the curcumin-only group had none at all.



Control Joint Inflammation with Curcumin

- Rheumatoid arthritis, a highly inflammatory condition, is the second most-common form of arthritis.
- Standard treatments for rheumatoid arthritis do little to change the underlying inflammatory causes of the disease; instead, they simply mask the symptoms while joint destruction continues.
- The more effective "biological agents" available today are not only costly but potentially dangerous in their wide array of side effects.
- Curcumin, a natural spice-derived nutraceutical, has shown promise in reducing inflammation in a host of conditions, but its usefulness has been limited by its low bioavailability in humans.
- A new form of curcumin, BCM-95[®], has been developed with nearly 7 times the bioavailability of standard curcumin; it also remains at active levels in the blood for nearly twice as long.
- A clinical trial of BCM-95® in patients with active rheumatoid arthritis demonstrated superiority on most measures to a standard anti-inflammatory drug.
- Curcumin, and BCM-95® in particular, may hold hope for sufferers of osteoarthritis as well and may also be active in preventing other inflammatory conditions such as cancer and the consequences of obesity.

In summary, this study was the first to demonstrate that curcumin is superior to a standard antiinflammatory drug for use in rheumatoid arthritis. It also showed that adding the standard drug did little to enhance the effect of curcumin acting alone; indeed, on many of the study's measures, curcumin alone outperformed the drug/curcumin combination.⁵ Let's now look at the special characteristics of the curcumin formulation that was used in this study. Those characteristics not only explain this study's success, but they also open the door to similar improvements in other inflammatory diseases for which curcumin holds promise.

Enhanced Bioavailability

Despite its clear ability to reduce markers of inflammation in laboratory studies, development of curcumin as a human nutraceutical has been hampered by one major obstacle. Curcumin in its natural state is not well absorbed from the human intestinal tract. In addition, it appears to be rapidly broken down both in the intestine and after absorption into the bloodstream. 14,16,17

That has meant the need to deliver very large doses of the supplement, doses so large that in some cases people have balked at the size and number of capsules required to achieve a good effect. 14,18,19 Doses as high as 12,000 mg (that's 12 grams, more than a third of an ounce) have been used in efforts to get significant amounts of curcumin into the bloodstream.¹⁸ At such high doses, even curcumin can produce uncomfortable symptoms such as abdominal fullness and bloating, though no true toxicity has been demonstrated.¹⁹

To improve effectiveness and reduce the dose size required, researchers in the rheumatoid arthritis study made use of a specialized curcumin complex that has increased bioavailability. Bioavailability is a measure of how much of a given dose of a drug or nutrient makes it into the bloodstream for delivery to target tissues.

Researchers showed in 2008 that curcumin's bioavailability could be enhanced through a very simple expedient process.¹⁴ Curcumin is first extracted from the turmeric root. Next, it is highly purified,



What Is Rheumatoid Arthritis?

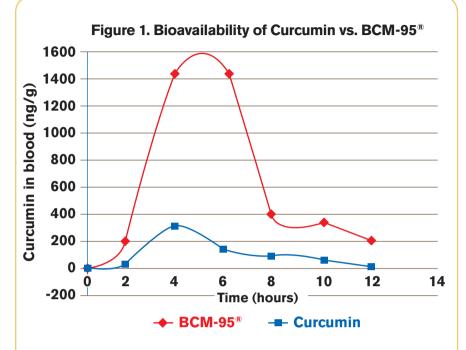
Although many people use the term "arthritis" to refer to any condition involving painful, achy, swollen joints, there are actually several different forms of the disease. The most common form of arthritis is osteoarthritis, formerly known as "degenerative arthritis." While less common than osteoarthritis, rheumatoid arthritis still affects some 1.5 million US adults.36 Rheumatoid arthritis is more than twice as prevalent among women as among men.37

Rheumatoid arthritis is an inflammatory disease that most obviously affects the joints, but its impact is seen in tissues and organ systems throughout the body. Inflammation centers on the membranes lining the affected joints, causing them to swell, limiting their movement, and causing pain. Over time, those inflamed membranes erode the cartilage that normally

cushions the joint, and eventually they even erode away the bone itself. That can deform the joint and further impair movement.

Symptoms of rheumatoid arthritis are pain, swelling, and redness of the joints. It can begin at any age (unlike osteoarthritis, which doesn't occur until at least mid-life). There is as yet no known cure for rheumatoid arthritis.37

Recent science is showing that osteoarthritis has a major inflammatory component as well, contrary to our long-held beliefs.38 That's good news for the millions of sufferers of osteoarthritis, because curcumin's powerful and multi-targeted suppression of inflammation may offer relief for them as well as for those with rheumatoid disease.



Results from a study of BCM-95® and regular curcumin in human volunteers. 15 Volunteers consumed equivalent doses of standard curcumin and BCM-95® supplements. Blood was drawn before the dose, and at 2, 4, 6, 8, 10, and 12 hours after. Curcumin levels in blood were determined using standard laboratory techniques. Peak blood levels of curcumin in blood of BCM-95® recipients were 5-7 times greater than those in standard curcumin recipients.

and then reconstituted with certain other components of the original turmeric plant. Those constituents are thought to increase intestinal absorption and also reduce natural breakdown of curcumin in the body. The reconstituted curcumin mixture used by most Life Extension members today is called BCM-95[®].14

Clinical studies of BCM-95® in human volunteers have shown that its bioavailability is nearly seven times greater than that of a standard extract of curcumin. 14,15 BCM-95® was also more than **six times** as bioavailable as a leading mixture of curcumin with two other natural products, lecithin and piperine.14 BCM-95® is not only better absorbed than standard curcumin, it achieves significant blood levels and remains in the blood longer (See figure 1 above). 15 This means that your body can reap the beneficial effects of curcumin for considerably longer. This advantage applies not only to rheumatoid arthritis, but to other conditions for which curcumin may be indicated.

Curcumin and **Osteoarthritis**

Osteoarthritis, long thought to be a purely "degenerative" disease, is now recognized to have multiple inflammatory components. Scientists are rapidly exploring curcumin's potential role in suppressing those inflammatory processes.

One of the key features of osteoarthritis is the breakdown of the slippery cartilage that lines joints, lubricating them and cushioning them from the impact of constant use. 12 That cartilage breakdown is triggered by multiple pro-inflammatory signaling molecules, many of which are secreted from the membranes that line the joint.10

Studies now show that curcumin can protect this vital lubricating cartilage in several ways. Curcumin directly counteracts the effect of those inflammatory molecules, especially within cartilage cells themselves.¹² In the joint-lining membranes, curcumin suppresses the growth of the inflammatory cells that are responsible for cartilage destruction.²⁰ And curcumin even inhibits the "cartilageeating" enzymes that carry out the destructive process itself.^{21,22}

Highly Bioavailable Curcumin Fights Fat-Related Inflammation

The availability of the highly bioavailable form of curcumin, BCM-95®, is making possible new progress in old diseases. BCM-95® was recently shown in an animal study to reduce the amount of inflammation associated with obesity, a major cause of accelerated aging, diabetes, and other chronic diseases.^{24,39} In that study BCM-95® also reduced levels of one particular inflammatory molecule, IL-2 that is associated with loss of brain cells in Alzheimer's disease.39 These early reports illustrate the tremendous potential associated with the dramatic enhancement in bioavailability of curcumin in tissues throughout the body.

Curcumin Fights Cancer

Curcumin is taking center stage in the fight against cancer. To date, curcumin has been shown in human clinical trials to prevent or mitigate cancers of the gastrointestinal tract (such as colorectal and esophageal cancers), the breast, prostate, liver, cervix, and skin, as well as a form of leukemia, chronic lymphocytic leukemia, common in older adults. 41-44 Promising results are also being published in studies of curcumin and pancreatic cancer, one of the deadliest cancers that afflict humans. 45-48 Most of these trials have been early stage studies, with small numbers of subjects, but their preliminary results are encouraging.

Animal and basic lab science studies are shedding increasingly clear light on just how curcumin exerts its anticancer activities. Here's what we know:

Curcumin prevents DNA damage. Damage to your DNA is inevitably the first step in cancer development. Damaged or "mutated" DNA can trigger unbridled growth of cells that lack normal restraints, leading to a full-blown tumor. Studies show that curcumin can reduce the rate of cancer-inducing DNA damage. 49,50 In one human study, colon cancer patients supplemented with curcumin (up to **3.6 g/day** for 7 days) had a 58% reduction in DNA damage in their intestinal tissue.51

Curcumin ramps up liver detoxifying enzymes. Many cancer-causing chemicals enter your body each day; your body relies on sophisticated detoxification systems, mostly in the liver, to render those toxins harmless. Curcumin powerfully increases production of those enzymes, boosting your body's ability to rid itself of dangerous tumor-inducing substances.49

Curcumin quenches the fires of inflammation. Inflammatory processes throughout your body promote cancer development. Curcumin acts at multiple molecular targets to shut down chronic inflammation and reduce production of the chemical cytokines that promote it, directly reducing your risk of developing a tumor. 49,52,53 When a group of colon cancer victims took curcumin (3.6 g/day for four months), their blood levels of inflammatory cytokines dropped by up to 62%.49

Curcumin promotes cancer cell suicide. Normal cells are equipped with a "self-destruct" program that causes them to die if they begin to reproduce too fast or become damaged in ways that could harm your body. Cancer cells disable that program early in their progression, allowing their explosive replication. Curcumin switches the self-destruct program back on, causing abnormal cells to quickly bow out.54-56



Curcumin breaks the link between obesity and cancer. The risk of almost all cancers is increased in obesity. That's in part because of raised insulin levels seen in obese people and those with type 2 diabetes (insulin is a growth factor that promotes cancer development).17 By reducing insulin resistance, curcumin helps lower your insulin levels and reduce your cancer risk.57,58

Curcumin suppresses molecules cancers need to sustain their growth and invade your tis**sues.** As tumors grow, they stimulate formation of new blood vessels to support their voracious appetites for nutrients and oxygen. They over-produce molecules that help them "stick" to adjacent tissue and invade it. Finally, they make enzymes that literally "melt" the protein glue that holds normal tissues together, allowing them to spread to far away parts of the body through metastasis. Curcumin acts to suppress production of many of these cancer-promoting chemicals.59

Curcumin stops pre-malignant tissue from progressing. Cancers in some organs, such as the intestine and cervix, develop slowly enough that we can detect areas of abnormality before they turn malignant. Removing them, however, requires invasive procedures that don't always catch every lesion and that bring with them some risk of their own. Human studies show that curcumin supplementation triggers improvement in precancerous lesions of the bladder, mouth, stomach, and cervix.41,60 Curcumin supplementation reduced the number and size of precancerous intestinal polyps by 60% and 51%, respectively, in people at high risk for colon cancer.61

Drug Category	Used In	Intended Effect	Side Effects
Non-Steroidal Anti-inflam- matory Drugs (NSAIDs, e.g., ibuprofen, diclofenac)	Osteoarthritis and Rheumatoid Arthritis	Relieve joint pain and inflammation	Gastrointestinal bleeding, liver toxicity, allergic reactions ^{5,25}
Glucocorticoids (steroids given orally or by injection into the joint)	Osteoarthritis and Rheumatoid Arthritis	Relieve inflammation	Gastrointestinal bleeding, high blood pressure, osteoporosis, immune suppression, weight gain, loss of insulin sensitivity ²⁶
"Conventional" Disease- Modifying Anti-Rheumatic Drugs (DMARDs, e.g., methotrexate, leflunomide, sulfasalazine,)	Rheumatoid Arthritis	Slow disease progression	Immune suppression, increased infection risk, may interfere with responses to vaccination ²⁷
"Biologic" DMARDs (e.g., infliximab, etanercept)	Rheumatoid Arthritis	Block or reduce production of inflammatory mediators	Increased risk of infection. ²⁸⁻³⁰ injection site reactions, ^{28,29} may interfere with responses to vaccination, ²⁷ disturbed lipid profile ³¹

A pair of human studies showed that joint pain was reduced and joint function was improved, in patients taking a commercial curcumin complex that was formulated to improve absorption.²³ Those studies, like the one detailed above, also demonstrated improvements in blood tests measuring inflammation.

Summary

Inflammation lies at the heart of virtually all diseases associated with aging. In fact, people with inflammatory conditions experience accelerated aging that affects every tissue and organ in their bodies.

Rheumatoid arthritis is one of the most aggressive and destructive of the inflammatory conditions that afflict humans, and it is one that has proven resistant to all but the most dangerous forms of standard medical treatment.

Curcumin has held out great hope for management of all kinds of inflammatory diseases, but its benefits have been hampered by its poor absorption and availability to inflamed tissues. A superior-absorbing curcumin formulation (BCM-95®) has up to 7 times the bioavailability of commercial products.

A clinical trial of BCM-95® among sufferers of active rheumatoid arthritis demonstrated not only that the formula was safe, but also that the effectiveness of only **500 mg** a day exceeded that of a standard anti-inflammatory drug.⁵

Additional new studies suggest that this curcumin formula can reduce obesity-associated inflammation as well.²⁴ Together, these findings suggest that highly bioavailable curcumin represents an entirely new chapter in the management of some of humankind's most feared diseases.

If you have any questions on the scientific content of this article, please call a Life Extension Health Advisor at 1-866-864-3027.

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HALF OF AGING HUMANS IN THE DEVELOPED **WORLD ARE** MAGNESIUM DEFICIENT!

To order *Neuro-Mag*™ Life Extension **Magnesium L-Threonate** LifeExtension Neuro-Mag Magnesium L-Threonate Neuro-Mag **Capsules or Powder** call 1-800-544-4440 or visit www.LifeExtension.com Item # 01603 Item # 01602

YOU MAY BE ONE OF THEM.

Optimal uptake of magnesium may now be obtained in a novel, highly absorbable form called **Neuro-Mag™ Magnesium L-**Threonate, available in capsules or tasty natural lemon-flavored powder.

A Critical Brain Booster. . .

Magnesium is needed for more than **300** biochemical reactions in the body.2

Long known for its role in cardiovascular³⁻⁵ and bone health, energy metabolism and mood, researchers are now focusing intensely on magnesium's benefits for cognitive function.2

Unfortunately, it is very *hard* for your body to maintain optimal levels of magnesium in the **brain**.² This problem is of special concern for maturing individuals, as magnesium deficiency increases over time.1

Scientifically Advanced, Lab Tested

Most commercially available magnesium supplements are not readily absorbed into the central nervous system.

To overcome this obstacle, an innovative form of magnesium is being introduced called **Neuro-Mag™**, shown to specifically target the aging brain and nervous system.

In pre-clinical models, magnesium L-threonate contained in **Neuro-Mag**[™] boosted magnesium levels in spinal fluid by an impressive 15% compared to no increase with conventional magnesium.²

Even more compelling, animal models revealed improvements of 18% for short-term memory and 100% for long-term memory using the Neuro-Mag[™] form of magnesium.2

Capsules or Powder...Value Priced

The suggested daily dose of three **Neuro-Mag**™ Magnesium L-Threonate Capsules provides 2,000 mg of Magnesium-L-Threonate. While this supplies a modest **144 mg** of elemental magnesium, its superior *absorption* into the bloodstream and nervous system make it a preferred choice for aging humans to supplement with.

This highly absorbable brain health-supporting magnesium is also available in a good tasting powder mix called Neuro-Mag™ Magnesium L-Threonate with Calcium and Vitamin D3 Powder. In addition to its appealing natural lemon flavor, the one-scoop per day serving size supplies the same amount of magnesium plus 500 mg of calcium (as calcium lactate gluconate—a highly soluble form of calcium) and 1,000 IU of vitamin D3.

This offers maturing individuals an easy way to obtain these key nutrients in one simple formula.

A bottle containing 90 vegetarian capsules of Neuro-Mag[™] Magnesium L-Threonate or <u>30</u> scoops of Neuro-Mag[™] Magnesium L-Threonate with Calcium and Vitamin D3 Powder retails for \$40. If a member buys four bottles, the price is reduced to \$27 per bottle. Contains corn.

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ARE YOU GETTING Curcumin's **BENEFITS?**

Curcumin is the health-promoting trace compound derived from the Indian spice turmeric. But not all turmeric is alike.

The curcumin found in the vast majority of dietary supplements is derived from turmeric that is nutritionally inferior.

Why? Almost all growers harvest turmeric at the point when the turmeric root turns its signature yellow color, but before it has fully matured.

The turmeric root requires more time in the ground for highly beneficial phytonutrients called curcuminoids and sesquiterpenoids to attain peak concentrations.

Life Extension®'s Super Bio-**Curcumin**® derives from turmeric that is grown with organic practices, cultivated to maturity, then specially transported and processed to preserve and deliver the root's most complete nutritional profile.

In recent studies comparing the effects of standard curcumin against turmeric extracts comparable to **Super Bio-Curcumin**[®], researchers observed:1,2

- Nearly <u>twice</u> the support for immune health.
- Approximately twice the support for inflammatory issues.
- Almost double the antioxidant support.

A separate study indicated that an antioxidant-rich curcumin extract3 provided powerful support for heart health.

Unrivaled Potency and Absorbability with BCM-95®

Curcumin is neither absorbed nor retained well in the blood, which is another challenge facing those who wish to maximize its benefits.

The highly popular Super Bio-Curcumin® uses BCM-95®, a patented, bioenhanced preparation of curcumin. It has been shown to reach up to 7 times higher concen**tration** in the blood than standard curcumin.4

The graphs on this page illustrate that one 400 mg vegetarian capsule per day of Super Bio-Curcumin® supplies the equivalent of 2,500-2,800 mg of commercial curcumin supplements.

A bottle containing 60 vegetarian capsules of **Super Bio-Curcumin**® retails for \$38. If a member buys four bottles, the price is reduced to only \$26.25 per bottle. Contains rice.

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CAUTION: Do not take if you have gallbladder problems or gallstones. If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

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How Much Curcumin Are You Absorbina?

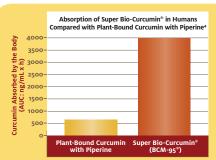


Chart 1. Super Bio-Curcumin® (BCM-95®) showed 6.3 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with plantbound curcumin with piperine (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin absorbed by the body over 8 hours).

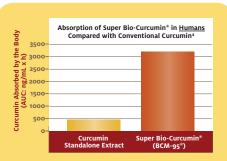


Chart 2. Super Bio-Curcumin® (BCM-95®) showed 6.9 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with conventional curcumin (as measured by the area under the curve [AUC] in a plot of blood levels against time. that is, the total amount of curcumin absorbed by the body over 8 hours).

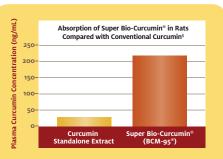


Chart 3. Bioavailability in rats fed with BCM-95® is 7.8 times higher than conventional curcumin.



ArthroMax[™] Advanced with UC-II[®] and AprèsFlex[™]

Now with Dual-Action Support for Aging Joints!

As you grow older, age-related stiffness and discomfort in the joints becomes a fact of life. Activities once routine become a challenge as limited mobility hampers your every move.

You now have a more <u>potent</u> option to provide broad-spectrum support for aging joints.

ArthroMax[™] Advanced with UC-II° and Après-Flex[™] is a multi-nutrient formula based on the very latest data on natural support for joint health. The new ArthroMax[™] formula provides more joint support than ever before, enhanced with two innovative, clinically validated ingredients: AprèsFlex[™] and UC-II°.

Better Absorption for Optimum Benefit

AprèsFlex™ represents a quantum leap forward in the delivery to aging joints of **boswellia**, long prized for its ability to help with inflammatory issues. It is a superior inhibitor of the enzyme *5-lipoxygenase* or *5-LOX*.

Excess activity of 5-LOX results in the accumulation of *leukotriene B4*, a pro-inflammatory compound that affects aging joints. **Boswellia** has been shown to bind directly to the 5-LOX enzyme in our bodies, preventing it from facilitating production of pro-inflammatory leukotrienes.^{1,2}

AprèsFlex™ boswellia *absorbs* into the blood **52%** *better* than previously available forms of boswellia, for superior effectiveness.

ArthroMax™ Advanced with UC-II[®] and AprèsFlex™

In addition to AprèsFlex™, the new ArthroMax™ contains a novel standardized chicken cartilage: UC-II®.

New data show it helps with immune issues that can impact joint discomfort and ease of motion in aging individuals.

Two capsules of the new ArthroMax™

Advanced with UC-II® and AprèsFlex™ provide the following nutrients in one convenient, joint-protecting formula:

UC-II® standardized chicken cartilage	40 mg
Glucosamine sulfate 2KCI (from corn)	1500 mg
AprèsFlex™ (Boswellia serrata) extract	100 mg
Boron (calcium fructoborate as patented FruiteX B° OsteoBoron°)	1.5 mg



The retail price of a bottle of 60 capsules of ArthroMax™ Advanced with UC-II® and AprèsFlex™ is \$36. If a member buys four bottles, the price is reduced to \$24 per bottle.

Item # 01618

To order the new ArthroMax™
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ArthroMax™ with Theaflavins and AprèsFlex™,

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UC-II® is a registered trademark of InterHealth N.I. UC-II® brand undenatured type II collagen. U.S. Patents 5,645,851, 5,637,321, 5,529,786, 5,750,144, 7,083,820, EPO Patent EP1435906B1, U.S. and world-wide patents pending.

ArthroMax[™] with Theaflavins and AprèsFlex[™]

ArthroMax is also available with **Black Tea Theafla-vins** (without UC-II®) to protect against immune attack in the joints via a separate mechanism.

Inflammatory reactions are regulated by a series of "cytokines" produced in the body. Normal aging results in an unfavorable balance of these cytokines that contributes to persistent inflammatory conditions. Studies have shown that a special fraction found in black tea suppresses proinflammatory cytokines at the genomic level. Scientists have found that these compounds called theaflavins uniquely downregulate the expression of genes and cytokines associated with inflammatory conditions.

ArthroMax™ with Theaflavins formula provides these bioactive theaflavin fractions along with methylsulfonylmethane (MSM), which contains sulfur components that are critically important in maintaining comfortable joint function.* ArthroMax™ with Theaflavins also contains FruiteX B® OsteoBoron®, a patented form of boron that is identical to natural plant forms found in food. Considered more bioavailable than other forms of boron, FruiteX B® Osteo-Boron® also supports healthy bones and joints.*

AprèsFlex™ (Boswellia serrata) extract	100	mg
Glucosamine sulfate 2KCl (from corn)	2000	mg
Methylsulfonylmethane (MSM)	1000	mg
Black Tea (Camellia sinensis) (decaf.) extract	440	mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBo		mg

The retail price of a bottle of 120 vegetarian capsules of **ArthroMax™** with **Theaflavins and AprèsFlex™** is \$44. If a member buys four bottles, the price is reduced to **\$30** per bottle.



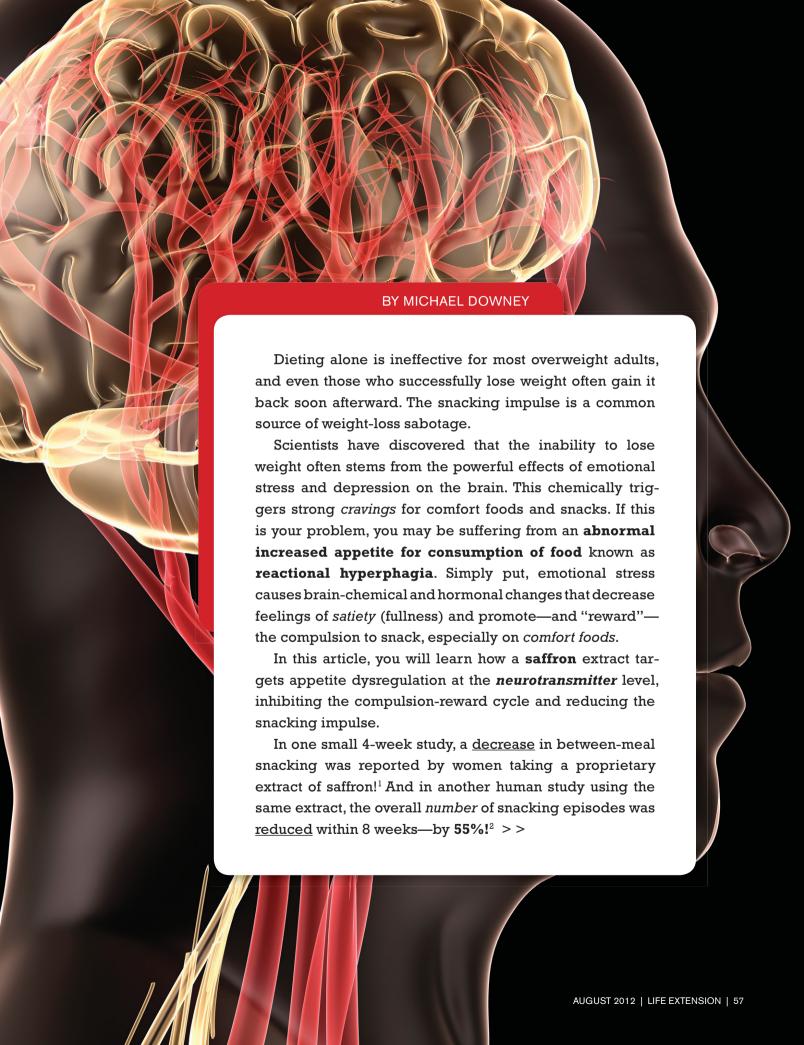
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Item # 01617

Block **Food Cravings** at Their Molecular Root







The restrictions of dieting often generate stress, anxiety, and depression. In some people, the resultant changes in *neurotransmitters* and *hormones* create an overwhelming impulse to seek out what scientists call "highly palatable," or comfort, foods.3-12

Surrendering to this impulse then triggers brain activity associated with reward, which temporarily alleviates stress, anxiety, and depression. This off-diet eating may result in weight gain, guilt, and renewed dieting—all stressors that perpetuate the cycle.^{3-10,13}

If this sounds like your dieting pattern, your brain and hormones may be sabotaging your weight-loss attempts, and leaving you with undeserved guilt and frustration.

You may have stress-induced reactional hyperphagia, which is defined as the abnormal increased appetite for consumption of food.8,13,14

Many people who are not dieting still experience emotional stress from other sources and experience the same compulsive-addictive form of emotion-based overeating. This "stress-snacking" feedback cycle can eventually lead to weight gain and more stress. It is no coincidence that high obesity rates have become an escalating health concern during this era of chronically high stress levels.3-14

To maintain a healthy weight comfortably, it is important to interrupt and block this sabotaging hyperphagic cycle.

The good news is that scientists have developed a botanical formulation that helps break this pattern.

Saffron is a spice that is constituted from the red stigmas of Crocus sativus L. In randomized, placebocontrolled research on humans, a standardized and proprietary extract of saffron reduced the desire to snack, diminished the *craving* for comfort foods, produced satiety, and facilitated weight loss-without any stimulant effect, side effect risk, or unrealistic level of continuous willpower.

The 'Feed-Feedback' Cycle

Many weight-loss drugs that are meant to reduce appetite are dangerous. For example, phenylpropanolamine is associated with hemorrhagic stroke.17

However, a particular extract of saffron appears to be unique in its ability to target the neurochemical pathways underlying the craving for comfort foods and the compulsion to eat between meals (reactional hyperphagia).

Growing research has been shedding light on these pathways of compulsive snacking, and how they set up a feed-feedback cycle that is essentially stress, stressrelief, stress, stress-relief, and so on.

Early research showed that the food restrictions of weight-loss diets are major sources of stress and anxiety. Some people respond to this greater stress by developing cravings for specific (comfort) foods associated with stress relief, making them more susceptible to obesity than others.3-6

In 2004, a rodent study demonstrated that during chronic stress, glucocorticoids—hormones that are generated by the hypothalamus-pituitary-adrenal (HPA) axis and that predominantly affect metabolism often stimulate activities in the brain that induce a preference for comfort food. Rats under stress consumed no more calories than the placebo group, but showed a distinct desire for getting a greater proportion of their calories from comfort food. Ingestion of comfort food diminished the signs of stress, creating a reward feedback—completing the feed-feedback cycle.⁷

A study in 2007 reviewed earlier research on both animals and humans, and proposed a theory termed Reward Based Stress Eating. Evidence indicated that during stress, cortisol (a glucocorticoid), together with the body's reward circuitry, causes dysregulation of the finely tuned balance of appetite control. Cravings increase stress, which triggers an increase in the reward value of highly palatable (comfort) food. The result is an increased intake of high-calorie snack food, and a greater accumulation of visceral fat.8

Then, in 2009, researchers found that—in response to glucocorticoid-induced increases in comfort food intake—circulating insulin levels rise. These increases, as well as greater deposition of abdominal fat, are directly and specifically linked to higher consumption of comfort-foods—rather than to higher consumption of calories from any source. These insulin effects appeared to dampen the response to stress. thus providing reward feedback (stress relief) for eating comfort foods.9

In a landmark study published in 2010, researchers found that the *dysregulated brain reward pathways* that trigger drug and alcohol addiction are identical to the biomolecular mechanisms behind comfort-food cravings.10

In a 2011 study, scientists discussed the circular relationship between hyperphagia (increased appetite), comfort food intake, and obesity. They suggested that in some individuals, the presence of this feed-feedback cycle at an early age may lead directly to obesity later in life. They further suggested that *obesity* itself may increase signaling along inflammatory, oxidative, and mitochondrial stress pathways—altering normal reward functions and promoting compulsive snacking.18

On the heels of these findings, and with obesity at epidemic levels, scientists searched in earnest for a way to safely break the feed-feedback cycle.

Targeting the Biochemistry of Appetite

In the quest for a novel intervention to block reactional hyperphagia and the cycle of compulsive snacking, attention quickly turned to the active components in **saffron**—and for a number of good reasons.

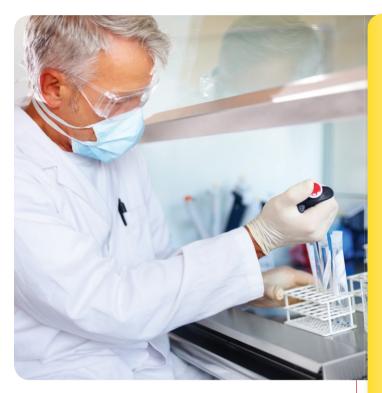
First, now that dieting and stress had been found to increase the reward value of comfort food for many people,8 it was natural to examine agents believed to modulate stress in order to identify those that might beneficially affect the appetite and snacking impulse. In ancient medical systems, saffron has traditionally been used to reduce anxiety, relieve stress, and enhance mood.19

Second, no effective FDA-approved drug is available that can regulate the neurochemistry of appetite without substantially dangerous side effects,20 which have been found to include pulmonary hypertension and heart valve disease.21 Scientists realized that—if verified to be effective in inhibiting the snacking compulsion in placebo-controlled studies on humans saffron would constitute a safe and natural alternative.

Cut Cravings With Saffron

- Stress, anxiety, or depression can induce a biomolecular mechanism that causes the comfort-food cravings and compulsive snacking that sabotage many weight-loss programs.
- Normal brain reward pathways are disrupted by this unbalancing of hormones and neurotransmitters, resulting in the feed-feedback cycle that causes food cravings and emotion-based snacking.
- A study recently found this negative cycle, known as reactional hyperphagia, to be virtually identical to the mechanism underlying drug addiction.10
- An extract of **saffron** (Crocus sativus) uniquely targets this appetite dysregulation at the **neurotransmitter** level and inhibits the snacking compulsion.
- Placebo-controlled studies found that 176.5 mg a day of a proprietary saffron extract decreased snacking events by an average of 55%!1,2





Third, neurotransmitter imbalance, particularly low levels of serotonin, has been shown to increase vulnerability to overeating, food cravings, and depression.²² A number of journal-published studies had shown that *safranal* and *crocin*, active constituents of saffron, have demonstrated effects comparable to prescription medications in mitigating the symptoms of depression.²³⁻²⁵ One of the most commonly prescribed group of anti-depressant medications are the selective serotonin reuptake inhibitors (SSRI), which are well known to produce a number of adverse side effects, including sedation, weight gain, sexual dysfunction, and suicidal thoughts.²⁶⁻²⁸ This improved serotonin-enhancing activity suggested that saffron may be a safe and potent weapon to break the feedfeedback cycle and inhibit reactional hyperphagia for several reasons:

- 1. Stress increases levels of *cortisol*, which can cause dysregulation of appetite—serotonin, through *serotonergic neurons*, <u>regulates</u> appetite.¹²
- 2. Stress activates the entire HPA axis, which is involved in the feed-feedback cycle—and serotonin regulates and <u>normalizes</u> HPA activity.²⁹
- 3. Compulsive snacking and **reactional hyperphagia** are strongly related to depression, anxiety, and mood—and serotonin can <u>improve</u> all of these snacking-related emotional states.³⁰

Inhibiting the Biochemistry of Comfort-Food Cravings

- Dieting and other stressors often disrupt levels of certain hormones and neurotransmitters.
- This triggers an increase in the biochemical reward value of comfort food.
- The result is a mechanism known as reactional hyperphagia, involving intense food cravings.
- These irresistible compulsions increase snacking, comfort-food intake—and as a consequence, weight.
- The abnormal feed-feedback cycle promotes more dieting, more stress—and more cravings.
- No drug is available that can safely rebalance the neurochemistry of appetite.
- Constituents in saffron extract are believed to increase serotonin activity in the brain, which then normalizes the biochemistry of appetite regulation.
- Restored appetite regulation results in improved mood, increased satiety, and a decrease in between-meal food cravings.^{1,2}
- 4. Stress increases levels of glucocorticoids, which can diminish the *transport efficiency* of serotonin, in turn lowering serotonin activity and negatively affecting <u>both</u> mood and appetite³¹—promoting serotonin activity would be a natural way to <u>counter</u> this transport effect and favorably modulate both mood and appetite.

In subsequent animal and human studies, saffron extracts proved highly effective in safely managing depression and anxiety³²⁻³⁵—the same emotional disorders that trigger **reactional hyperphagia**.

However, this constituted only an indirect link between saffron and modulation of the snacking compulsion. Scientists still needed to prove that saffron's powerful ability to modulate stress would in turn translate into a significant reduction in hyperphagic snacking, both in terms of desire and behavior.

For the gold standard in scientific proof, this would demand investigating the effects of saffron extract—specifically on snacking desire and frequency—by conducting randomized, placebo-controlled, double-blind studies on humans.

Inhibiting the Snacking **Impulse in Humans**

To corroborate that a proprietary extract of saffron targets the neurochemistry at the root of compulsive eating, scientists first conducted a small placebo-controlled, double-blind pilot study on a small group of 16 women. Half of the women were given the proprietary saffron (Crocus sativus) daily for extract for 4 weeks, while the other half took placebo.

Remarkably, all of the women taking the saffron extract decreased their between-meal snacking, while women taking the placebo experienced no improvement! Equally noteworthy, the women in the saffron group reported <u>decreased</u> feelings of hunger at lunch and dinner. There was an average weight loss, largely in the form of fat from the thighs, of **3.63 pounds**.¹

Following these findings, scientists launched a full-scale, randomized, double-blind, placebo-controlled clinical trial, enlisting 60 mildly overweight, female volunteers ranging in age from 25 to 45. This time, however, at least half of the women selected suffered from *compulsive between-meal snacking* behavior, although participants were not assessed specifically for their level of anxiety or stress. Women



were excluded if they had any history of cancer, diabetes, gastric surgery, pathological eating disorders (such as anorexia and bulimia nervosa), abnormal liver or kidney function or were currently using any medications (such as antidepressants) or supplements that might interfere with the results.

As before, half of the subjects were given **daily** doses of 176.5 mg of patented saffron extract but this time, for a full 8 weeks—while the others took an identical-looking placebo. All subjects were instructed to otherwise maintain their normal dietary and lifestyle habits, and all between-meal food consumption was recorded.

The saffron extract significantly reduced the frequency of snacking events to a degree that the journal-published study described as "most striking." At the beginning of the study, both groups indulged in an average of 12 between-meal snacks per week. After 8 weeks, the number of snacking events for the placebo group fell somewhat to **8.9** per week, a decrease of 28%. By comparison, between-meal snacks for the saffron group decreased to just 5.8 per week, a snacking decrease, over 8 weeks—of 55%!2

The reduction in snacking events among the saffron-extract group paralleled an increase in satiety sensation. These women reported significantly reduced feelings of hunger before meals, and a reduced feeling of the "need" to snack between meals. These saffron subjects experienced significantly greater feelings of alertness and energy.

The key objective of the study was to assess the effect of saffron extract on the frequency of snacking, and because the volunteers were only mildly overweight, substantial weight loss was not expected. Still, the increased satiety and 55% decreased snacking had an effect on weight. The saffron group experienced an average weight loss of over 2 pounds during this 8-week period of eating normally!2

While no conclusions could be reached regarding the mechanism of action for saffron extract, the study team did note that new saffron research data suggests that the benefits could be related to saffron's impact on mild-moderate anxiety.2 This finding was upheld in the current study when during the administration of a global health survey at the end of supplementation, those in the saffron group reported feeling significantly more alert and energetic than those in the placebo group. This same trend continued on follow up several weeks after completion of supplementation.2 This modest weight loss shows why more than just reduced calorie consumption is needed to produce meaningful fat loss. Taking standardized green coffeeberry extract before each meal resulted in 17.6 pounds of weight loss in a study published in 2012.³⁶

Broader Benefits

In addition to its ability to target the *biochemical root* of compulsive snacking, saffron has been shown to exert a wide range of other protective health effects. The mechanisms behind these broader benefits are not yet clear, but they may stem from the ability of saffron's constituents to modulate the HPA axis, as well as serotonin and other neurotransmitters.

Cancer is a growing health concern worldwide, causing more than **7.5 million** deaths each year.³⁷ Botanical extracts have been one of the main sources for development of chemopreventive agents.³⁸ Recent scientific evidence, both *in vitro* and *in vivo*, has suggested that saffron extract and its main active constituents, can help inhibit carcinogenesis and tumorigenesis.³⁹⁻⁴² Rodent studies demonstrate that saffron can reduce the side effects of the anticancer drug **Cisplatin**® (*cisplatinum*).^{43,44} These findings have prompted extensive current research on saffron and its components, including *safranal* and *crocin*, as promising chemopreventive agents.

The mechanism for saffron's anticancer potential is not known but may be related to its demonstrated high free-radical scavenging activity.⁴⁵⁻⁴⁷

Saffron is thought to have some action in supporting the serotonergic system in the brain and is well supported through research as a natural anti-anxiety and antidepressant agent that does not include the side effects of pharmaceutical options.^{32-35,48} In fact, this same potential serotonin effect is believed to be largely behind its ability to <u>inhibit</u> comfort food impulses, compulsive snacking, and sugar cravings, as well as to promote weight loss.^{1,2,49}

Another benefit, research has suggested, is the potential of saffron to slow the progress of the eye conditions, macular degeneration and retinitis pigmentosa. 50-52

In traditional and folk medicine, saffron is used for many medical benefits, including as a remedy for pain (an analgesic), poor digestion, high blood pressure, high cholesterol, respiratory diseases, and Alzheimer's disease.⁵³

Summary

Scientists have discovered that there is a stress-induced mechanism behind the comfort-food *cravings* and compulsive snacking that sabotage many weightloss programs.

Unbalanced hormones and neurotransmitters disrupt the normal *brain reward pathways*. The result is an induced *feed-feedback cycle*, known as **reactional hyperphagia**, which causes food cravings.

Saffron

Saffron is a spice derived from the flower of the *Crocus sativus* plant, which is indigenous to southwest Asia. It is the most expensive spice in the world by weight—and for good reason.

Each plant holds a maximum of four flowers, and each flower holds three deep crimson *stigmas*. The tiny stigma, and the thin filament stalk connecting it to the flower, are harvested-by hand-and dried to make saffron.

There has been a great deal of scientific interest in the many complex metabolites found in saffron. Although saffron is estimated to contain over 150 chemical compounds, only about 40 to 50 constituents have so far been identified, two of which have been extensively studied. 54-77 The two main, *pharmacologically active* compounds in saffron are *crocin* and *safranal*. Crocin is a saffron-colored, water-soluble carotenoid, which provides saffron's color. 58 Safranal is the volatile oil responsible of the odor that is characteristic of saffron. 54 Other constituents include proteins, sugars, vitamins, flavonoids, amino acids, mineral matter, gums, and other chemical compounds. 78

Saffron has a long history of medicinal use in traditional folk medicine. Studies have concluded that extract of saffron combats depression, anxiety, and emotional stress. Some research suggests saffron's constituents have anti-carcinogenic (cancer-suppressing) and antioxidant properties. 9-42,45,46

Placebo-controlled studies on humans have recently established that a proprietary extract of saffron containing crocin and safranal uniquely targets appetite dysregulation at the *neurotransmitter* level. This substantially improves mood, and reduces food cravings and between-meal snacks.^{1,2}



A study recently found this cycle to be all but identical to the mechanism underlying drug addiction.¹⁰

A proprietary extract of **saffron** (*Crocus sativus*) uniquely targets this appetite dysregulation at the neurotransmitter level, inhibiting the snacking compulsion.

Placebo-controlled studies found that a daily dose of 176.5 mg of a proprietary saffron extract decreased the average number of snacking incidents by 55% and decreased between-meal snacking-for all of the women taking saffron!^{1,2}

If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.

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Bone Restore

With highly absorbable Magnesium Citrate!

Bone Restore combines critical **bone boosting** nutrients into <u>one</u> **superior formula**.

Bone Restore includes highly absorbable forms of calcium, a bioavailable form of boron, along with vitamin D3, magnesium, zinc, manganese, and silicon.

Bone Restore contains **magnesium citrate**, which is one of the most absorbable forms of magnesium.

The retail price for 150 capsules of **Bone Restore** is \$22.50. If a member buys four bottles, the price is reduced to just **\$14.63** per bottle.



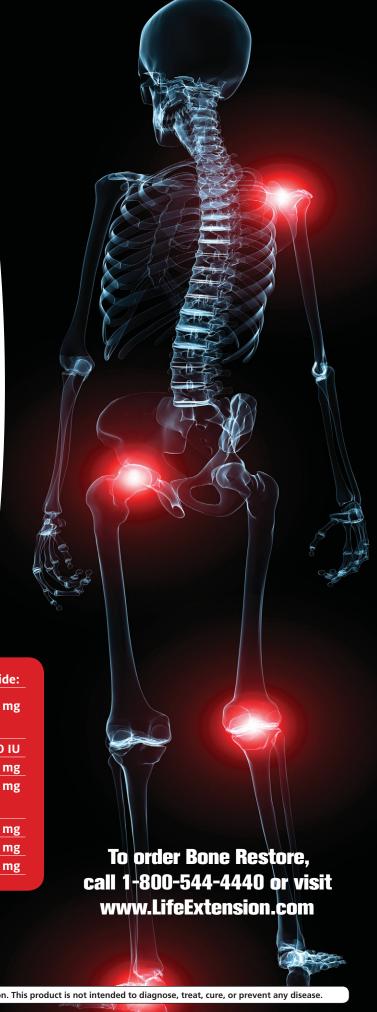
Just five capsules of Bone Restore provide:

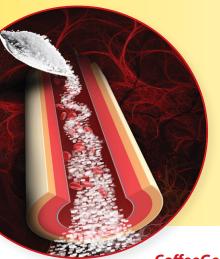
Highly Absorbable Calcium 1,200 mg (as DimaCal® dicalcium malate, TRAACS® calcium glycinate chelate, calcium fructoborate)

Vitamin D3	1,000 IU
Magnesium (as magnesium citrate)	100 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	3 mg
Zinc	2 mg
Manganese	1 mg
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Contains corn and rice.

Fruitex B° and OsteoBoron° are registered trademarks of VDF Futureceuticals, Inc. U.S. patent #5,962,049. DimaCal° and TRAACS° are registered trademarks of Albion Laboratories, Inc. Malate is covered by U.S. Patent 6,706,904 and patents pending.





NATURAL APPROACHES FOR OPTIMAL GLUCOSE CONTROL

Standardized chlorogenic acid supplements taken before meals can help many people achieve optimal glucose control.

Life Extension® offers a variety of nutrient blends rich in green coffee bean extract that provide potent doses of chlorogenic acid.

CoffeeGenic™ Green Coffee Extract with Glucose Control Complex

CoffeeGenic™ Green Coffee Extract with Glucose Control Complex contains 200 mg of CoffeeGenic™ Green Coffee Extract along with 4 ingredients formulated to help support healthy blood glucose levels already within normal range. Take one capsule 20-30 minutes before each meal to obtain the following nutrients in addition to Green Coffee Bean extract:

Each vegetarian capsule of CoffeeGenic™ Green Coffee Extract with Glucose Control Complex provides:

CoffeeGenic™ Green Coffee (Coffea arabica) Extract (bean) [std to 50% Chlorogenic acid (100 mg)]	200 mg

lodine25 mcg
(typical value naturally occurring from *Ascophyllus nodosum* and *Fucus vesiculosus*)

Chromium 150 mcg [as Crominex® 3+ chromium stabilized with Capros® (Phyllanthus emblica) Extract (fruit) and PrimaVie® Shilaiit)]

InSea^{2®} [proprietary composition of demineralized polyphenols from brown seaweeds Kelp (Ascophyllum nodosum) and Bladderwrack (Fucus vesiculosus)]

Integra-Lean® African Mango (Irvingia gabonensis)
proprietary Extract (seed)

100 mg

Green Tea (Camellia sinensis) Decaffeinated Extract (leaf) **100 mg** [std. to 98% polyphenols by UV (98 mg), 45% EGCG by HPLC (45 mg)]

 CoffeeGenic™ Green Coffee Extract with Glucose Control Complex • Item #01607 *

(Each serving contains approximately 7 mg caffeine)

A bottle containing 90 vegetarian capsules of CoffeeGenic™ Green Coffee Extract with Glucose Control Complex retails for \$58. If a member buys four bottles, the price is reduced to just \$39 per bottle.



Item # 01607

Why CoffeeGenic™ Green Coffee Extract

CoffeeGenic™ Green Coffee Extract is produced through a <u>patented extraction process</u> to deliver an extraordinarily high proportion of *chlorogenic acid* for <u>maximum</u> potency. The coffee beans sourced for CoffeeGenic™ Green Coffee Extract are <u>organically grown</u>.

For those who want to take CoffeeGenic as a standalone, it is available in 200 mg and 400 mg potencies.

One vegetarian capsule of **CoffeeGenic™ Green Coffee Extract** should be taken <u>before</u> heavy meals.
This Green Coffee Extract is <u>standardized</u> to **50% chlorogenic acid**.

CoffeeGenic™ Green Coffee Extract (200 mg) • Item # 01604 (Each serving contains approximately 6 mg caffeine)

A bottle containing 90 200 mg vegetarian capsules of Coffee-Genic™ Green Coffee Extract retails for \$25. If a member buys four bottles, the price is reduced to just \$16.50 per bottle.

 CoffeeGenic™ Green Coffee Extract (400 mg) • Item # 01620 (Each serving contains approximately 12 mg caffeine)

A bottle containing **90 400 mg** vegetarian capsules of Coffee-Genic™ Green Coffee Extract retails for \$38. If a member buys four bottles, the price is reduced to just **\$25.50** per bottle. Those seeking to emulate the dose used in the 2012 study that induced an average **17.6** pounds of weight loss¹ should take one **400 mg** capsule of standardized green coffee bean extract three times a day.



Item # 01604



Item # 01620

1. *Diabetes Metab Syndr Obes*. 2012;5:21-7. Integra-Lean® Irvingia is protected by U.S. Patent No. 7,537,790. Other patents pending. InSea2® is a registered trademark of innoVactiv™
Crominex® 3+, Capros® and PrimaVie® are registered trademarks of Natreon. Inc.

Caution: Because this product may lower blood glucose, consult your healthcare provider before taking this product if you are taking blood glucose lowering medication.

To order any of the Green Coffee Extract formulas, call 1-800-544-4440 or visit www.LifeExtension.com



People who struggle with weight loss often point to several "Achilles' heels" that sabotage their efforts to keep off the pounds: eating between meals, grazing at night, and a constant desire to snack, are among the most common.

The fantastic news is that a proprietary extract of saffron, called Satiereal®, is clinically proven to deal with nearly all of the above issues. In fact, women involved in Satiereal® studies experienced the following amazing results¹⁻⁶:

- 100% reduction in the desire to snack
- 50% fewer instances of eating between meals
- Less hunger
- Moderate weight loss
- More energy
- Better mood

Say goodbye to "kitchen raids" and say hello to "weight control" with **Optimized Saffron with Satiereal**®.

A bottle containing 60 vegetarian capsules of **Optimized Saffron with Satiereal®** retails for \$36. If a member buys four bottles, the cost is just **\$24** per bottle.



Item #01432

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Satiereal® is a registered trademark of INORÉAL.International patents pending.

The fact that Satiereal® induced significant reductions (100%) in the desire to snack, but with only moderate weight loss, is further support for the multi-pronged approach needed to effectively manage weight that has long been espoused by Life Extension®.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Results may vary.



Don't Overlook Your THYROID

Too often, uninformed physicians diagnose fatigue, difficulty concentrating, unwanted weight gain, and hair loss in their patients as the inevitable results of aging. This blanket diagnosis may be flat-out wrong.

In fact, your lack of energy and inability to focus may have nothing at all to do with your age! You may simply need to adjust a thyroid malfunction.

The thyroid affects every cell in your body and is a key regulator of your energy, metabolism, heart, and bones. In her new book, *The Fatigue Solution*, Eva Cwynar, MD, urges readers to have their thyroid checked with a simple blood test. >>



Check Your Thyroid

When was the last time you went to the doctor and he checked your thyroid? You would know if he did, because to manually examine the thyroid, you have to step behind the patient and put your hands around the patient's neck as if you were going to choke her. That's the only way you can feel for the butterfly-shaped thyroid gland, which is located at the front of the neck near the collar bone (right where a man would wear a bowtie). When I introduce this examination to my patients, I always get the same reaction: "Why are you doing that? No doctor has ever done that to me before!"

You can't breathe without the thyroid, you can't think without the thyroid, you'd constantly be constipated without a thyroid, and yet it's way down at the bottom of the list of possible causes of some very common symptoms. Are you losing your hair? It could be your thyroid. Is your voice getting hoarse and raspy? It could be your thyroid. Are you always cold? It could be your thyroid. Are you having trouble concentrating? It could be your thyroid. And if it is, it's something that is easily fixed. That's why I get so angry and excited at the same time about the subject. People are suffering needlessly, some for many years, when they could be leading much more energetic, productive lives with the right diagnosis and treatment.

The Thyroid: What, Where, and How

One woman in eight will develop a thyroid disorder during her lifetime. And by the time they reach age 60, more than 20 percent of American women will have a thyroid disorder. I personally believe the numbers may be even higher because so many women haven't been officially diagnosed.

The simplest way to describe your thyroid and its function is to compare it to a furnace that is run by a thermostat (the pituitary gland). Together, they regulate how much energy and stamina you have on a daily basis. The amount of thyroid hormone you have affects how well you have slept, how you feel when you get up in the morning, and how effectively you will make it through your day.

Thyroid function affects every cell in the body. It is the main regulator of basal metabolism, which is the amount of energy needed to maintain essential physiologic functions when you are at complete rest, both physically and mentally. If your thyroid gland is not producing optimally, your cells cannot properly take in the nutrients they need, receive the right amount of oxygen, or get rid of waste materials efficiently. Thyroid hormones also affect your heart. muscles, bones, and cholesterol, to name just several of its jobs.



Introducing the 3s and 4s

There are two main hormones produced by the thyroid:

- Triiodothyronine, known as T3
- Tetraiodothyronine, known as T4

You may have noticed a portion of the word "iodine" in each of the hormones above. That's because the function of the thyroid gland is to take iodine, found in many foods, and convert it into thyroid hormones. Thyroid cells are the only cells in the body that can absorb iodine.

These cells combine iodine and the amino acid tyrosine to make T3 and T4.

There is one more factor we have to mention to complete this process, and that is Thyroid Stimulating Hormone (TSH), which is produced by the pituitary gland in the brain and gives that gland its thermostat-like function. So the thyroid is the furnace that provides "heat" in the form of the T3 and T4 hormones and the pituitary gland is the thermostat that goes on and off according to the amount of heat in the body. TSH tells the thyroid to raise or lower the heat.

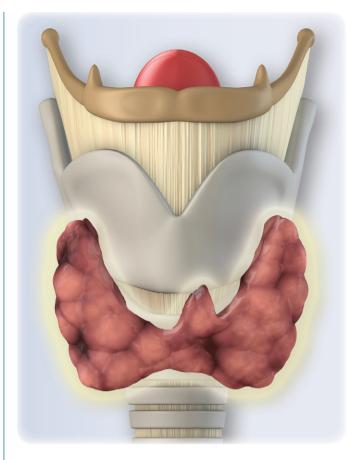
The process goes like this:

- T3 and T4 travel through the bloodstream, producing heat
- The pituitary gland senses the heat; the thermostat shuts off; TSH production slows down
- The body cools as the level of thyroid hormones decrease
- The furnace produces more heat

When your body temperature drops, your metabolic rate drops, too. You produce less energy, and you store more calories as fat—in other words, you gain weight. You also suffer from fatigue, irritability, and the inability to concentrate.

Too Few Hormones

The most common form of thyroid disorder is hypothyroidism. Hypothyroidism occurs when the thyroid is not producing enough of its hormones. Approximately 25 million people suffer from hypothyroidism, and about half of them are undiagnosed. It is usually found in women, particularly older women; the percentage of patients with hypothyroidism is greater for women for each decade of age after age



34. That is because thyroid hormone production decreases with age.

One of the reasons that hypothyroidism often goes undiagnosed is that symptoms usually appear slowly over time, and they may appear to be signs of normal aging.

Symptoms include:

- Anxiety and nightmares
- Difficulty losing weight
- Dry skin
- Easy weight gain
- Impaired concentration and memory
- Menstrual irregularities
- Mood swings
- Severe fatigue
- Thinning eyebrows
- Thinning hair
- Yellow skin from poor conversion of beta carotene to vitamin A

There are many women who have no symptoms and feel perfectly healthy, and yet, when tested, are diagnosed with hypothyroidism. These women need to be treated as well as those who have symptoms,



because their slowed metabolism will result in adverse effects down the line. If you are not treated for hypothyroidism, you may have a heart attack because of the metabolic dysfunction that your thyroid has produced over the course of many years. That's the reason testing is so important, especially as you get older and the likelihood of hypothyroidism increases.

In the United States, the most common cause of hypothyroidism is called Hashimotos's thyroiditis. This is an autoimmune disorder—in other words, the body's immune system attacks thyroid tissue. The tissue eventually becomes so inflamed that the gland can't make enough thyroid hormone. The pituitary gland, noticing the lack of these hormones, reacts by turning up the thermostat and sending out TSH to raise hormone production. But that's no longer possible because of the inflammation of the gland. Thyroid cells start to enlarge and multiply, which will eventually cause nodules and swelling. Hashimosto's disease, like many other autoimmune diseases, is most often inherited, usually from mothers to daughters.

Too Many Hormones

When everything is functioning properly, the thyroid and pituitary work together to produce just the right amount of hormones. But there are times when the thyroid malfunctions and produces either too many or too few hormones. When the thyroid becomes overactive and produces too many hormones, you end up with a condition called hyperthyroidism. This condition affects 10 times more women than men, and usually occurs in women under 40. Here are some of the symptoms of hyperthyroidism:

- · Being nervous, moody, weak, or tired
- Excessive sweating
- Fine hair that is falling out
- More bowel movements than usual
- Rapid heartbeat
- Red, itchy skin
- Shaky hands
- Shortness of breath

The most common form of this disorder is Graves' disease, which was made "famous" when first lady Barbara Bush was diagnosed with the illness in 1989 (coincidentally, her husband, President George H. W. Bush, was later diagnosed with the same disease, as was their dog, Millie). One of the stranger symptoms of Graves' disease is known as "frog eyes" where the eyeballs get pushed forward and protrude because fat builds up behind them. Graves' disease can be life threatening and can lead to heart problems if left untreated. This type of hyperthyroidism is an autoimmune disease that is genetically inherited. It causes mood and body changes when the immune system "mistakenly attacks" the thyroid gland, causing overproduction of the thyroid hormones.

People who have hyperthyroidism are often confused when they hear the diagnosis. My patients tell me, "I thought if I had hyperthyroidism, I'd be full of energy and losing weight and able to multitask like crazy! How come I'm so tired all the time?" Although this line of thinking is correct in most situations, the answer in other situations is that the overactive thyroid is burning out your body. It's affecting other organs (such as the adrenal gland) that are being compromised. It's like an engine that is constantly revving at a very high speed and going nowhere. Eventually, the parts will burn out and the engine will stop going.

Another type of hyperthyroidism is subacute thyroiditis, which involves swelling (inflammation) of the thyroid gland and is thought to be produced by a virus that usually follows an infection of the upper respiratory tract. It is often treated with anti-inflammatory drugs such as aspirin or ibuprofen to decrease both the production and the release of thyroid hormone. A beta-blocker (usually given for heart disease or hypertension or even tremor or anxiety) is also given to slow down the heart rate and make the patient more

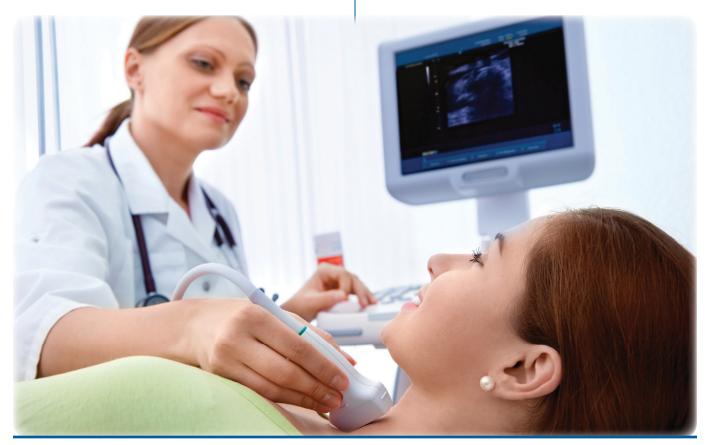
comfortable until the situation spontaneously resolves itself. This disease usually lasts for only a few months and heals itself naturally, but if left untreated can be life threatening.

Testing Your Thyroid

The good news is that there is a simple blood test that can measure thyroid function to determine whether or not your hormone production is normal (the "gold standard" is to test one of many thyroid functions, which is the production of thyroid stimulating hormone). The bad news is that if you get five doctors in a room, you'll get five different opinions on what is "normal" and what is not. In my practice, I don't rely on blood tests alone because over the years I have found that what is normal for one person, and even normal for the population at large, may be abnormal for someone else. I use other tests as well (such as one that tests for particular antibodies) and palpation (examining with my hands) of the thyroid to determine its size, shape, firmness, or location to check for abnormalities. Internists may do this as well, but since they do not palpate the gland as frequently as endocrinologists do, they may miss the diagnosis. Some doctors may recommend an ultrasound of the thyroid as well.

Here's where the tricky part comes in. As of 2010, at most laboratories in the United States, the official normal reference range for the thyroid stimulating hormone blood test runs from approximately .5 to 5.0 (measured in micrograms per deciliter). Reference range is what determines—for the vast majority of physicians, who rely on blood tests almost exclusivelywhether or not thyroid disease is even diagnosed at all, much less treated, and when diagnosed, how it is treated. In January of 2003, the American Association of Clinical Endocrinologists recommended that doctors "consider treatment for patients who test outside the boundaries of a narrower margin based on a target TSH level of 0.3 to 3.0." Even though many years have passed since the new range was established, some doctors use it and some don't. The issue that it raises is this: One study found that using a TSH upper normal range of 5.0, approximately 5 percent of the population is hypothyroid. However, if you use 3.0 as the top of the normal range, approximately 20 percent of the population would be hypothyroid. That means that millions of patients with hypothyroidism are being undiagnosed and untreated.

There are now more effective blood tests that provide a complete picture of how well the thyroid produces T4, how well the body converts T4 into T3, how much of the active form T3 is created, and whether there are significant anti-thyroid antibodies present.





A complete panel would also include levels of free (unbound) T3 and T4. You might want to suggest to your doctor that she use the free T3 and T4, as the "regular" T3 and T4 totals may not be as accurate.

One of the problems with thyroid testing is that they are typically not on the list of things that are regularly checked in a standard or even a more comprehensive blood test panel. Just like the guidelines we have established for testing for colon cancer, for instance, beginning at age 50 and not before, it's not until you reach the age of 65 that your doctor will routinely request thyroid testing.

When you complain to your doctor about putting on weight, losing a little hair, fatigue, lack of libido—most of the time you get the same response: "Well, you are getting older, it's to be expected." If you are suffering from any of these symptoms and your doctor doesn't suggest testing, bring it up yourself. Most doctors, even though they may be skeptical, will order the testing if you insist.

I Keep Forgetting What You Said About Thyroids . . .

Here is a frightening thought: many doctors have diagnosed patients with dementia and Alzheimer's disease, when in reality what they had was a thyroid disorder. A 2008 study published in the *Archives of Internal Medicine* found that older women who had levels of TSH that were either too high or too low had more than twice the risk of Alzheimer's disease than

those with more moderate levels (the same was not true of men). This is another reason that testing your thyroid become part of your standard testing routine as you get older!

Your Numbers, Your Doctor, and You

Here's an important point to remember if do get tested and vour numbers are not "normal." Hypothyroidism has a huge range, from very mild to quite severe. Not only that, one person whose TSH tests result in a reading of 2.5 may feel perfectly fine, while another person with the same reading may be suffering a battery of symptoms. The numbers and the symptoms don't always correlate. Most of the time, taking thyroid medication will cure your symptoms and you will feel better within a matter of days; by six weeks on the medication you'll have a very good idea of how it's working. Unless you tell your doctor how you're feeling, he or she has nothing to go on but your test results. You need to share with your doctor if your symptoms are getting better (or worse), and you need to be consistently retested to see how your medication is working. Your numbers may go back to normal, but if you're still not feeling well it's your responsibility to tell your doctor so that more tests can be taken or your medication can be tweaked until you find what works best for you.

It is possible, however, to go overboard with thyroid medication. Some of my patients have the "if some is good, more is better" attitude. However, too much thyroid medication can stress out the adrenal glands, which will then overproduce cortisol as well as dysregulate (impair) the ratio of cortisol and DHEA and epinephrine and norepinephrine. This will leave you more fatigued than you were in the first place, because the rest of your body's systems will not be able to produce the energy needed to keep up with your now revved-up thyroid.

Iodine Deficiency and the Thyroid

Since iodine is needed for the production of thyroid hormone, and the body does not make iodine, we have to get through what we eat. It is commonly found in foods such as saltwater fish, seaweed, sea vegetables, shellfish, bread, cheese, and iodine-containing multivitamins.

Iodized salt is now the main source of iodine in the American diet, but only about 20 percent of the salt America eats contains the micronutrient. Increasingly popular "designer" table salts, such as sea salts and Kosher salts, usually do not have much iodine. However, the majority of salt intake in the United States comes from processed foods, and food manufacturers almost always use noniodized salt in processed foods. Add to that the ubiquitous warnings against using too much salt because of our ever-pressing issues of hypertension, congestive heart disease, and other coronary artery diseases, and iodine deficiency becomes a real threat for some people in the United States. Whereas, just a few years ago iodine was mandated by the FDA to be included in salts (and was for decades), now most medical advice states that, due to the large variety of food sources available from all over the world, iodine in salt is no longer necessary in the United States and other Western countries. Iodization of salt is now voluntary in America. It appears that iodine intake has declined by 50 percent in North America in the past 30 to 40 years and the anticipated rate of future hypothyroid cases has risen dramatically.

Before the 1920s, iodine deficiency was common in the Great Lakes, Appalachian, and Northwestern regions of the United States and Canada; however, the introduction of iodized salt has virtually eliminated the problem in those areas. Iodine deficiency can lead to goiter, hypothyroidism, and even to mental retardation in infants and children (the term "cretin" comes from the fetus not getting enough iodine while in the mother's womb).

Worldwide, the number one cause of hypothyroidism is iodine deficiency, which remains a public health problem in 47 countries, and about 2.2 billion people (38 percent of the world's population) live in areas

with iodine deficiency. An article in The Lancet in 2008 stated that, "According to WHO, in 2007, nearly 2 billion individuals had insufficient iodine intake, a third being of school age. Thus iodine deficiency, as the single greatest preventable cause of mental retardation, is an important public health problem."

There are many different types and brands of iodine supplementation available over the counter. It's important, however, that you get guidance from your doctor or health professional before taking any iodine supplementation. If you take too much, you can develop hyperthyroidism.

Thyroid Treatments

One of the first thyroid treatments that was commercially available was Armour Thyroid, which was a natural product made of desiccated pig and cow thyroid glands put into pill form. It is still available today. It contains both T3 and T4 hormones. It fell out of favor over the years because quality control of this medication was difficult. In recent years, however, production has become much more stable and it is back in use again. Your doctor may prescribe Armour Thyroid if you have had problems with a synthetic therapy, or if you or your doctor prefer natural products.

The most commonly prescribed synthetic drug for hypothyroidism is called levothyroxine, known under the brand names Synthroid, Levothroid, Levoxyl, and Unithroid. A more recent addition is a drug called Tirosent, which is made in Switzerland and





distributed in the United States. It has fewer additives and preservatives than the other synthetic medications, so it may be a good choice for you if you find you're allergic to any of the other brands.

Another popular drug is called Cytomel, which contains only T3. Synthroid contains only T4, which must be converted to T3 by the body. Some people respond better to T3 preparations because they have trouble converting T4 into T3; those people fare better with either a combination of T3/T4 or T3 alone.

The mineral selenium decreases the antibodies that form in Hashimoto's thyroiditis, thereby decreasing the inflammation, which is why I recommend selenium to everyone who has hypothyroidism. It is also useful as a messenger in the brain helping with the communication between the thyroid and the adrenal gland.

How to Take Thyroid Medication

Although thyroid problems are usually easily treated with medication, it can be tricky to take because of how thyroid hormones react with other substances. Tell your doctor about all the prescription and over-the-counter medications you use because there are many other medicines that can affect thyroid medications. This includes vitamins, minerals, and herbal products. There are also some substances that block the absorption of thyroid medications (e.g., soy, calcium, iron, some mood altering prescription medications), which is why some patients don't see the results they'd like.

- Do not take thyroid medication within two hours of eating as food may delay or reduce its absorption.
- Do not take estrogen, birth control pills, or hormone replacement therapy in the pill form at the same time vou're taking thyroid medication (you can take them in the same day, just not at the same time of the day). Any form of oral estrogen may be a problem if taken at the same time as thyroid because both estrogen and thyroid hormone share the same binding globulin (a protein to which thyroid hormone binds in the blood and from which it is released into tissue cells) in the liver. If you take them both at the same time, you're not absorbing as much of either one. This does not apply if you are taking other forms of birth control, such as the patch or the NuvaRing; transdermal (through the skin) hormone replacement; or sublingual (dissolving directly into the bloodstream from drops or lozenges into the mouth) hormone replacement. That's another reason why I treat my menopausal women who have hypothyroidism with a hormone CREAM instead of the standard oral prescription pill.
- Calcium also prevents absorption of thyroid medication, so they should not be taken at the same time.
- Iron, whether alone, or as part of a multivitamin or prenatal vitamin supplement, interferes with thyroid hormone absorption. You should not take your iron supplements or your vitamins with iron at the same time as your thyroid hormone, and should allow at least two hours (four being the optimal time frame) between taking them.



Your Thyroid and Menopause

Although it is very rarely mentioned, your thyroid and your reproductive cycle are closely related. Thyroid problems can cause irregularities in the menstrual cycle, and even infertility in extreme cases. As you get older, these problems can become exacerbated. In fact, untreated hypothyroidism can cause a woman to be in an artificial premature perimenapause or even throw her into menopause.

It's important to remember that the thyroid is part of the overall endocrine system, and when any of this system's hormones get out of balance, all of the parts suffer. So when you go through times where hormonal imbalance is more than likely—such as pregnancy, perimenopause, and menopause—your thyroid is also more than likely to get out of whack as well.

That is why women over 50 should be tested for thyroid problems every few years (earlier if you have a family history) and woman over 65 should be tested annually. Any woman of any age should be tested at any time and as frequently as needed if she has symptoms of hypothyroidism. Your doctor will then be able to determine whether you need thyroid hormone medication, and/or iodine or other supplementation.

In dealing with thyroid problems, it's important to find a doctor who will listen to your symptoms and be open to the newest research, the latest reference range recommendations, inclusive testing, and who understands that each patient will react differently to various treatments. You may need to see an endocrinologist, someone who is trained in the art and science of working with hormones, to get the results you need and deserve.

It makes me frustrated to know that there are so many women who suffer unnecessarily for so many years. I hear it over and over again, how finally being diagnosed and treated for thyroid problems has changed women's lives. They have accepted their "lot in life" for so long that they have almost forgotten what it's like to have energy and focus and fun in their lives. I'm here to tell you, don't just accept it. Get tested. Check your results. Ask for a copy of your labs. See a specialist. Don't settle—if you don't agree with your doctor, go somewhere else. You know your body better than anyone else. Listen to it and get your life and your health back in your hands.

The "Check Your Thyroid" Jump Start Tip

Taking Matters into Your Own Hands—or Armpits. If you suspect you're having thyroid problems and you want to check yourself out at home, there is a simple test you can do called the basal temperature test. Here are the steps:

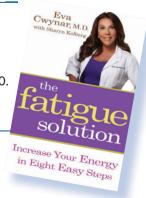
- Get a basal thermometer (the kind you can use under your tongue). Leave it overnight on your bedside table.
- First thing in the morning, before you get out of bed, tuck the thermometer under your armpit and lay completely still for 10 minutes. Set a timer before you begin so that you don't have to move around to look at the clock.
- Record your temperature for there to five days. If your temperature is consistently below 97.8°F, you may have a thyroid problem, and you should have yourself evaluated by a health professional.

Remember, thyroid disease is not just about fatigue, it can ultimately affect your morbidity as well as your mortality. Take control, but do it with the assistance of an expert. •



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on Dr. Eva Cwynar, visit www.dreva.com.
To order The Fatigue Solution call 1-800-544-4440.
Item # 33847 Retail price \$24.95
Member price \$18.71

If you have any questions on the scientific content of this article, please call a Life Extension Health Advisor at 1-866-864-3027.



REINFORCE YOUR SKIN AGAINST **UV RADIATION**

Scientists have found that topically applied sulforaphane has the ability to help **protect** the skin against the visible signs of sun damage!

Sulforaphane promotes the production of certain enzymes—such as glutathione S-transferase—that help support the skin's natural ability to fortify itself against the visible damage caused by sun radiation. 1,2

Broccoli contains glucoraphanin,3 which is enzymatically converted into sulforaphane. Three-day-old broccoli sprouts are packed with up to 100 times more glucoraphanin by weight than mature broccoli plants!4

The extracts from glucoraphanin-rich broccoli sprouts—found in Cosmesis Broccoli Sprout cream offer maximum support against the visible effects of **UV** rays!

VISIBLE PHOTO-AGING AND ANTIOXIDANT SYNERGY

In addition to glucoraphanin, several potent antioxidants are included such as aspalathin from rooibos tea and epigallocatechin-3-gallate from green tea to help reduce visible effects of UV radiation and oxidative stress.5-7

Most of the visible effects of skin aging are caused by radiation from the sun. Applied directly to the skin, the unique and synergistic combination of extracts in the concentrated Broccoli Sprout Cream provides maximum, targeted support against the visible effects of sun-related stress on the skin.

The retail price of a 1 oz. jar of Cosmesis Broccoli **Sprout Cream** is \$46. If a member buys two jars, the price is reduced to just \$29.25 a jar.

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Item #80144

To order Cosmesis Broccoli Sprout Cream, call 1-800-544-4440 or visit www.LifeExtension.com.



Developed Exclusively for Life Extension®

Milk thistle extract has long been thought of as one of nature's most potent weapons to support *human health*, but until recently, the technology hasn't been available to fully harness this plant's potential. Among the compounds waiting to be unlocked are a slew of *nourishing antioxidants* and flavonolignans valued for their role in *ensuring healthy liver function*.^{1*}

Life Extension® has uncovered an advanced extraction technology that has enabled scientists to isolate silymarin constituents and to test their efficacy against various cell lines. Among the compounds tested, silymarin constituents **isosilybin** A and B proved to be the most efficient in maintaining healthy cell division.²

Certified European Milk Thistle is the first milk thistle extract to contain standardized, high potencies of **silymarin**, **silibinins**, <u>and</u> **isosilybin A** and **B**—providing the <u>full spectrum</u> of milk thistle's liver <u>and</u> prostate protective compounds. Each capsule of this advanced formula provides:

Milk Thistle (Silybum marianum) Extract (seed) [std. to 80% Silymarin (600 mg), 30% Silibinins (225 mg),

and 8% Isosilybin A and Isosilybin B (60 mg)]

A 60 vegetarian capsule bottle of **Certified European Milk Thistle** retails for \$34. If a member buys four bottles, the cost is reduced to only **\$22.50** per bottle—**a savings of nearly one third!**

Compare the price of **Certified European Milk Thistle** to commercial silymarin supplements, and members will see that this new formula is available at one of the <u>lowest costs per milligram</u>— with standardized concentrations of **silibinins** and **isosilybin A** and **B** not found in other milk thistle extracts!

Contains rice.

Reference

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Item # 01522

To order **Certified European Milk Thistle**call **1-800-544-4440** or visit **www.LifeExtension.com**



There's no debating the power of omega-3 fatty acids. From support for heart health and brain function to help with **inflammation**, their broad-spectrum benefits have been firmly established in a wealth of studies.1-9

To ensure the purest, most stable, and easy-to-tolerate fish oil supplement, Life Extension® SUPER OMEGA-3 EPA/DHA is molecularly distilled. This proprietary technology ensures any environmental pollutants are reduced to extremely low levels. The result? Our fish oil enjoys a 5-star rating for purity, quality, and concentration from the International Fish Oil Standards program (IFOS)—the highest possible ranking from the world's premier testing laboratory.

Sesame Lignans and Standardized Olive Fruit Extract for Enhanced Benefits

Fish oils (and other fatty acids) have a tendency to oxidize, rendering them nutritionally inferior. Scientific studies show that when added to fish oil, **sesame lignans** safeguard against oxidation and direct fatty acids toward pathways that help with inflammatory reactions.10

To further emulate the benefits of a Mediterranean diet, Super Omega-3 delivers standardized, high-potency olive fruit extract. Research shows that fish oil combined with olive oil help with inflammation better than fish oil alone.11

Olive also contains the compounds hydroxytyrosol, tyrosol, and *oleuropein*. Together these nutrients counter the action of free radicals, delay aging in specialized skin cells, prevent undesirable LDL oxidation, and help maintain normal platelet activation. 12-15

Super Omega-3 (4 softgels) supplies the equivalent content of **6 tablespoons of extra virgin olive oil**. Take <u>two</u> softgels twice daily with meals.

A bottle containing 120 softgels of Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract retails for \$32. If a member buys four bottles, the price is reduced to just \$21 per bottle. If 10 bottles are purchased, the cost is just \$18.68 per bottle. (Item # 01482)



Ratings based on results of the 2012 ConsumerLab.com Survey of Supplement Users. More information at www.consumerlab.com

CAUTION: If you are taking anti-coagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product. Contains fish (anchovy, mackerel), sesame, and corn.

Supportive but not conclusive evidence shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease. IFOS™ certification mark is a registered trademark of Nutrasource Diagnostics, Inc. These products have been tested to the quality and purity standards of the IFOS™ program conducted at Nutrasource Diagnostics, Inc.

Just four softgels of SUPER OMEGA-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract provide:

EPA Pure+™ Extract (eicosapentaenoic acid)	1400 mg
DHA Pure+™ Extract (docosahexaenoic acid)	1000 mg
Olive Fruit Extract [std. to 6.5% polyphenols (39 mg), 1.73% hydroxytyrosol/tyrosol (10.4 mg), 0.5% verbascoside/oleuropein (3 mg)]	600 mg
Sesame Seed Lignan Extract	20 mg

A SMALLER SOFTGEL for easier swallowing!

Some members have requested we make **Super Omega-3** available in a smaller capsule for easier swallowing. We have accomplished this by making half-size softgels available.

A bottle containing 240 half-size softgels of Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract retails for \$32. If a member buys four bottles, the price is reduced to just \$21 per bottle. If 10 bottles are purchased, the cost is just \$18.68 per bottle. (Item # 01619)

For those with sensitive stomachs, **Super Omega-3** is also available with enteric coating and retails for \$34. If a member buys four bottles, the price is reduced to \$23.25 per bottle. If 10 bottles are purchased, the cost is just \$21 per bottle. (Item # 01484)

To order the most advanced fish oil supplement, Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract (with or without enteric coating), call 1-800-544-4440 or visit www.LifeExtension.com

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Falling down is responsible for <u>70%</u> of accidental deaths in older people.¹ Poor lighting conditions are often the culprit.

Fortunately, **C3G** derived from **black currant extract** supports eyesight in <u>dark</u> conditions by promoting the healthy function of delicate structures within the retina that support **night vision**.²

Super Zeaxanthin contains a potent dose of **C3G** to nourish cells throughout the body.

Maintain Macular Density

The **macular pigment** is composed of lutein, zeaxanthin, and meso-zeaxanthin. The *density* of the macula is essential to proper vision. Macular density declines naturally over time.

Eating lots of lutein- and zeaxanthin-containing vegetables can help maintain the structural integrity of the macula. However, since **meso-zeaxanthin** is not part of the typical diet, it cannot be easily replaced. Young people convert lutein into meso-zeaxanthin inside their macula. Some aging people, however, lose their ability to convert lutein into **meso-zeaxanthin**.

The **Super Zeaxanthin** formula provides **zeaxanthin**, **lutein** <u>and</u> **meso-zeaxanthin** to help maintain macular density.

Combat "Eye Fatigue"

Staring at a fixed-distance object such as a computer screen for a long period of time can cause the muscles that focus your eyes (called the ciliary body) to tire or go into spasm. This can result in physical symptoms such as head discomfort, sensitivity to glare, tiredness, soreness, dryness, and blurry vision.

Super Zeaxanthin contains a potent dose of *astaxanthin*, a carotenoid found in red algae. Studies show that taking astaxanthin

with other carotenoids protects against free radical—induced DNA damage, repairs UVA-irradiated cells, and inhibits inflammatory cell infiltration.³⁻⁶

Astaxanthin also helps support vascular health within the eye and improves visual acuity. Its fat-soluble nature offers protection to sensitive cells inside the eye.

Comprehensive Ocular Protection in One Daily Softgel

The **Super Zeaxanthin** formula provides ingredients that have been shown to promote healthy eyesight. Just <u>one</u> softgel of **Super Zeaxanthin with Lutein**, **Meso-Zeaxanthin Plus Astaxanthin and C3G** provides:

OptiLut®, Lutein Plus® and MZ®	38 mg
Marigold (Tagetes erecta) extract (flower) [free lutein equival	ent 10 mg]
Zeaxanthin & Meso-zeaxanthin blend	3.75 mg
[micronized zeaxanthin, OptiLut®, Lutein Plus®	
and MZ ® Marigold Extract (flower)]	
Natural Astaxanthin	6 mg
(AstaREAL® and Zanthin® CO2 extracts of Haematococcus plus	vialis algae)
C3G (Cyanidin-3-glucoside)	2.2 mg
[from European black currant (Ribes nigrum) extract (fruit)]	

The retail price for a bottle containing 60 softgels of **Super Zeaxanthin** with Lutein, Meso-zeaxanthin Plus Astaxanthin and C3G is \$42. If a member buys four bottles, the price is reduced to just \$28.50 per bottle.

To order **Super Zeaxanthin with Lutein, Meso-zeaxanthin Plus Astaxanthin and C3G,** call **1-800-544-4440** or visit **www. LifeExtension.com**

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AstaREAL® is a registered trademark of Fuji Chemical Industry Co., Ltd. Zanthin® is a registered trademark of Valensa International, Inc., used under license. U.S. Patent 5,527,533.

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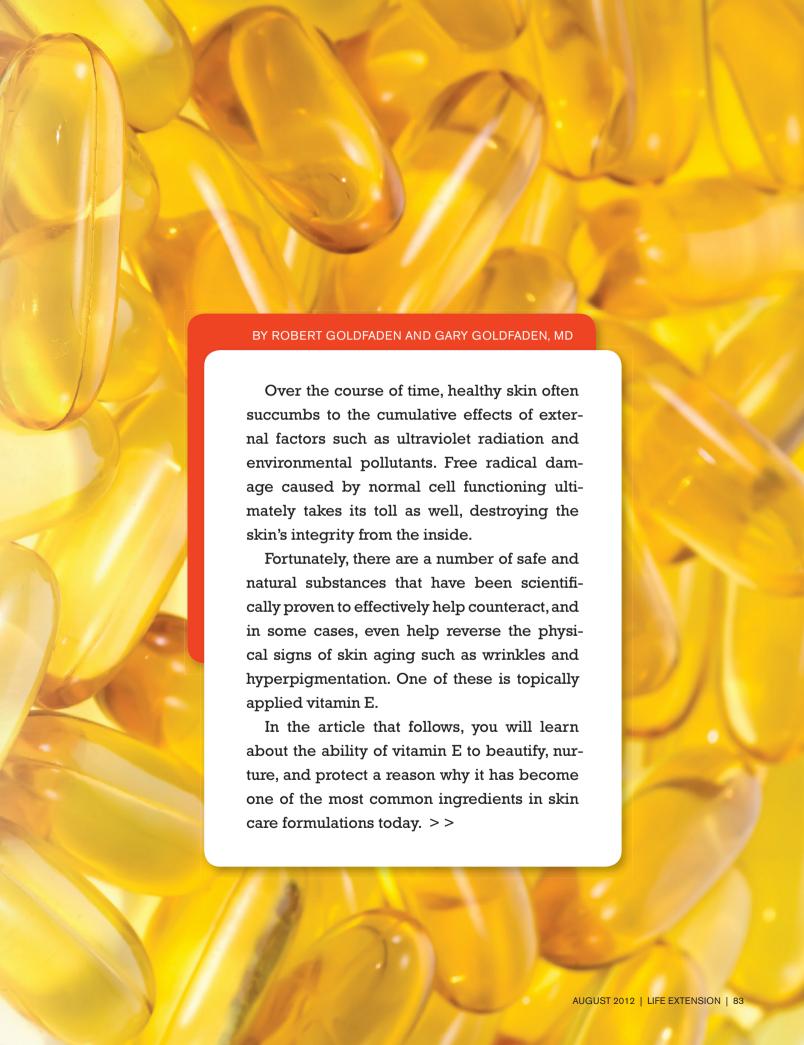
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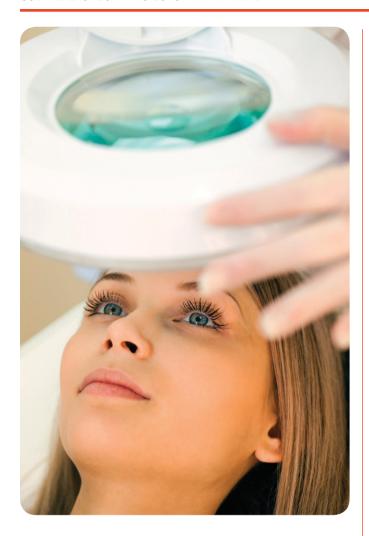
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Item # 01586

LifeExtension







The Antioxidant Tag Team

Protecting the cell membranes, active enzyme sites, and DNA from free radical damage is one of vitamin E's main functions. The lipids in the skin cell membranes are particularly susceptible to free radical attack from both internal and external factors including UV exposure, ozone, and chemical pollutants. In order to protect itself, the skin already contains 1% alpha-tocotrienol, 3% gamma-tocotrienol, 87% alphatocopherol, and 9% gamma-tocopherol as part of its antioxidant defense system.1

Vitamin E, because it's a lipid-soluble antioxidant, easily penetrates into the vital membranes of the skin cells and accumulates there to protect against the damaging effects of lipid peroxidation.² Both tocotrienols and tocopherols can freely donate a hydrogen atom (a proton plus electron) from the hydroxyl group on their chromanol ring. This action completes the molecular structure of the unbalanced free radical, effectively inactivating or quenching it.^{3,4} Unlike most antioxidants, however, vitamin E doesn't stop there.

Normally, when an antioxidant molecule accepts a free electron from an oxygen radical, it too becomes inactive. But vitamin E enjoys a special relationship with two other antioxidants, vitamin C and alpha **lipoic acid**, that allow it to continue protecting the skin.5 Both vitamin C and alpha lipoic acid have the ability to take away the extra electron from a used vitamin E molecule, effectively reactivating it.6 This capacity to recycle and restore its power makes vitamin E a prominent factor in the skin's first line of defense against free radicals.

Natural Age-Defying Benefits

The process of skin aging has been linked to the destruction caused by free radicals over time. Although there are many different factors at work, wrinkled skin is largely the result of cumulative UV exposure. UV rays from the sun make the oxygen molecules in the dermis "spin," causing them to split into two free radicals. The destructive power of these toxic molecules gradually breaks down healthy collagen and compromises the skin's integrity. Fortunately, scientists have found that the gamma tocotrienol form of vitamin E may regulate certain gene signals in the skin that help prevent the damage typically seen after UVB exposure.7

In a recent study on both hairless mice and human skin cells, researchers discovered that gamma tocotrienol reduced several of the inflammatory signals that follow UVB radiation exposure. Some of the dangerous inflammatory signals found to be inhibited by gamma tocotrienol were COX-2, interleukin-1beta, IL-6, and monocyte chemotactic protein-1. When applied topically, gamma tocotrienol can help defend against the adverse effects of UV radiation such as abnormal cell development and premature aging.^{2,7}

A Safe and Effective Answer to Clearer Skin

Antioxidant activity and photoprotection are not the only benefits that vitamin E offers. Scientists have found that delta tocotrienols are quite effective at slowing the production of **melanin**, the skin pigment responsible for unsightly age spots.8 One recent study found that these two forms of vitamin E are very adept at suppressing the activity of an enzyme called **tyrosi**nase, a key player in melanin formation.8 Furthermore, this ability to block the biosynthesis of melanin was found to be effective even at very low doses. Compared to other popular water soluble skin lightening agents

such as kojic acid, arbutin, and sodium lactate, vitamin E penetrates more deeply and delivers its active ingredients in a more controlled and constant manner, making it a very safe and effective alternative.

Another key finding of the same study concerns the production of melanin induced by ultraviolet light (UVB). This process takes place through a different mechanism than the normal activation of tyrosinase.

Keeping Your Skin Soft and Smooth

The skin has a waterproof seal that keeps moisture in and prevents evaporation and moisture loss. However, the natural aging process and environmental influences can cause this protective barrier to break down, allowing the skin to lose moisture and become dry. The good news here is that vitamin E plays an important role in maintaining the barrier function. Vitamin E appears to enhance the penetration and resorption of skin lipids.9 Taken together, these factors suggests a complex regulatory mechanism for restoring and maintaining the barrier function. Topically applied vitamin E is an excellent moisturizer that helps keep the skin healthy and soft. This valuable nutrient locks moisture into the skin and prevents dehydration.

Summary

The process of skin aging has been linked to the destruction caused by free radicals over time. Although there are many different factors at work, wrinkled skin is largely the result of cumulative UV exposure and exposure to chemical pollutants in the

environment, as well as oxidative stress created by normal cellular processes in the body. The destructive power of these toxic molecules gradually breaks down healthy collagen and compromises the skin's integrity. Vitamin E is a well-known antioxidant and its unique chemical structure enables it to effectively and safely quench free radicals.3,4 Research has shown that vitamin E, particularly the gamma tocotrienol form,

Vitamin F Defies Skin Aging

- Vitamin E is not a single entity at all, but a family unit consisting of two main branches: tocopherols and tocotrienols each containing four different kinds of molecules (alpha, beta, gamma, and delta), making a grand total of 8 distinct forms of vitamin F 10,11
- Tocotrienols are 40-60 times more effective at quenching free radicals than tocopherols.12
- Scientists have found that the gamma tocotrienol form of vitamin E may regulate certain gene signals in the skin that help prevent the damage typically seen after UVB exposure.7
- In a recent study on human skin cells, researchers discovered that gamma tocotrienol reduced several of the inflammatory signals that follow UVB radiation exposure.7
- Scientists have found that delta tocotrienols are quite effective at slowing the production of **melanin**, the skin pigment responsible for unsightly age spots.8
- Vitamin E plays an important role in maintaining the barrier function of the skin and appears to enhance the penetration and resorption of skin lipids.9



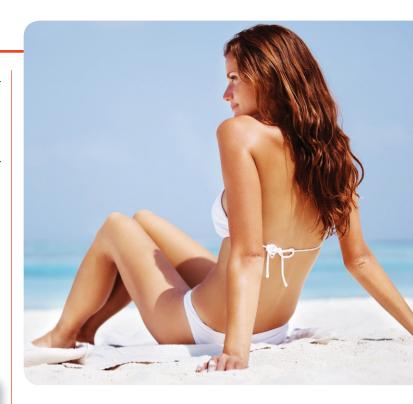
can modulate genetic signals in skin cells to help prevent oxidative damage.⁷ Additionally, scientists have found that delta tocotrienols are quite effective at slowing the production of melanin, the skin pigment responsible for unsightly age spots.8 Vitamin E plays an important role in maintaining the barrier function of the skin as well. Topically applied vitamin E is an excellent moisturizer that helps keep the skin healthy and soft. This valuable nutrient locks moisture into the skin and prevents dehydration. Vitamin E is able to deeply penetrate the skin and provides broad spectrum defense against signs of skin aging from the inside out.

If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.

UNDERSTANDING VITAMIN E

Vitamin E is not a single entity, but a family unit consisting of two main branches: tocopherols and tocotrienols. 10,111 Each of these major subgroups contains four different kinds of molecules (alpha, beta, gamma, and **delta**), making a grand total of 8 distinct forms of vitamin E. To the untrained eye, all these molecules look alike, resembling a tadpole with a prominent head and tail. However, tiny differences in the length and composition of the tail determine whether a vitamin E molecule will belong to the tocopherol or tocotrienol family. Tocotrienols have shorter, unsaturated tails with three double bonds that make them more flexible. Tocopherols have longer, saturated tails that lack these all-important double bonds. 12 It's the added flexibility of the tail that gives tocotrienols the ability to cover a much larger surface area of the cell membranes.13 This increased mobility is one reason why tocotrienols are 40-60 times more effective at quenching free radicals than tocopherols. 12

However, the chromanol head structure is really the fundamental unit of vitamin E. It's the known site of all antioxidant activity. 13 In addition, the size of the head determines whether it's an alpha, beta, gamma, or delta form. In general, gamma and delta (collectively called desmethyl-) heads are much smaller, enabling them to penetrate the cell membranes more effectively.13



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Overlooked Benefits of Properly Formulated PR 9 5 0 1 5 5

Probiotics literally means "for life." Traditional diets comprising of foods containing **probiotics** (such as the **Mediterranean Diet**) have been shown to promote health and longevity.¹

People take probiotics to facilitate intestinal health, but probiotics perform many <u>more</u> important functions. For example, researchers have discovered that probiotics inhibit *nuclear factor kappa B* (NFkB), which help suppress inflammation as well as positively modulate cellular signaling pathways.²

Furthermore, studies have shown that probiotics can influence youthful gene expression.³ Properly formulated probiotics provide biologically active materials that can positively influence many aspects of human health.⁴

The Importance of the GI Tract on Immune Function

A little known fact is that **70-80% of our immuno-globulin-producing cells reside in our gut** which is populated by nearly 100 trillion microorganisms, many of which are beneficial bacteria.³ These bacteria are considered a living part of the human organism.⁵

With age, we can experience a decline in vital beneficial bacteria and the strength of our immune system. Restoring the gut's friendly bacteria can stimulate and regulate healthy immune function.⁵

A Potent, Immune Enhancing Strain of Bifidobacteria

Researchers have shown that a unique well-studied strain of the bifidobacteria probiotic called **BB536**° increases the number of healthy bacteria in the colon.⁶ An *in vivo* study demonstrated a significant increase in longevity in mice supplemented with bifidobacteria.⁷ Long studied by Japanese scientists, BB536° was found to reduce production of inflammatory cytokines that often accompany seasonal symptom development.⁸

BB536® is a highly researched active probiotic. Each capsule provides 2,000,000,000 (two billion) colony forming units of viable healthy bacteria.

A bottle containing 60 capsules of **Bifido GI Balance** retails for \$20. If a member buys four bottles, the price is reduced to just **\$13.50** per bottle.

Contains milk.

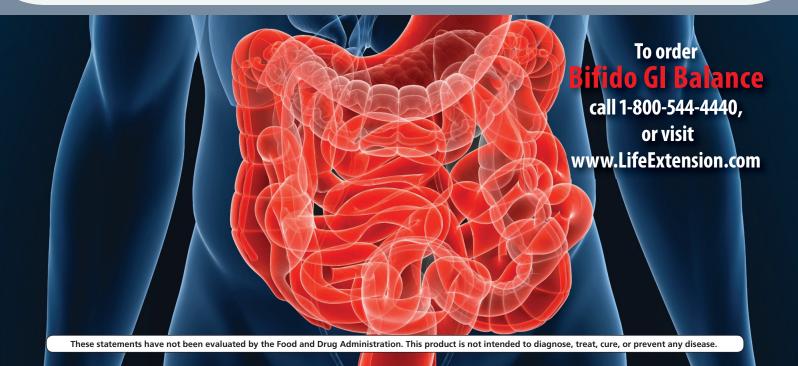
 $BB536^{\ast}$ is a registered trademark of Morinaga Milk Industry Co., Ltd.

For Longor Life Biffido GI Balance Promotes Intestinal Health* Dietary supplement 60 Capsules

Item #01622

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with Sendara®,

call **1-800-544-4440** or

visit www.LifeExtension.com

Complete Skin Protection

From Inside Out

Scientists are realizing that skin needs to be protected against external factors such as sunlight, and also against internal damage caused by emotional stress. This is because our emotions, particularly stressful ones, release a wave of stress hormones such as cortisol that prematurely age the skin.

Fortunately, emerging research suggests that a natural herb called **ashwagandha** can protect and enhance psychological health as seen in a recent human trial.¹ In this study, just 125 mg of a patented ashwagandha extract once a day led to a **14.5%** reduction in cortisol levels in 98 chronically stressed individuals. This dose also resulted in a **13.2%** increase in levels of the anti-aging hormone DHEA, which helps maintain the youthfulness of skin cells. Overall, the ashwagandha-treated subjects experienced up to **62%** relaxation support compared with virtually no change in the placebo group.

The impressive results from this trial have led to the incorporation of **ashwagandha** into a new skin-protection formula called **Enhanced FernBlock® with Sendara®**. As the name suggests, this formula also contains **FernBlock®**, the revolutionary <u>oral supplement</u> introduced by Life Extension® in July 2008 that helps protect the skin against damaging solar radiation.

FernBlock® is a natural extract derived from the fern plant **Polypodium leucotomos**. Extensive clinical studies document its ability to provide remarkable skin protection by inhibiting the absorption of harmful ultraviolet (UV) rays and quenching DNA-corrupting free radicals. **FernBlock®** also diminishes the consequences of excessive UV radiation by favorably altering a number of changes in skin cells that cause premature skin aging.

Enhanced FernBlock® with Sendara® is complemented with a powerful antioxidant called *Phyllanthus emblica*. This natural extract blocks a chemical reaction that generates several types of skin-damaging free radicals, thus shielding the skin against the destruction of collagen and other dermal matrix proteins. An *in vitro* study² using a patented extract of both ashwagandha and *Phyllanthus emblica* demonstrated an impressive 54% inhibition of collagen-degrading enzymes and an 86% inhibition of those that break down hyaluronic acid—the skin's natural moisturizer.

The unique combination of natural ingredients in **Enhanced**FernBlock® with Sendara® has been

scientifically proven to help skin look and feel good from the inside out. This formula is designed to complement topical sunscreens for <u>complete</u> skin protection.

A bottle containing **30** vegetarian capsules of **Enhanced FernBlock® with Sendara®** retails for \$39. If a member buys four bottles, the cost is only **\$26.25 per bottle**. Contains com and rice.

References

- 1. JANA. 2008;11(1):50-6.
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Note: Use topical sunscreens whenever exposed to sunlight. This product is not a sunscreen.

Patent Pending Sendara® is a registered trademark of NutraGenesis LLC. FernBlock® is a registered trademark of Industrial Farmaceutica Cantabria, S.A.



Item #01311



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Scientists have found that applying vitamin E to the skin greatly enhances dermal penetration and retention of moisture and natural skin lipids!⁵

Properly supported at a deep level, the skin's dermal barrier helps minimize the appearance of dry, dehydrated skin and inhibits premature skin aging!

Support your skin's natural ability to fight environmental stress and free radicals. Turn to the potent capacity of full spectrum vitamin E to help replenish the appearance of youthful skin!

The retail price of a 1 oz. jar of Cosmesis Vitamin E-ssential Cream is \$28. If a member buys two jars, the price is reduced to just \$19.50 a jar.

Vitamin E-sential Cream Advances Natives Technology Net W1 1 as

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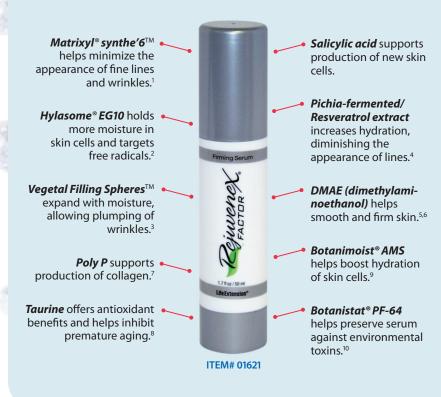
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- Product monograph: MatrixyI® synthe'6™. Used under authorization of Sederma, Inc.
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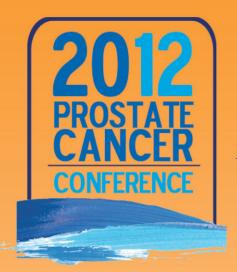
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BY AIMEE DINGWELL

Dr. Erika Schwartz

Bioidentical Expertise



They say that if you want to enact lasting change, start with yourself. That's exactly what physician and bioidentical hormone expert Dr. Erika Schwartz did. In 1996, she was in her mid 40s. By that time, Schwartz was no stranger to overcoming obstacles—in her teens her family fled the communist regime of her native Romania for Rome. From there, with her sights set on the US, she earned a full scholarship to New York University, and then went to medical school. She became an emergency room doctor, successfully leading one of the largest tertiary care emergency centers in New York, and then built and directed the largest internal medicine practice in Westchester County. But at age 46, she faced a daunting dilemma that, even as a doctor, she couldn't fix—her own menopause.

"The tipping point for me came when I was 46," says Schwartz. "I had a traumatic menopause, and at the time was trying the conventional route of taking Premarin® and birth control pills and feeling really, really horrible." Just like many of her patients. "I was bloated, severely anemic because when I started taking the Premarin® and birth control pills I started bleeding excessively and was gaining weight. This was not the way I wanted to age."

Then a patient asked Dr. Schwartz to sign a prescription for hormones to be filled by a compounding pharmacy in California. Schwartz was curious and perplexed. "What exactly am I signing?" Schwartz asked her patient. The patient explained it was for special hormones mixed specifically for her symptoms. And the symptoms were exactly what Schwartz was experiencing.

Schwartz agreed to sign the prescription but called the pharmacy for more information. "I said, 'I need to understand what you are doing with these compounded drugs. I was under the impression that only drugs that are FDA approved can be prescribed.' This is what I had been doing for 15 vears," explains Schwartz. "He sent me some information which was not useful. However, my interest was piqued and I began researching this topic on my own."

Because Schwartz was so desperate to find relief for her own symptoms, she ordered the same concoction of hormones, at the cost of \$450. Within a week she received several powders and creams-some needed refrigeration, some were in syringes, some in jars-and all had elaborate directions. "It was insane," says Schwartz. "But when you're desperate, you do anything that you think will correct the problem. At 46 years old, I was not about to resign myself to a compromised old age."

Being a scientist, Schwartz painstakingly and methodically investigated the literature on hormones. She finally assembled a workable protocol for herself that was based on published studies.

Within a week she felt like herself again, and within six weeks, her weight had decreased, her mood stabilized, and she felt energetic. Schwartz knew she was on to something, but she needed the pharmacist's help if she wanted to make a difference for her patients, especially considering the enormous cost involved. After six weeks, she called the pharmacy again seeking guidance. She told the pharmacist, "I have a lot of patients with nondescript symptoms that no one wants to take care of, who are taking birth control pills or antidepressants and/or sleeping pills and feeling horrible. Patients who will probably benefit from what you are doing, but \$450 a month may be a burden on some of my patients who need this treatment the most." Dr. Schwartz was looking for a way to make this protocol more affordable for her patients. "Fortunately for me, this man said, 'I don't need you or your patients. I have enough here so go away.' So this is the guy I can thank for the rest of my life, because it prompted me to find a better solution," remembers Schwartz. "You know in everybody's history, there's that moment when we get rejected and that rejection turns into the biggest success of your life." And so began Schwartz's journey to become one of the world's foremost experts and advocates for bioidentical hormones.



Not one to give up, Schwartz instead contacted a local compounding pharmacy in New York that was compounding for hospitals. "The pharmacist was interested enough in sharing his information to bring me into his lab," says Schwartz.





She then spent the next few vears working with him and her patients developing a protocol that has become a gold standard of bioidentical hormone care. Schwartz now teaches it to physicians for continuing medical education credits. "The approach has stood the test of time, because 16 vears later most of the patients I work with still line up within the protocols." It's also a procedure that patients and doctors can easily follow, notes Schwartz.

Over the years, the FDA has approved some bioidentical hormones, some of which Schwartz uses in her protocols, but she will clarify that it's only the delivery method that's actually been approved. "The only thing that is different between compounded and FDA approved bioidentical hormones is the method of delivery, as in creams versus gels, patch versus oral. It's simply the vehicle through which the same hormone is delivered."

Schwartz points out that for many doctors compounding hormones is unfortunately overly complicated, "because there aren't enough doctors teaching it the right way." Currently, there are no FDA-approved combination products or FDA-approved testosterone versions for women. "And women do need testosterone."

Where the Trouble Began— **Research Gone Wrong**

As Schwartz sees it, bioidentical hormones are the most natural way to restore hormone function. So why aren't more doctors using bioidentical hormones?

According to Schwartz, the US got hoodwinked into believing that synthetic hormones, like Premarin®, were the only way to treat menopause and other hormone imbalances when the Women's Health Initiative (WHI), a massive nationwide research study. began in the 1990s. "Bioidenticals have been around since the 30s. but they got lumped in with synthetics by the FDA and NIH when the Women's Health Initiative occurred," explains Schwartz.

The WHI was a 15-year study started by the NIH to find ways to prevent cardiovascular disease, cancer, and osteoporosis. The study compared horse urinederived, unnatural to the human body estrogen (Premarin®)/synthetic progestin (Provera®) versus placebo, and horse urine-derived unnatural to the human body estrogen (Premarin®) versus placebo, with both products supplied by then manufacturer Wyeth Pharmaceuticals Inc. Premarin® was the typical choice as it had been around in the US since the 1950s, says Schwartz, but many physicians and patients alike were not aware that natural options also existed. What most doctors were unaware of was that European countries, such as Germany, have never used Premarin®.

At the time, most doctors did not know there were more natural forms of estrogen and progesterone available, including an FDA approved bioidentical estrogen patch.

According to Schwartz, the academic institutions were uneducated and uninformed and "took money and product" instead of researching other options. The results were catastrophic. The WHI ended up showing that the synthetic hormone options increased a woman's risk of heart attack, stroke and in some cases. cancer. "So, when in 2002 the WHI went bust because Premarin® and Provera® actually increased the risk rather than decreased the risk of cancer and heart attack and stroke, the party line became all hormones were the same."

But Schwartz, and the head of the International Menopause Society (IMS), contend there is no class effect, meaning not all estrogens behave the same, and not all progesterones behave the same. "To say hormones have a class effect is an assumption that is critically wrong. It's an assumption that's affected more than 100 million women over the past 10 years."

Editor's note: Life Extension's prior analyses shows that synthetic progestins (Provera®-Used in the WHI study) are quite dangerous and that **natural progesterone** (used by enlightened women) may confer protective effects. Conflicting data exists as to the safety of various estrogen drugs, but the preponderance of data indicates women in need of estrogen should consider a compounded formula of primarily estriol, with smaller amounts estradiol, and follow the safety caveats outlined on the website, www.lef.org/femalehormone.

Progress That Isn't Progressive Enough

Despite international consensus that there is no class effect of hormones, except in the United States, Schwartz is fighting an uphill battle. "I am a conventional doctor. who for personal reasons, found another way that works better." says Schwartz. "And also discovered facts that maybe everybody should have known, including the physicians, who to this day, are still being brainwashed."

"I see patients every day who come to me and say 'My doctor told me that bioidentical hormones are dangerous or don't work or not as effective as those made by the big drug companies," laments Schwartz. "To this day, things aren't changing dramatically, but hopefully with what I am doing and others are doing, it will keep getting better."

Yes, Schwartz has successfully and healthfully moved through her own menopause. She's dedicated her medical practice to helping men and women change their lives through bioidentical hormones, proper nutrition, and stress management. She's written four best-selling books, including The Hormone Solution, The 30-Day Natural Hormone Plan. The Hormone Friendly Diet, and Dr. Erika's Hormone Solution for your Daughter. And she's personally treated more than 20,000 patients around the world.

But as she sees it, the power of big pharma is still influencing doctors. "Pfizer, who owns Wyeth, has such a huge hold over the academic institutions, NIH, and the whole pharmaceutical environment in which we function," says Schwartz. "As a result, medical knowledge is often dictated by the

pharmaceutical companies, not by science. Around 2009. I was invited by the head of the department of OB/GYN at Harvard University to lecture on hormones because I had published an article in the Medical Clinic of North America. When I asked the OB/GYNs why is it that I, who am a clinician, have to do their research, they gave me a very disturbing answer," recalls Schwartz. "Their answer was that there was a whole generation of physicians that's been trained to prescribe Premarin® and Provera® and don't know any other way. These indoctrinated physicians will have to die out before a new generation of physicians can start prescribing to women what they truly need. I find that criminal."

Interestingly, Schwartz still believes ignorance and lack of understanding is more to blame than money and greed. "It's not about the fact that you make more money with Premarin®. Yes, Pfizer makes money with Premarin®. But vou can make a ton more money with estradiol and progesterone and you can also have healthier women who won't need to be taking antidepressants and sleeping pills," she says. "Women who won't be getting into car accidents because they are driving around like zombies."

She asserts that the problem is simply not enough conventional doctors have taken the time to educate themselves on the use and benefits of bioidentical hormones. It is for this reason that she founded the non-profit Bioidentical Hormone Initiative to educate physicians and dispel the idea that there's a class effect with bioidenticals. "The moment you gain the support of the conventional medical world, vou can make real differences."

And real differences for men and women of all ages, says Schwartz, because, "everybody needs hormones, they are the juice of life." We all need hormones, Schwartz says. "And they prevent the need for antidepressants, which nobody needs. They're dangerous drugs. They're addictive. And trillions of dollars are spent on them. I can't tell vou how many women and men I take off of them."

"There are trillions of dollars being spent on research on drugs that we know don't work, and vet we are hiding the information about bioidentical hormones and how they help us prevent disease, stay well, and continue as active participants in life," she concludes. •

To review Life Extension's **Female Hormone Restoration Protocol** log on to: lef.org/femalehormone.

For further information on Dr. Erika Schwartz please visit www.drerika.com.

If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.



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According to the *Proceedings of the National* Academy of Sciences, alpha tocopherol (regular vitamin E) displaces critically important gamma tocopherol in the cells. While alpha tocopherol inhibits free-radical production, gamma tocopherol is required to trap and neutralize existing free radicals.²

Four prestigious scientific journals have highlighted **gamma tocopherol** as one of the most critically important forms of vitamin E for those seeking optimal health benefits.

Most commercial vitamin E supplements contain little, if any, gamma tocopherol. They instead rely on alpha tocopherol as the primary ingredient. However, it is gamma tocopherol (not the alpha form) that quenches peroxynitrite, the free radical that plays a major role in the development of age-related decline.2,3

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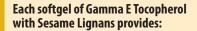
In a human study that combined gamma tocoph**erol** with **sesame lignans**, gamma tocopherol/sesame was 25% more effective than gamma tocopherol/ tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.^{4,5} Since tocotrienols are considered nature's most potent antioxidants, the fact that low-cost gamma tocopherol with sesame is more effective is a remarkable finding.

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MOST POPULAR PANELS								
Life Extension Member Pricing								
COMPREHENSIVE PANELS MALE LIFE EXTENSION PANEL (LC322582)	\$269	THE CBC/CHEMISTRY PROFILE (LC381822) OVER 40 PARAMETERS TESTED	\$35					
CBC/Chemistry Profile DHEA-S		CARDIOVASCULAR RISK PROFILE						
Homocysteine TSH for thyroid funct Free Testosterone Total Testosterone	ion	Total Cholesterol Cholesterol/HDL Ratio HDL Cholesterol Estimated CHD Risk						
Estradiol Vitamin D 25- hydrox	v	LDL Cholesterol Glucose						
PSA (prostate-specific antigen)	.,	Triglycerides Iron						
C-Reactive Protein (high-sensitivity)		LIVER FUNCTION PANEL						
FEMALE LIFE EXTENSION PANEL (LC322535)	\$269	AST (SGOT) Total Bilirubin ALT (SGPT) Alkaline Phosphatase						
CBC/Chemistry Profile DHEA-S	\$209	LDH						
Estradiol Homocysteine		KIDNEY FUNCTION PANEL						
Progesterone TSH for thyroid funct	ion	BUN/Creatinine Ratio						
Free Testosterone Total Testosterone	.,	Creatinine Uric Acid BLOOD PROTEIN LEVELS						
C-Reactive Protein Vitamin D 25- hydrox (high sensitivity)	.y	Total Protein Globulin						
(g.,,),		Albumin Albumin/Globulin Ratio						
MALE WEIGHT LOSS PANEL (LCWLM)*	\$299	BLOOD COUNT/RED AND WHITE BLOOD						
CBC/Chemistry Profile DHEA-S Insulin PSA		CELL PROFILE Red Blood Cell Count Monocytes						
Insulin PSA Free Testosterone (prostate-specific ant	igen)	Red Blood Cell Count Monocytes White Blood Cell Count Lymphocytes						
Estradiol Total Testosterone	18011)	Eosinophils Platelet Count						
Free T3 TSH		Basophils Hemoglobin						
C-Reactive Protein Free T4 (high sensitivity) SHBG		Polys (Absolute) Hematocrit Lymphs (Absolute) MCV						
(high sensitivity) SHBG		Monocytes (Absolute) MCH						
FEMALE WEIGHT LOSS PANEL (LCWLF)*	\$299	Eos (Absolute) MCHC						
CBC/Chemistry Profile DHEA-S		Baso (Absolute) Polynucleated Cells						
Progesterone Insulin Free Testosterone Total Testosterone		RDW Blood Mineral Panel						
Estradiol TSH		Calcium Sodium						
Free T3 Free T4		Potassium Chloride						
C-Reactive Protein SHBG		Phosphorus Iron						
(high sensitivity)		NOTE: CBC/Chemistry profile is included in the Male						
MALE HORMONE ADD-ON PANEL (LCADDM)*	\$155	and Female Life Extension panels and Weight Loss P	anels.					
Pregnenolone and Dihydrotestosterone (DH1	Γ)	GENERAL HEALTH						
To provide an even more in-depth analysis of		HEMOGLOBIN A1C (HBA1C) (LC001453)	\$31					
a man's hormone status, Life Extension has created this panel as an addition to the Male	4	Hemoglobin A1C evaluates long-term blood sugar control. Serum glucose sometimes react	S					
Life Extension Panel. This panel provides	,	with important proteins in the body rendering						
valuable information about a testosterone		them nonfunctional. Since this process, known	1					
metabolite that can affect the prostate, and		as glycation is one of the leading theories of aging, Life Extension® believes everyone						
the mother hormone that acts as a precursor to all other hormones.		should check their A1C level.						
		VITAMIN D (250H) // 2004250	¢ 4.7					
) FEMALE HORMONE ADD-ON PANEL (LCADDF)	* \$125	VITAMIN D (250H) (LC081950) This test is used to rule out vitamin D	\$47					
Pregnenolone and Total Estrogens To provide an even more in-depth analysis		deficiency as a cause of bone disease.						
of a woman's hormone status, Life Extension		It can also be used to identify hypercalcemia.						
has created this panel as an addition to the		FOOD SAFE ALLERGY TEST (LCM73001)	\$174					
Female Life Extension Panel. This panel		This test measures delayed (IgG) food	Ψ117					
provides valuable information about total estrogen status, and the mother hormone that	at	allergies for 95 common foods.						
acts as a precursor to all other hormones.	at .	○ ASPIRINWORKS™† (LC501620)	\$149					
`		Taking aspirin to prevent heart attack?	\$140					
LIFE EXTENSION THYROID PANEL (LC304131) TSH, T4, Free T3, Free T4.	\$75	Is it working? This is a random urine test						
130, 14, Fiee 13, Fiee 14.		used to measure your resistance to aspirin.						
FEMALE COMPREHENSIVE HORMONE PANEL	\$299	OMEGA SCORE™** (LCOMEGA)	131.25					
(LC100011) CBC/Chemistry Profile		Provides valuable information on your risk						
(see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone,		of developing heart disease, sudden heart attack, and cardiac death. The Omega						
Total and Free Testosterone, SHBG, TSH, Free		Score TM also includes your AA:EPA ratio,						
		allowing you to determine and track a major						
MALE COMPREHENSIVE HORMONE PANEL†	\$299	factor in total body inflammation.						
(LC100010) CBC/Chemistry Profile (see description above), DHEA-S, Estradiol,		COQ10* (COENZYME Q10) (LC120251)	\$145					
DHT, PSA, Pregnenolone, Total and		This test is used to check the blood level	ψιτυ					
Free Testosterone SHRG TSH Free T3		of CoO10 and will enable more precise						

* This test requires samples to be shipped to the lab on dry ice for customers using a Blood Draw Kit and will incur an additional \$35 charge. If the customer is having blood drawn at a LabCorp facility, this extra charge does not apply.

of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.

** This test is packaged as a kit, requiring a finger stick performed at home.

Free Testosterone, SHBG, TSH, Free T3.



Other Popular Panels Life Extension Member Pricing

ENERGY PROFILE (LC100005) CBC/Chemistry Profile (see description), Epstein —Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferr	\$375
Total and Free Testosterone, DHEA-S, Free T3, Fre Cortisol, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Insulin.	ee T4,
ANEMIA PANEL (LC100006) CBC/Chemistry Profile (see description), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.	\$86
INFLAMMATION PANEL (LC100007) CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.	\$135
THYROID ANTIBODY PROFILE (LC100004) Thyroid Antithyroglobulin Antibody (ATA) and Thyroid Peroxidase Antibody (TPO).	\$99
Popular Single Tests	
HORMONES CORTISOL (LC004051) This test is to measure adrenal function.	\$39
DHEA-SULFATE (LC004020) This test shows if you are taking the proper amount of DHEA. This test normally costs \$100 or more at commercial laboratories.	\$61
DIHYDROTESTOSTERONE (DHT)* (LC500142) Measures serum concentrations of DHT.	\$99
ESTRADIOL (LC004515) For men and women. Determines the proper amount in the body.	\$33
INSULIN FASTING* (LCOO4333) Can predict those at risk of diabetes, obesity, and heart and other diseases.	\$42
PREGNENOLONE* (LC140707) Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing's syndrome.	\$116
PROGESTERONE (LC004317) Primarily for women. Determines the proper amount in the body.	\$55
SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016) This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens	\$33
SOMATOMEDIN C (IGF-1) (LC010363) Indicates growth hormone secretion levels. Low levels have been associated with atherosclerosis as well as all-cause mortality.	\$75

CARDIAC RISK Lp-PLA2 (PLAC TEST)* (LC123240) This test is used to aid in predicting risk for coronary heart disease, and ischemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries. C-REACTIVE PROTEIN (HIGH-SENSITIVITY) (LC120766) Measures inflammation factors in arteries. Recent studies indicate that C-reactive protein may be the most accurate risk factor for predicting heart attack and stroke. CARDIAC PLUS† (LC100008) CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine. VAP PLUS† (LC100009) VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy. FIBRINOGEN* (LC001610) High levels of this blood-clotting factor increase the risk of heart attack and stroke. **HOMOCYSTEINE (LC706994)** Can indicate if you are likely to have a heart attack or stroke. Even if you take folic acid, you still may have dangerously high levels of this artery-clotting metabolic debris that can be lowered with high doses of TMG, vitamin B6, and vitamin B12. **VAP™ TEST (LC804500)** The VAP cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. Direct measurements, not estimations, are provided for total cholesterol, LDL, HDL, VLDL, and cholesterol subclasses. MALE HEALTH PSA (PROSTATE-SPECIFIC ANTIGEN) (LC010322) Can provide an early warning sign for prostate disorders and possible cancer. FREE-PSA (INCLUDES TOTAL PSA)* (LC480780) Recommended to determine if an elevated PSA is indicative of prostate cancer. **BONE HEALTH** OSTEOCALCIN* (LC010249) Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized

by increased bone turnover, especially osteoporosis.

DPD CROSS LINK URINE TEST (LC511105)

Deoxypyridinoline can be used to monitor

The deoxypyridinoline (DPD) urine test can be used to measure bone re-absorption rates in

healthy individuals and in those with enhanced risk of developing metabolic bone diseases.

therapies (which may include bisphosphonate drugs) in people diagnosed with osteoporosis.

This is NOT a complete listing of

LE blood test services. Call 1-800-208-3444

for additional information.

ORDER LIFE-SAVING
BLOOD TESTS
FROM VIRTUALLY
ANYWHERE IN THE US!

TERMS AND CONDITIONS

\$125

\$42

\$145

\$330

\$31

\$90

\$31

\$61

\$91

\$79

This blood test service is for informational purposes only and no specific medical advice will be provided. National Diagnostics, Inc., and the Life Extension Foundation contract with a physician who will order your test(s), but will not diagnose or treat you. Both the physician and the testing laboratory are independent contractors and neither National Diagnostics, Inc., nor the Life Extension Foundation® will be liable for their acts or omissions. Always seek the advice of a trained health professional for medical advice, diagnosis, or treatment. When you purchase a blood test from Life Extension/National Diagnostics, Inc., you are doing so with the understanding that you are privately paying for these tests. There will be absolutely no billing to Medicare, Medicaid, or private insurance. I have read the above Terms and Conditions and understand and agree to them.

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X
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3600 West Commercial Boulevard Fort Lauderdale, FL 33309

Phone your order to: **1-800-208-3444**Fax your order to: **1-866-728-1050**

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For non-member prices call 1-800-208-3444

Products

AMINO ACIDS

Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginate Branched Chain Amino Acids D, L-Phenylalanine Capsules

GABA Powder Glycine Capsules

Glycine Powder L-Árginine Capsules

L-Arginine Free Base Powder Arginine/L-Ornithine Capsules L-Carnitine Capsules

L-Glutathione, L-Cysteine & C L-Glutamine Capsules

L-Glutamine Powder

L-Glutamine Fowder
L-Lysine Capsules
L-Lysine Powder
L-Tyrosine Tablets
Mega L-Glutathione Capsules

N-Acetyl-L-Cysteine Capsules
Optimized Carnitine with GlycoCarn®

PharmaGABA

Super Carnosine Capsules

Taurine Capsules

ArthroMax™ with Theaflavins and AprèsFlex™ ArthroMax™ Advanced with UC-II® and AprèsFlex™

Bone-Up™ Bone Restore™

Bone Strength Formula w/KoAct™

Chondroitin Sulfate

Fast Acting Joint Formula

Glucosamine Chondroitin Capsules

BRAIN HEALTH

Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginate

CDP Choline Capsules

Cognitex® with NeuroProtection Complex Cognitex® with Pregnenolone &

NeuroProtection Complex

Cognitex® Basics

DMAE

Ginkgo Biloba Certified Extract™

Huperzine A
Lecithin with B5 and BHA

Lecithin Granules
Lecithin Granules
Methylcobalamin Lozenges
Neuro-Mag™ Magnesium L-Threonate
Optimized Ashwagandha Extract

Phosphatidylserine Capsules

Rhodiola Extract Super Ginkgo Extract

Vinpocetine

DIGESTIVE

Bifido GI Balance

Bromelain Powder

Carnosoothe w/PicroProtect

Daily Ginger® Digest RC™

Enhanced Super Digestive Enzymes

Life Flora™

Natural EsophaGuard

Pancreatin Probiotic All-Flora®

Probiotic Anti-Aging Probiotic Cleanse™

Probiotic Colon™

Regimint

Theralac Probiotics

DURK AND SANDY PRODUCTS

Blast™

Dual-C

Inner Power™

Memory Upgrade™

EYE CARE

Bilberry Extract

Blackcurrant Freeze Dried Extract

Brite Eyes III

Eye Pressure Support with Mirtogenol® Overxcast Polarized Sunglasses

Solarshield Sunglasses
Super Zeaxanthin with Lutein &

Meso-Zeaxanthin and C3G (Plus Astaxanthin also available)

Vision Optimizer

FIBER

AppleWise Polyphenol Fiber Food

Hi-Lignan® Nutri-Flax®

WellBetX PGX® Soluble Fiber Blend

Spicy Cruciferous Vegetable Soup Cruciferous Vegetable Soup Rich Rewards Coffee

HAIR CARE

Dr. Proctor's Advanced Hair Formula

Dr. Proctor's Shampoo
Life Extension Shampoo and Conditioner Super-Absorbable Tocotrienols

HEART HEALTH

AppleWise Polyphenol Advanced Lipid Control Aspirin (Enteric Coated)
Blood Fruit

Cho-Less[™]

D-Ribose Capsules
D-Ribose Powder
Endothelial Defense™ with

Full-Spectrum Pomegranate™

Fibrinogen Resist

Forskolin

Garlicforce™ Homocysteine Resist

Krill Healthy Joint Formula

Natural BP Management

Olive Leaf Vascular Support Peak ATP® with GlycoCarn®

PhosphOmega

Policosanol

Pycnogenol® French Maritime Pine Bark Extract Red Yeast Rice

Super Absorbable CoQ10™ with *d*-Limonene Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract

Super Ubiquinol CoQ10 Super Ubiquinol CoQ10 with Enhanced

Mitochondrial™ Support

Theaflavin Standardized Extract

TMG Powder TMG Tablets

HERBAL/PHYTO PRODUCTS

Artichoke Leaf Extract

Astaxanthin

Berry Complete

Blueberry Extract

Blueberry Extract w/Pomegranate Butterbur Extract w/Standardized

Rosmarinic Acid Calcium D-Glucarate

Cilantro Herbal Extract

Citrus Bioflavonoid

Enhanced Berry Complete with RZD™ Acai Floradix® Iron & Herbs

Floravital[®] Iron & Herbs
Floravital[®] Iron & Herbs
Full-Spectrum Pomegranate[™]
Grapeseed Extract with Resveratrol &

Pterostilbene

Huperzine A with Natural Vitamin E

Kyolic® Garlic Formula 105 Kyolic® Reserve

Mega Green Tea Extract

Mega Green Tea Extract (Decaffeinated) (also w/CoffeeGenic Green Coffee extract)

Mega Lycopene Extract

Nutrim

Optimized Ashwagandha Extract

Optimized Ashwagan Optimized Garlic Pomegranate Extract

Pomegranate Juice Concentrate

ProGreens® Pure-Gar™

Pycnogenol Optimized Quercetin

Resveratrol with Synergistic Grape-Berry Actives

Rhodiola Extract

Rosmarinic Acid Extract

Silymarin

SODzyme™ with GliSODin®

Stevia Extract

Super Bio-Curcumin®

Super Ginkgo Extract
Triple Action Cruciferous Vegetable Extract

Venotone

Whole Grape Extract

HORMONES

Advanced Natural Sex for Women®

Cordyceps CS-4 7-Keto® DHEA

DHEA

DHEA
DHEA Complete
GH Pituitary Support Day Formula
GH Pituitary Support Night Formula

Melatonin

Melatonin Timed Release

Natural Estrogen with Pomegranate Extract

Pregnenolone ProFem Cream

Pure IGF

Super Miraforte with Standarized Lignans

IMMUNE ENHANCEMENT

AHCC® (Active Hexose Correlated Compound) Aloe Vera Force™

Buffered Vitamin C Powder

Echinacea

Enhanced Life Extension Whey Protein

i26 Hyperimmune Egg Immune Protect with PARACTIN®

Lactoferrin

Lifeshield® Immunitv™

Maitake SX-Fraction

Norwegian Shark Liver Oil
Optimized Fucoidan w/Maritech® 926

Primal Defense™

ProBoost™ Thymic Protein A Pure Gar™

Sambu® Guard Supercritical Oreganoforce™

Thymic Immune Factors Ultimate Flora Advanced Immunity

Vitamin C with Dihydroquercetin Zinc Lozenges with Vitamin C

INFLAMMATORY REACTIONS

Arthro-Immune Joint Support ArthroMax™ with Theaflavins

Boswella Boswella™ Topical Cream

Bromelain (Specially-coated)

DHA 240

Emulsified Norwegian Cod Liver Oil Emulsified Super Twin EPA/DHA

Fast Acting Joint Formula Ginger Force Krill Oil

5-LOX Inhibitor w/AprèsFlex™

Mega EPA/DHAอูน Li A/DHA Mega GLA with Sesame Lignans MSM

Natural Relief 1222™ Cream Omega-3 Chewables

Serraflazvme

SODzyme™ with GliSODin® and Wolfberry Super Omega-3 EPA/DHA with Sesame

Lignans & Olive Fruit Extract

Tart Cherry

Udo's Choice Oil Zyflamend Easy

LIVER HEALTH Branch Chain Amino Acids

N-Acetyl Cysteine Liver Force Liver Efficiency Formula

Certified European Milk Thistle

Hepatopro SAMe

Silymarin **MINERALS**

Biosil

Bone Restore

Bone Strength Formula w/KoAct® Bone-Up™

Boron Capsules Calcium Citrate with D3

Chromium Ultra

Copper Dr. Strum's Intensive Bone Formula

Products

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Optimized Chromium w/Crominex® 3+ OptiZinc Sea-Iodine™ Selenium Se-Methyl L-Selenocysteine Strontium Vanadyl Sulfate Zinc/Vitamin C Lozenges

MISCELLANEOUS

Blender Blood Pressure Monitor Arm Cuff Medium Cell Sensor Gauss Meter™ CR Way Edition Advanced Dietary Software Empty Gelatin Capsules LifeShield® Breathe™ The Capsule Filler Machine

MITOCHONDRIAL SUPPORT

Acetyl-L-Carnitine Acetyl-L-Carnitine-Arginate Mitochondrial Basics w/BioPQQ™ Mitochondrial Energy Optimizer w/BioPQQ™ Optimized Carnitine with GlycoCarn® Super Absorbable CoQ10™ with *d*-Limonene Super Alpha Lipoic Acid with Biotin Super R-Lipoic Acid Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support

MOOD RELIEF

Adrenal Energy Formula™ Bioactive Milk Peptides Holy Basil LifeShield® Cordyceps L-Theanine

Enhanced Natural Sleep® w/ Melatonin Enhanced Natural Sleep® w/o Melatonin Natural Stress Relief Optimized TryptoPure® Plus Stabilium® 200 SAMe

St. John's Wort Extract Tryptopure® L-Tryptophan

MOUTH CARE

Advanced Oral Hygiene Mist Oral III™ with CoQ10 Mouthwash w/Pomegranate Toothpaste

MULTIVITAMIN

Children's Formula Life Extension Mix Comprehensive Nutrient Pack Life Extension Booster

Life Extension Booster

Life Extension Mix™ Capsules

Life Extension Mix™ Powder

Life Extension Mix™ Tablets

Life Extension Mix™ MyO Copper Capsules
Life Extension Mix™ w/O Copper Capsules
Life Extension Mix™ w/O Copper Tablets
Life Extension Mix™ w/Extra Niacin
Life Extension Mix™ w/Extra Niacin w/o Copper
Life Extension Mix™ w/Stevia Powder
Life Extension Mix™ w/Stevia w/o Copper Powder

Life Extension One-Per-Day

Life Extension Two-Per-Day
Super Booster Softgels w/Advanced K2 Complex

PET CARE

Cat Mix Dog Mix

PROSTATE & URINARY HEALTH BetterWOMAN®

Optimized Cran-Max® with UTIRose™ 5-LOXIN®

(Water-Soluble) Pumpkin Seed Extract Super Saw Palmetto with Beta-Sitosterol Super Saw Palmetto/Nettle Root Formula w/Beta-Sitosterol

Ultra Natural Prostate Formula

SKIN CARE Advanced Under Eye Serum with Stem Cells Amber Self MicroDermAbrasion Anti-Aging Mask Anti-Glycation Serum Antioxidant Rejuvenating Foot Cream Antioxidant Rejuvenating Foot Scrub Antioxidant Rejuvenating Hand Cream

Antioxidant Rejuvenating Hand Scrub
Anti-Redness & Blemish Lotion Bio-Collagen w/Patented UC-II® Broccoli Sprout Corrective Clearing Mask

DermaWhey DNA Repair Cream

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Face Rejuvenating Antioxidant Cream Enhanced FernBlock® with Sendara™

Fine Line-Less Hair Suppress Formula

Healing Formula All-in-One Cream Healing Mask

Hyaluronic Facial Moisturizer Hydrating Anti-oxidant Face Mist Hydroderm®

Lavilin Underarm Deodorant Lifting & Tightening Complex LifeShield® Reishi Melatonin Cream

Mild Facial Cleanser

Neck Rejuvenating Antioxidant Cream

Peel Off Cleansing Mask Pigment Correcting Cream Figment Correcting Cream
(Ultra) Rejuvenex®
Rejuvenex® Body Lotion
RejuveneX® Factor
RejuveneX® Factor Firming Serum
Rejuvenating Serum
Resveratrol Anti-Oxidant Serum

Skin Lightening Serum
Skin Restoring Ceramides w/Lipowheat™
Skin Stem Cell Serum
Stem Cell Cream w/Alpine Rose

Supercritical Omega 7[™] Total Sun Protection Cream

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Ultra RejuveNight® w/ Progesterone
Ultra RejuveNight® w/o Progesterone

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Vitamin E-ssential Cream Vitamin K Healing Cream

Natural Estrogen w/Pomegranate Soy Protein Concentrate Super Absorbable Soy Isoflavones Ultra Soy Extract

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Anti-Alcohol Antioxidants w/HepatoProtection Complex

Benfotiamine w/Thiamine Breast Health Formula

Butterbur Extract w/Standardized

Rosmarinic Acid Chlorella

Chlorophyllin w/Zinc Cleanse Smart Green Coffee Extract CoffeeGenic™

(also w/Glucose control) Coriolus Super Strength

CR Mimetic Longevity Formula Cinsulin® w/InSea^{2®} and Crominex® 3+

EDTA

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Fem Dophilus

Femmenessence MacaPause®

Flush & Be Fit GlucoFit™

Hearos™ Ear Plugs

Ideal Bowel Support 299 Maitake SX-Fraction™

Migra-eeze™ Natural Female Support Organic Total Body Cleanse

Pecta-Sol®

Potassium Iodide PQQ Caps with BioPQQ™

PteroPure™ Prelox® Natural Sex for Men® Pyridoxal 5' - Phosphate

Rosmarinic Acid Extract Ultra Natural Prostate w/AprèsFlex™ and Standardized Lignans

SPORTS PERFORMANCE

Creatine Capsules Creatine Powder

Enhanced Life Extension Protein DMG (N, N-dimethylglycine)

L-Glutamine Capsules L-Glutamine Powder

VITAMINS

Ascorbic Acid Powder Ascorbyl Palmitate Capsules

B12

Beta-Carotene

Biotin Capsules Biotin Powder

Biotin Powder
Buffered Vitamin C Powder
Complete B Complex
Folic Acid + B12
Gamma E Tocopherol w/Sesame Lignans

Gamma E Tocopherol/Tocotrienols

Inositol Capsules Inositol Powder

Mega Lycopene Extract Methylcobalamin

MK-7

No-Flush Niacin Optimized Folate PABA Capsules

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Tocotrienols w/Sesame Lignans Vitamin A Nutrisorb Vitamin B3 (Niacin) Capsules

Vitamin B6 Vitamin B12 Tablets

Vitamin C

Vitamin D Vitamin D3

Vitamin D3 w/Sea-lodine™ Vitamins D and K w/Sea-lodine™

Vitamin E Vitamin K1

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Advanced Anti-Adipocyte Formula w/AdipoStat & Integra Lean®

Anti-Adipocyte Formula w/AdipoStat Calorie Control Weight Management Formula w/CoffeeGenic™ Green Coffee Extract

7-Keto DHEA DHEA® Complete Fucoxanthin Slim™

HCA

Integra-Lean® Irvingia LuraLean® Caps Special Propolmannan Particle Size

Optimized Irvingia w/Phase 3™ Calorie

Control Complex

Optimized Saffron with Satiereal® Natural Appetite Control

Natural Glucose Absorption Control Stevia Liquid Extract

Super CLA Blend w/Guarana and Sesame Lignans

Super CLA Blend w/Sesame Lignans Udo's Choice Wholesome Fast Food Blend WellBetX PGX® Soluble Fiber Blend

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	Buy 4 bottles, price each	30.00	22.50		
00788	ACETYL-L-CARNITINE ARGINATE - 100 caps	59.00	44.25		
	Buy 4 bottles, price each	50.99	38.24		
01628	ADRENAL ENERGY FORMULA™ - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01308	ADVANCED LIPID CONTROL - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01521	ADVANCED ORAL HYGIENE - 60 veg. mint lozenges	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00681	AHCC - 500 mg, 30 caps	59.98	44.99		
00001	Buy 4 bottles, price each	53.33	40.00		
46925	ALLI® REFILL PACK - 120 caps	69.95	58.00		
01375	ALOE VERA FORCE™ - 60 veg. caps	34.95	26.21		
00457		37.00	27.75	_	
00437	ALPHA-LIPOIC ACID W/BIOTIN (SUPER) - 250 mg, 60 caps		-		
04.440	Buy 4 bottles, price each	32.00	24.00		
01440	ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO - 100 caps	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01510	ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT - 60 veg. caps	35.00	26.25		
	Buy 4 bottles, price each	32.00	24.00		
01509	ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT & INTEGRA LEAN® (ADVANCED) - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01625	APPLEWISE POLYPHENOL EXTRACT - 600 mg, 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	19.00	14.25		
01039	ARGININE/ORNITHINE - 500/250, 100 caps	16.00	12.00		
	Buy 4 bottles, price each	14.50	10.88		
00038	ARGININE/ORNITHINE POWDER - 150 grams	22.95	17.21		
	Buy 4 bottles, price each	19.00	14.25		
01624	(L)-ARGININE CAPS - 700 mg, 200 veg. caps	26.50	19.88		
	Buy 4 bottles, price each	23.25	17.44		
01025	(L)-ARGININE FREE-FORM POWDER - 100 grams	15.98	11.99		
	Buy 4 bottles, price each	14.31	10.73		
01617	ARTHROMAX™ w/THEAFLAVINS & APRESFLEX™- 120 veg. caps	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01618	ARTHROMAX™ ADVANCED w/UC-II® & APRESFLEX™ - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01404	ARTHRO-IMMUNE JOINT SUPPORT - 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
00919	ARTICHOKE LEAF EXTRACT - 500 mg, 180 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.38	19.04		
08000	ASCORBIC ACID POWDER - 454 grams	38.00	28.50	\vdash	
	Buy 4 bottles, price each	34.93	26.20		
00082	ASCORBYL PALMITATE - 500 mg, 100 caps	22.50	16.88	\vdash	
00002	Buy 4 bottles, price each	20.00	15.00		
	טטן ד טטננופס, אווטכ כמטוו	20.00	10.00		

No.		Retail Each	Member Each	Qty	Total
00888	ASHWAGANDHA EXTRACT (OPTIMIZED) - 60 veg. caps	\$10.00	\$7.50		
	Buy 4 bottles, price each	9.00	6.75		
01066	ASPIRIN - 81 mg, 300 enteric coated tablets	6.00	4.50		
	Buy 4 bottles, price each	5.33	4.00		
00708	ASTAXANTHIN - 2 mg, 30 softgels	10.25	7.69		
	В				
00920	BENFOTIAMINE W/ THIAMINE - 100 mg, 120 veg. caps	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.60	13.95		
00925	BENFOTIAMINE (MEGA) - 250 mg, 120 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01206	BERRY COMPLETE - 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	18.67	14.00		
01406	BERRY COMPLETE w/RZD™ ACAI (ENHANCED) - 60 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.00	19.50		
00664	BETA-CAROTENE - 25,000 IU, 100 softgels	11.25	8.44		
	Buy 4 bottles, price each	10.13	7.60		
00653	BETTERWOMAN® - 40 caps	40.00	30.00		
	Buy 4 bottles, price each	38.00	28.50		
)1622	BIFIDO GI BALANCE - 60 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01073	BILBERRY EXTRACT - 100 mg, 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
)1512	BIOACTIVE MILK PEPTIDES - 30 caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
1631	BIO-COLLAGEN w/PATENTED UC-II® - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
1006	BIOSIL™ - 5 mg, 30 veg. caps	18.95	15.16		
1007	BIOSIL™ - 1 fl oz	29.99	23.99		
0102	BIOTIN - 600 mcg, 100 caps	7.50	5.63		
	Buy 4 bottles, price each	6.50	4.88		
0145	BIOTIN POWDER - 30 grams	12.50	9.38		
	Buy 4 bottles, price each	11.00	8.25		
1008	BLAST™ - 600 grams of powder	26.95	20.21		
51526	BLENDER - 28 oz bottle	8.99	6.74		
1636	BLOOD FRUIT - 32 oz bottle	49.95	37.46		
0000	BLOOD PRESSURE MONITOR - ARM CUFF (medium)	99.95	64.97		
0004	BLOOD PRESSURE MONITOR - WRIST (travel size)	69.95	52.46		
)1214	BLUEBERRY EXTRACT - 60 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
)1438	BLUEBERRY EXTRACT w/ POMEGRANATE - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
1506	BONE FORMULA (DR. STRUM'S INTENSIVE) - 300 veg. caps	56.00	42.00		
,,,,,	Buy 4 bottles, price each	50.00	37.50		
)1611	BONE RESTORE - 150 caps	22.50	16.88		
,,,,,,,	Buy 4 bottles, price each	19.50	14.63		
)1211	BONE STRENGTH FORMULA w/KOACT® - 120 caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
0313	BONE-UP® - 240 caps	24.95	18.71		
,0010	Buy 4 bottles, price each	22.50	16.88		
1379					
113/9	BOOSTER - 60 softgels	48.00	36.00		
14600	Buy 4 bottles, price each	44.00	33.00		
11680	BOOSTER W/ADVANCED K2 COMPLEX (SUPER) - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
0000	MINIMA 2 mg 7111 cone	5.95	4.46		ı
0621	Boron - 3 mg, 100 caps Buy 4 bottles, price each	5.25	3.94		

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00202	BOSWELLA - 100 caps	\$38.00	\$28.50		
	Buy 4 bottles, price each	30.00	22.50		
00258	BOSWELLA TOPICAL CREAM - 4 OZ	15.00	11.25		
	Buy 4 jars, price each	13.00	9.75		
01253	BRANCHED CHAIN AMINO ACIDS - 90 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.00	12.75		
00999	BREAST HEALTH FORMULA - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
00893	BRITE EYES III - 2 vials, 5 ml each	34.00	25.50		
	Buy 4 boxes, price each	32.00	24.00		
00136	BROMELAIN POWDER - 100 grams	21.00	15.75		
	Buy 4 bottles, price each	18.75	14.06		
01203	BROMELAIN (SPECIALLY-COATED) - 500 mg, 60 enteric coated tablets	21.00	15.75		
01200	Buy 4 bottles, price each	19.00	14.25		
00884	BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID - 60 softgels	44.00	33.00		
30004	Buy 4 bottles, price each	39.60	29.70		
	C	33.00	23.10		
01015	CALCIUM CITRATE w/VITAMIN D - 300 caps	\$24.00	\$18.00		
	Buy 4 bottles, price each	21.25	15.94		
00535	CALCIUM D-GLUCARATE - 200 mg, 60 caps	18.00	13.50		
00000	Buy 4 bottles, price each	15.00	11.25		
11603	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA	60.00	45.00		
01693	w/coffeegenic™ green coffee extract Blueberry flavor - 414 grams powder	00.00	43.00		
	Buy 4 jars, price each	54.00	40.50		
	Buy 8 jars, price each	50.00	37.50		
01694	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR - 60 individual packs	64.00	48.00		
	Buy 4 boxes, price each	60.00	45.00		
	Buy 8 boxes, price each	56.00	42.00		
00118	CAPSULE FILLER MACHINE FOR "00" CAPSULES	18.95	14.21		
	Buy 4 machines, price each	18.25	13.69		
00613	CAPSULE FILLER MACHINE FOR "0" CAPSULES	18.95	14.21		
	Buy 4 machines, price each	18.25	13.69		
00916	CARNITINE w/GLYCOCARN® (OPTIMIZED) - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01041	L-CARNITINE - 500 mg, 30 caps	15.00	11.25		
	Buy 4 bottles, price each	13.20	9.90		
01258	CARNOSOOTHE w/PICROPROTECT™ - 60 veg. caps	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
01287	CARNOSINE (SUPER) - 500 mg, 90 caps	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01003	CAT MIX - 100 grams powder	15.00	11.25		
	Buy 4 jars, price each	12.00	9.00		
00390	CDP CHOLINE CAPS - 250 mg, 60 caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
00998	CELL SENSOR-EMF DETECTION METER	39.95	29.95		
01370	CHILDREN'S FORMULA LIFE EXTENSION MIX™ - 100 chewable tablets	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00550	CHLORELLA - 500 mg, 200 tablets	23.50	17.63		
	Buy 4 bottles, price each	21.00	15.75		
01571	CHLOROPHYLLIN w/ZINC - 100 mg, 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	20.00	15.00		
	Buy 1 Bottlee, price caon				
	CHO-LESS™ - 90 capsules	32.50	24.38		L
01359		32.50 14.95	24.38 11.21		

No.		Retail Each	Member Each	Qty	Total
00364	CHONDROITIN SULFATE CONCENTRATE - 400 mg, 60 tablets	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.00	13.50		
01477	CHROMIUM ULTRA - 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
01504	CHROMIUM W/CROMINEX® 3+ (OPTIMIZED) - 500 mcg, 60 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
00551	CILANTRO HERBAL EXTRACT - 1 OZ	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
01503	CINSULIN® W/INSEA2® AND CROMINEX® 3+- 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
00069	CITRUS BIOFLAVONOID - 100 caps	16.79	12.59		
	Buy 4 bottles, price each	15.56	11.67		
00818	CLA BLEND W/SESAME LIGNANS (SUPER) - 1000 mg, 120 softgels	36.00	27.00		
000.0	Buy 4 bottles, price each	33.00	24.75		
	Buy 10 bottles, price each	26.33	19.75		
00819	CLA BLEND w/GUARANA & SESAME (SUPER)-1000 mg, 120 softgels	42.00	31.50		
00019					
04070	Buy 4 bottles, price each	38.33	28.75		
01078	CLEANSE SMART - 60 caps	31.99	23.99		
00050	COD LIVER OIL (EMULSIFIED) - 12 fl oz (355 ml)	14.58	10.94		
	Buy 4 bottles, price each	12.27	9.20		
00293	COD LIVER OIL (EMULSIFIED) - 100 softgels (Emulsified)	10.97	8.23		
	Buy 4 bottles, price each	10.34	7.76		
00922	COGNITEX® w/PREGNENOLONE &	74.00	55.50		
	NEUROPROTECTION COMPLEX - 90 softgels				
	Buy 4 bottles, price each	66.60	49.95		
	Buy 12 bottles, price each	64.00	48.00		
00921	COGNITEX® w/o PREGNENOLONE	72.00	54.00		
	w/NEUROPROTECTION COMPLEX - 90 softgels				
	Buy 4 bottles, price each	64.00	48.00		
	Buy 12 bottles, price each	62.00	46.50		
01421	COGNITEX® BASICS - 60 softgels	38.00	28.50		
0.12.	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
00110	COMPLETE B-COMPLEX - 180 caps	21.50	16.13		
00110	Buy 4 bottles, price each	18.00	13.50		
01.505					
01595	COMPREHENSIVE NUTRIENT PACK - 30-day supply	189.00	141.75		
	Buy 4 bottles, price each	171.00	128.25		_
00119	copper capsules - 2 mg, 100 caps	9.91	7.43		
	Buy 4 bottles, price each	8.96	6.72		_
00949	COQ10™ w/ d-LIMONENE (SUPER ABSORBABLE) - 50 mg, 60 softgels	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
	Buy 10 bottles, price each	20.00	15.00		
00950	COQ10™ w/ ø-LIMONENE (SUPER ABSORBABLE) - 100 mg, 100 softgels	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
	Buy 10 bottles, price each	56.00	42.00		
01226	COQ10 (SUPER UBIQUINOL) - 100 mg, 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
	Buy 10 bottles, price each	48.00	36.00		
01426	COQ10 W/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-100 mg, 60 softgels		46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01425	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-50 mg, 100 softgels	58.00	43.50		
∪ 1-T∠U					
	Buy 4 bottles, price each	53.00	39.75		
04.407	Buy 10 bottles, price each	50.00	37.50		
01427	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-50 mg, 30 softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		

No.		Retail Each	Member Each	Qty	Total
	C CONTINUED				
01431	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-200 mg, 30 softgels	\$62.00	\$46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01397	CORDYCEPS CS-4™ - 60 veg. caps	29.99	22.49		
01053	CORIOLUS SUPER STRENGTH - 600 mg, 150 veg. caps	99.95	74.96		
30140	COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS - 33 oz	49.00	36.75		
	Buy 2 bottles, price each	42.00	31.50		
30139	COSMESIS AMBER SELF MICRODERMABRASION - 2 0Z	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
30118	COSMESIS ANTI-AGING MASK - 2 0Z	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
30134	COSMESIS ANTI-GLYCATION SERUM - 1 OZ	33.00	24.75		
	W/BLUEBERRY & POMEGRANATE EXTRACTS				
	Buy 2 bottles, price each	31.35	23.51		
30133	COSMESIS ANTIOXIDANT FACIAL MIST - 2 OZ	32.00	24.00		
	Buy 2 bottles, price each	30.40	22.80		
30127	COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM - 2 OZ	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		
30128	COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB - 2 OZ	59.00	44.25		
	Buy 2 jars, price each	51.92	38.94		
30117	COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM - 2 OZ	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
30121	COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB - 2 OZ	58.00	43.50		
,0,2,	Buy 2 jars, price each	51.04	38.28		
30105	COSMESIS ANTI-REDNESS & BLEMISH LOTION - 1 OZ	74.50	55.88		
70100	Buy 2 bottles, price each	65.56	49.17		
30144	COSMESIS BROCCOLI SPROUT CREAM - 1 OZ	46.00	34.50		
70177	Buy 2 jars, price each	39.00	29.25		
30120	COSMESIS CORRECTIVE CLEARING MASK - 2 0Z	64.50	48.38		
00120	Buy 2 jars, price each	56.76	42.57		
30141			_		
00141	COSMESIS DNA REPAIR CREAM - 1 oz jar	49.00	36.75 31.50		
30108	Buy 2 jars, price each	42.00 74.95	56.21		
00100	COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 0Z	65.95	49.46		
30123	Buy 2 bottles, price each	69.50			
00123	COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM - 2 0Z				
00107	Buy 2 jars, price each	61.16	45.87		
30107	COSMESIS FINE LINE-LESS - 1 0Z	74.50	55.88		
20121	Buy 2 bottles, price each COSMESIS HAIR SUPPRESS FORMULA - 4 oz	65.56	49.17		
30131		59.00	44.25 38.94		
00107	Buy 2 bottles, price each	51.92			
30137	COSMESIS HEALING FORMULA ALL-IN-ONE CREAM - 1 0Z	53.00	39.75		
00445	Buy 2 jars, price each	45.43	34.07		
30115	COSMESIS HEALING MASK - 2 0Z	64.50	48.38		
20400	Buy 2 bottles, price each	56.76	42.57		
30102	COSMESIS HEALING VITAMIN K CREAM - 1 0Z	79.50	59.63		
0400	Buy 2 bottles, price each	69.96	52.47		
30109	COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 0Z	58.00	43.50		
.04 : -	Buy 2 bottles, price each	51.04	38.28		<u> </u>
30110		58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
30138	COSMESIS HYDRATING ANTI-OXIDANT FACE MIST - 4 0Z	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50	Щ	
30103	COSMESIS LIFTING & TIGHTENING COMPLEX - 1 0Z	74.50	55.88		
	Buy 2 tubes, price each	65.56	49.17		
	SUB-TOTAL OF COLUMN 5				

		,			
No.		Retail Each	Member Each	Qty	Total
80135	COSMESIS MELATONIN CREAM - 1 0Z	\$33.00	\$24.75		
	Buy 2 jars, price each	27.10	20.33		
80114	COSMESIS MILD FACIAL CLEANSER - 8 0Z	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80122	COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM - 2 oz	64.00	48.00		_
00122	Buy 2 jars, price each	56.32	42.24		
80111		74.00	55.50		
00111	COSMESIS PIGMENT CORRECTING CREAM - 1/2 0Z				
00100	Buy 2 bottles, price each	65.12	48.84		_
80106	COSMESIS REJUVENATING SERUM - 1 OZ	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80142	COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 0Z	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
80112	COSMESIS SKIN LIGHTENING SERUM - 1/2 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80130	COSMESIS SKIN STEM CELL SERUM - 1 OZ	74.00	55.50		
	Buy 2 bottles, price each	69.00	51.75		
80143	COSMESIS STEM CELL CREAM W/ALPINE ROSE - 1 oz jar	66.00	49.50		
	Buy 2 jars, price each	58.00	43.50		
80116	COSMESIS ULTRA LIP PLUMPER - 1/3 oz	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	COSMESIS ULTRA WRINKLE RELAXER - 1 0Z	89.95	67.46		
00.0.	Buy 2 bottles, price each	79.76	59.82		
80113	COSMESIS UNDER EYE REFINING SERUM - 1/2 OZ	74.50	55.88		
00113					
00104	Buy 2 bottles, price each	65.56	49.17		
80104	COSMESIS UNDER EYE RESCUE CREAM - 1/2 OZ	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80129	COSMESIS VITAMIN C SERUM - 1 0Z	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80136	COSMESIS VITAMIN D LOTION - 4 0Z	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25		
80145	COSMESIS VITAMIN E-ESSENTIAL CREAM - 1 0Z	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
00862	CRAN-MAX® - 500 mg, 60 veg. caps	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
01424	CRAN-MAX® with UTIROSE™ (OPTIMIZED) - 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00609	CREATINE CAPSULES - 120 caps	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
00610	CREATINE POWDER - 500 grams	29.00	21.75		
00010	Buy 4 bottles, price each	26.63	19.97		
01096	CREATINE WHEY GLUTAMINE POWDER - 1000 grams (vanilla)	54.00	40.50		
01030	Buy 4 bottles, price each	52.00	39.00		
01530			8.96		
01000	CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95			
04504	Buy 6 bottles, price each	11.25	8.44		
01531	(SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01429	CR MIMETIC LONGEVITY FORMULA - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
33840	CRWAY GREAT GLUCOSE CONTROL CD	98.00	82.00		
CRWAY	CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE	195.00	195.00		
00407	CURCUMIN® (SUPER BIO) - 400 mg, 60 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	D				
01376	DAILY GINGER® - 90 veg. caps	\$21.95	\$16.46		
01313	DERMAWHEY- 400 mg, 60 caps	65.00	48.75		
	Buy 4 bottles, price each	59.00	44.25		
	SUB-TOTAL OF COLUMN 6				
	SOD-TOTAL OF COLUMN 6				

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Tota
00995	DHA 240 - 240 mg, 60 softgels	\$19.00	\$14.25		
	Buy 4 bottles, price each	17.00	12.75		
00658	7-KETO® DHEA METABOLITE - 25 mg, 100 caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01479	7-KETO® DHEA METABOLITE - 100 mg, 60 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00607	DHEA - 25 mg, 100 tablets (dissolve in mouth)	14.00	10.50		
	Buy 4 bottles, price each	11.75	8.81		
01478	DHEA COMPLETE - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	43.20	32.40		
00335	DHEA - 25 mg, 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
00454	DHEA - 15 mg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
00882	DHEA - 50 mg, 60 caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
00883	DHEA - 100 mg, 60 caps	22.50	16.88		
	Buy 4 bottles, price each	19.00	14.25		
01358	DIGEST RC - 30 tablets	19.95	14.96		Г
	Buy 4 boxes, price each	17.00	12.75		
01272	DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps	18.95	14.21		Г
	Buy 4 bottles, price each	16.00	12.00		
00034	D,L-PHENYLALANINE CAPSULES - 500 mg, 100 caps	18.75	14.06		
	Buy 4 bottles, price each	16.00	12.00		
00257	DMAE BITARTRATE - 150 mg, 200 caps	14.00	10.50		
	Buy 4 bottles, price each	10.50	7.88		
00059	DMG - 125 mg, 60 tablets	22.80	17.10		
	Buy 4 boxes, price each	21.00	15.75		
01570	DNA PROTECTION FORMULA - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	32.00	24.00		
00544	DOG MIX - 100 grams powder	19.50	14.63		
	Buy 4 jars, price each	16.00	12.00		
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 OZ	39.95	29.96		
	Buy 4 bottles, price each	32.00	24.00		
00320	DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 OZ	24.95	18.71		
	Buy 4 bottles, price each	22.00	16.50		
00899	DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 oz	39.95	29.96		
	Buy 4 jars, price each	38.95	29.21		
00240	DUAL-C - 90 caps	12.00	9.00		
-	Buy 4 bottles, price each	10.50	7.88		
	E				_
00388	ECHINACEA EXTRACT - 250 mg, 60 caps	\$14.35	\$10.76		
	Buy 4 bottles, price each	12.50	9.38		
01395	EDTA - 500 mg, 60 caps	9.98	7.49		
01321	ELASTIN & COLLAGEN BODY FIRMING LOTION - 8 fl. oz.	10.00	7.50		Н
01498	ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels	56.00	42.00		Т
	Buy 4 bottles, price each	52.00	39.00		
00997	ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
00625	EPA/DHA (MEGA) - 120 softgels	19.95	14.96		
	Buy 4 bottles, price each	18.00	13.50		
01042	EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs	20.00	15.00		Н
01072	Buy 4 bottles, price each	18.00	13.50		
	day it boulds, priod babii	10.00	10.00		\vdash
71514	EVE DRESSING STIDDORT W/MIDTOCENOT® 30 year cans	38 UU	28 50		
01514	EYE PRESSURE SUPPORT w/MIRTOGENOL® - 30 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		

No.		Retail Each	Member Each	Qty	Tota
	F				
01054	FACE MASTER® PLATINUM	\$199.00	\$199.00		
0965	FAST-ACTING JOINT FORMULA - 30 caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
20053	FEM DOPHILUS® - 30 caps	25.95	19.46		Г
20055	FEM DOPHILUS® - 60 caps	39.95	29.96		
1064	FEMMENESSENCE MACAPAUSE® - 120 veg. caps	34.99	26.24		Г
)1311	FERNBLOCK® w/SENDARA™ (ENHANCED) - 30 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	35.00	26.25		
0229	FIBER FOOD CAPS - 200 caps	15.00	11.25		Т
	Buy 4 bottles, price each	12.50	9.38		
	Buy 10 bottles, price each	11.90	8.93		
0718	FIBRINOGEN RESIST™ - 30 veg. caps	49.00	36.75		\vdash
0110		44.00	33.00		
0072	Buy 4 bottles, price each	9.95	7.46	_	\vdash
0873	FLAXSEED POWDER (HI-LIGNAN® NUTRI-FLAX®) - 16 oz powder			_	\vdash
11384	FLORADIX® IRON & HERBS - 17 fl. oz	43.99	35.19	_	H
1382	FLORAVITAL® IRON & HERBS - 17 fl. oz	43.99	35.19	_	L
11212	FLUSH + BE FIT - 2- week cleanse for women	29.99	22.49		<u> </u>
11439		28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
0347	FOLIC ACID + B12 CAPSULES - 200 caps	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
0300	FORSKOLIN - 10 mg, 60 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
01513	FUCOIDAN w/MARITECH® 926 (OPTIMIZED) - 60 veg. caps	36.00	27.00		Г
	Buy 4 bottles, price each	33.00	24.75		
0993	FUCOXANTHIN-SLIM™ - 90 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.00	29.25		
	G				
0127	GABA POWDER - 100 grams	\$23.75	\$17.81		
	Buy 4 bottles, price each	22.50	16.88		
0559	GAMMA E TOCOPHEROL/TOCOTRIENOLS - 60 softgels	42.00	31.50		Г
	Buy 4 bottles, price each	37.00	27.75		
0759	GAMMA E TOCOPHEROL W/SESAME LIGNANS - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
1394	(OPTIMIZED) GARLIC - 200 veg. caps	24.95	18.71		
	Buy 4 bottles, price each	21.00	15.75		
1378	GARLIC FORCE™ - 30 softgels	34.95	26.21		Г
0117	GELATIN CAPSULES - 1000 empty caps size "00"	19.00	14.25		
	Buy 4 bags, price each	18.00	13.50		
1301	GH PITUITARY SUPPORT DAY FORMULA - 120 vegetarian tabs	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
1302	GH PITUITARY SUPPORT NIGHT FORMULA - 120 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.50	16.88		
1228	GINGER FORCE - 60 softgels	29.95	22.46		
0778	GINKGO BILOBA CERTIFIED EXTRACT™ - 120 mg, 365 caps	46.00	34.50		
	Buy 2 bottles, price each	43.50	32.63		
0504	GINKGO EXTRACT (SUPER) - 120 mg, 100 caps	29.00	21.75		
	Buy 4 bottles, price each	26.50	19.88		
1032	(PANAX RED) GINSENG - 60 veg. caps	29.99	22.49		
0756	GLA WITH SESAME LIGNANS (MEGA) - 60 softgels	19.50	14.63		
	Buy 4 bottles, price each	18.00	13.50		
0345	(L) GLUTAMINE CAPSULES - 500 mg, 100 caps	14.95	11.21		Г
	Buy 4 bottles, price each	13.50	10.13		
0141	(L)-GLUTAMINE POWDER - 100 grams	19.00	14.25		Г
	Buy 4 bottles, price each	16.88	12.66		
	SUB-TOTAL OF COLUMN 8				L

SUB-TOTAL OF COLUMN 7

00522 00512 00113	GLUCOSAMINE/CHONDROITIN CAPSULES - 100 caps Buy 4 bottles, price each	\$38.00	\$28.50		
	· · · · · · · · · · · · · · · · · · ·		Ψ20.00		
	· · · · · · · · · · · · · · · · · · ·	32.00	24.00		
00113	GLUCOFIT™ - 100 softgels	28.00	21.00		
00113	Buy 4 bottles, price each	25.00	18.75		
	GLUTATHIONE, CYSTEINE & C - 750 mg, 100 caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00314	L-GLUTATHIONE (MEGA) - 250 mg, 60 caps	39.64	29.73		
	Buy 4 bottles, price each	35.68	26.76		
00795	GLYCINE - 1000 mg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	10.80	8.10		
00128	GLYCINE POWDER - 300 grams	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01091	GRAPE EXTRACT w/RESVERATROL (WHOLE) - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01411	GRAPE SEED EXTRACT w/RESVERATROL & PTEROSTILBENE - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01604	GREEN COFFEE EXTRACT COFFEEGENIC™ - 200 mg, 90 veg. caps	25.00	18.75	П	
	Buy 4 bottles, price each	22.00	16.50		
01620	GREEN COFFEE EXTRACT COFFEEGENIC™ - 400 mg, 90 veg. caps	38.00	28.50		
-	Buy 4 bottles, price each	34.00	25.50		
01607	GREEN COFFEE EXTRACT COFFEEGENIC™ - 90 veg. caps w/glucose control complex	58.00	43.50		
	Buy 4 bottles, price each	52.00	39.00		
00953	GREEN TEA EXTRACT (MEGA) - lightly caffeinated - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.50	19.88		
00954	GREEN TEA EXTRACT (MEGA) - decaffeinated - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.50	19.88		
)1606	GREEN TEA W/COFFEEGENIC™ GREEN COFFEE EXTRACT (MEGA) 120 veg. caps, low caffeine	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
01605	GREEN TEA W/COFFEEGENIC™ GREEN COFFEE EXTRACT (MEGA) 120 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Н				
01074	5 HTP - 100 mg, 60 caps	\$27.95	\$20.96		
00010	HAIR CONDITIONER - 16 oz	6.00	4.50		
	Buy 4 bottles, price each	4.50	3.38		
00230	HCA - 90 caps	18.00	13.50		Г
	Buy 4 bottles, price each	15.50	11.63		
)1629	HEAROS™ EAR PLUGS - 1 pack - regular size	14.00	10.50		
01635	HEAROS™ EAR PLUGS - 1 pack - small size	14.00	10.50		
01393	HEPATOPRO - 900 mg, 60 softgels	50.00	37.50		
,,,,,,	Buy 4 bottles, price each	46.00	34.50		
01433	HOLY BASIL - 60 softgel caps	34.95	26.21		
)1434	HOLY BASIL - 120 softgel caps	54.95	41.21	Н	
01435	HOMOCYSTEINE RESIST - 100 caps	24.00	18.00	\vdash	
, 1 700	Buy 4 bottles, price each	21.60	16.20		
01527	HUPERZINE A - 200 mcq, 60 veg caps	34.00	25.50	\vdash	
, 1061	Buy 4 bottles, price each	30.00	22.50		
00661	HYDRODERM® - 1 oz	79.95	59.96	Н	
ו סטטר					
	Buy 2 bottles, price each	65.33	49.00		_
11000	:00® IMPERIALINE 500 - 140 groups sounder	#40.00	\$40.00		
1060	i26® HYPERIMMUNE EGG - 140 grams powder	\$49.99	\$42.00	H	<u> </u>
1319	i26® HYPERIMMUNE EGG - 135 capsules	31.99	25.59	H	<u> </u>
11318	i26® HYPERIMMUNE EGG CHEWABLES - (vanilla) 45 tablets	31.99	25.59	\vdash	
01065	IDEAL BOWEL SUPPORT 299V - 30 veg. caps	21.95	16.46		

No.		Retail Each	Member Each	Qty	Tota
00955	IMMUNE PROTECT W/PARACTIN® - 30 veg. caps	\$29.50	\$22.13		
	Buy 4 bottles, price each	26.55	19.91		
01049	INNERPOWER™ - 555 grams powder	42.00	31.50		
00155	INOSINE - 500 mg, 60 caps	22.95	17.21		
	Buy 4 bottles, price each	21.00	15.75		
00410	INOSITOL CAPSULES - 1000 mg, 360 caps	48.00	36.00		
	Buy 4 bottles, price each	43.75	32.81		
00108	INOSITOL POWDER - 100 grams	18.00	13.50		
	Buy 4 bottles, price each	16.88	12.66		
)1292	INTEGRA-LEAN® IRVINGIA - 150 mg, 60 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
1002	IODORAL® - 180 tabs	50.00	37.50		
0563	IRON PROTEIN PLUS - 300 mg, 100 caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
)1492	IRVINGIA W/PHASE 3™ - 120 veg. caps CALORIE CONTROL COMPLEX (OPTIMIZED)	56.00	42.00		
	Buy 4 bottles, price each	48.00	36.00		
	J, K				
0056	JARRO-DOPHILUS EPS™ - 60 veg. caps	\$21.95	\$16.46		
1387	JARRO-DOPHILUS ORAL PROBIOTIC GUM - Pom-Berry flavor, 8 pieces	4.95	3.71		
1388	JARRO-DOPHILUS ORAL PROBIOTIC LOZENGE - Pom-Berry flavor, 8 pieces	4.95	3.71		
1224	K w/ADVANCED K2 COMPLEX (SUPER) - 90 softgels	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
1600	KRILL HEALTHY JOINT FORMULA - 30 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
1050	(NKO) KRILL OIL - 60 softgels	33.95	25.46		
00316	KYOLIC® GARLIC FORMULA 102 - 200 caps	23.95	17.96		
	Buy 4 bottles, price each	20.50	15.38		
0214	KYOLIC® GARLIC FORMULA 105 - 200 caps	22.95	17.21		
,0211	Buy 4 bottles, price each	18.25	13.69		
0789	KYOLIC® RESERVE - 600 mg, 120 caps	24.75	18.56		
0103		-			
	Buy 4 bottles, price each	21.45	16.09		
0510	L	* 44.00	400.00		
0513	LACTOFERRIN (APOLACTOFERRIN) CAPS - 60 caps	\$44.00	\$33.00		
	Buy 4 bottles, price each	40.00	30.00		
0017	LAVILIN UNDERARM DEODORANT - 12.5 grams cream	16.99	12.74		
	Buy 4 jars, price each	15.75	11.81		
10020	LECITHIN - 16 oz. granules	15.00	11.25		
	Buy 4 jars, price each	12.50	9.38		
11655	LIFE EXTENSION MIX™ - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
1657	LIFE EXTENSION MIX™ W/EXTRA NIACIN - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
11654	LIFE EXTENSION MIX™ - 490 caps	110.00	82.50		
0.00.	Buy 4 bottles, price each	98.00	73.50		
	Buy 10 bottles, price each	85.00	63.75		
		98.00	73.50		
11656	LIFE EXTENSION MIX™ POWDER - 14.81 oz				
1656	LIFE EXTENSION MIX™ POWDER - 14.81 oz Buy 4 bottles, price each	86.00	64.50		
11656		86.00 72.00	64.50 54.00		
	Buy 4 bottles, price each				
01656	Buy 4 bottles, price each Buy 10 bottles, price each	72.00	54.00		
	Buy 4 bottles, price each Buy 10 bottles, price each LIFE EXTENSION MIX™ - 315 tablets w/o copper	72.00 98.00	54.00 73.50		

Buyers Club Order Form

		Retail Each	Member Each	Qty	Total
01667	LIFE EXTENSION MIX™ W/EXTRA NIACIN 315 tablets w/o copper	\$98.00	\$73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
01664	LIFE EXTENSION MIX™ - 490 caps w/o copper	110.00	82.50		
	Buy 4 bottles, price each	98.00	73.50		
	Buy 10 bottles, price each	85.00	63.75		
01666	LIFE EXTENSION MIX™ POWDER - 14.81 oz w/o copper	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	72.00	54.00		
00263	LIFE FLORA™ - 300 mg, 120 caps	20.50	15.38		
	Buy 4 bottles, price each	18.75	14.06		
01377	LIFESHIELD® BREATHE™ - 60 veg. caps	34.95	26.21		
01349	LIFESHIELD® CORDYCEPS - 60 veg. caps	34.95	26.21		
01314	LIFESHIELD® IMMUNITY™ - 60 veg. caps	39.95	29.96		
	* '				
01339	LIFESHIELD® REISHI™ - 60 veg. caps	34.95	26.21		
01608	LIVER EFFICIENCY FORMULA - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01227	LIVER FORCE - 30 veg. caps	34.95	26.21		
01639	5-LOX INHIBITOR W/APRESFLEX™ – 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01013	L-LYSINE - 620 mg, 100 caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
00129	L-LYSINE POWDER - 300 grams	16.00	12.00		
	Buy 4 bottles, price each	13.75	10.31		
01470	LURALEAN® CAPS SPECIAL PROPOLMANNAN	28.00	21.00		
	PARTICLE SIZE - 120 veg. caps				
	Buy 4 bottles, price each	25.00	18.75		
00455	LYCOPENE EXTRACT (MEGA) - 15 mg, 90 softgels	35.00	26.25		
	Buy 4 bottles, price each	30.00	22.50		
	M				
01369	MAGNESIUM CAPS - 500 mg, 100 veg. caps	\$10.00	\$7.50		
	Buy 4 bottles, price each	9.00	6.75		
00502	MAGNESIUM CITRATE - 160 mg, 100 caps	9.00	6.75		
	Buy 4 bottles, price each	7.50	5.63		
00704	MAITAKE™ SX-FRACTION - 90 veg. tablets	49.95	37.46		
00547	MELATONIN - 300 mcg, 100 caps	5.75	4.31		
	Buy 4 bottles, price each	5.00	3.75		
01083	MELATONIN - 500 mcg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00329	MELATONIN - 1 mg, 60 caps	5.00	3.75		
	Buy 4 bottles, price each	4.63	3.47		
00330	MELATONIN - 3 mg, 60 caps	8.00	6.00		
20000	Buy 4 bottles, price each	6.88	5.16		
01086	MELATONIN - 3 mg, 60 time-release veg. caps	10.50	7.88		
01000	Buy 4 bottles, price each	9.38	7.04		
00331	MELATONIN - 10 mg, 60 caps	28.00	21.00		
UUJJ I		24.00			
	Buy 4 bottles, price each	+	18.00		
იივვვ	MELATONIN - 3 mg, 60 lozenges	8.00	6.00		
00332		6.88	5.16		
	Buy 4 bottles, price each	0.05	4.00		1
	MELATONIN TIME RELEASE - 300 mcg, 100 veg. caps	6.25	4.69		
01087	MELATONIN TIME RELEASE - 300 mcg, 100 veg. caps Buy 4 bottles, price each	5.63	4.22		
00332 01087 01088	MELATONIN TIME RELEASE - 300 mcg, 100 veg. caps Buy 4 bottles, price each MELATONIN TIME RELEASE - 750 mcg, 60 veg. caps	5.63 5.75	4.22 4.31		
01087	MELATONIN TIME RELEASE - 300 mcg, 100 veg. caps Buy 4 bottles, price each	5.63	4.22		

No.		Retail Each	Member Each	Qty	Tota
01009	MEMORY UPGRADE™ - 600 grams powder	\$26.95	\$20.21		
01536	METHYLCOBALAMIN - 1 mg, 60 lozenges (vanilla)	9.95	7.46		
	Buy 4 bottles, price each	8.00	6.00		
01537	METHYLCOBALAMIN - 5 mg, 60 lozenges (vanilla)	32.00	24.00		
	Buy 4 bottles, price each	25.00	18.75		
	Buy 10 bottles, price each	23.00	17.25		
00709	MIGRA-EEZE™ (BUTTERBUR) - 60 softgels	29.50	22.13		
	Buy 4 bottles, price each	26.33	19.75		
01522	MILK THISTLE (CERTIFIED EUROPEAN) - 750 mg, 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
01517	MILK THISTLE (CERTIFIED EUROPEAN) - 120 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		
00623	MINERAL FORMULA FOR MEN - 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
	Buy 12 bottles, price each	10.83	8.13		
00624	MINERAL FORMULA FOR WOMEN - 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
	Buy 12 bottles, price each	10.83	8.13		
01315	MIRAFORTE w/STANDARDIZED LIGNANS (SUPER) - 120 caps	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
01569	MITOCHONDRIAL BASICS w/BIOPQQ™ - 30 caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
01568	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ™ - 120 caps	94.00	70.50		
	Buy 4 bottles, price each	84.00	63.00		
00803	MIST ORAL III w/COQ10 - 2 fl oz	28.00	21.00		
	Buy 4 bottles, price each	25.33	19.00		
00065	MK-7 - 90 mcg, 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01279	MOUTHWASH W/POMEGRANATE - 16 oz	18.50	13.88		
	Buy 4 bottles, price each	17.00	12.75		
00451	MSM (METHYLSULFONYLMETHANE) - 1000 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	11.95	8.96		
	N				
00215	N-ACETYL-L-CYSTEINE - 600 mg, 60 caps	\$14.00	\$10.50		
	Buy 4 bottles, price each	13.50	10.13		
00066	NATTOKINASE - 60 softgels	24.98	18.74		
00891	NATURAL APPETITE CONTROL - 90 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.20	18.90		
00984	NATURAL BP MANAGEMENT - 60 tablets	42.00	31.50		
	Buy 4 bottles, price each	37.80	28.35		
00913	NATURAL ESOPHAGUARD - 10 softgels	19.95	14.96		
	Buy 2 boxes, price each	19.00	14.25		
00712	NATURAL ESTROGEN w/POMEGRANATE EXTRACT - 60 caplets	38.00	28.50		
-0116	Buy 4 bottles, price each	33.00	24.75		
01221	•	28.00	21.00	\vdash	
01221	NATURAL FEMALE SUPPORT - 30 veg. caps	_			
N1/I71	Buy 4 bottles, price each	24.00	18.00 29.25	\vdash	
01471	NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps	39.00			
0000-	Buy 4 bottles, price each	36.00	27.00	<u> </u>	
00698	NATURAL RELIEF 1222™ - 2 OZ	28.00	21.00		
	Buy 4 tubes, price each	25.00	18.75		
		1 40 00	04.50		l
01627	NATURAL SEX FOR WOMEN ® (ADVANCED) - 60 veg. caps	42.00	31.50		

No.		Retail Each	Member Each	Qty	Total
	N CONTINUED				
1626	NATURAL SEX FOR WOMEN * 50+ (ADVANCED) - 90 veg. caps	\$59.00	\$44.25		
	Buy 4 bottles, price each	45.33	34.00		
1084	NATURAL SLEEP® - 3 mg, 60 veg. caps	12.99	9.74		
	Buy 4 bottles, price each	10.00	7.50		
1507	NATURAL SLEEP® (ENHANCED) W/ MELATONIN - 30 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
1511	NATURAL SLEEP® (ENHANCED) W/O MELATONIN - 30 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
1085	NATURAL SLEEP MELATONIN® - 5 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
0987	NATURAL STRESS RELIEF - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
1603	NEURO-MAG™ MAGNESIUM L-THREONATE - 90 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
1602	NEURO-MAG™ L-THREONATE W/CALCIUM & VITAMIN D	40.00	30.00		
	205 grams - Lemon flavor				
	Buy 4 bottles, price each	36.00	27.00		
0373	NO-FLUSH NIACIN - 800 mg, 100 caps	19.00	14.25		
	Buy 4 bottles, price each	17.00	12.75		
1035	NUTRIM - 225 grams powder	25.95	19.46		
	0	400.00	410.50		
1623	OLIVE LEAF VASCULAR SUPPORT - 500 mg, 60 veg. caps	\$22.00	\$16.50		
1 100	Buy 4 bottles, price each	20.00	15.00		
1483	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 60 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
1482	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 120 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
1484	OMEGA 3 EPA/DHA W/SESAME LIGNANS & - 120 enteric coated softgels OLIVE FRUIT EXTRACT (SUPER)	34.00	25.50		
	Buy 4 bottles, price each	31.00	23.25		
	Buy 10 bottles, price each	28.00	21.00		
1619	OMEGA 3 EPA/DHA W/SESAME LIGNANS & - 240 softgels	32.00	24.00		
	OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL)				
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
1601	ONE-PER-DAY - 60 veg. tablets	22.00	16.50		
1000	Buy 4 bottles, price each	20.00	15.00		
1328	ONLY TRACE MINERALS - 90 caps	15.00	11.25		
0017	Buy 4 bottles, price each	12.50	9.38		
0915	OPTIZINC* - 30 mg, 90 veg. caps	5.95	4.46		
1040	Buy 4 bottles, price each	5.00	3.75		
1348	OREGANOFORCE™ - 30 softgels	34.95	26.21		
1070	ORGANIC TOTAL BODY CLEANSE™ - 14-day supply	34.99	26.24		
0107	PABA CAPS - 500 mg, 100 caps	\$15.42	\$11.57		
0101	Buy 4 bottles, price each	13.59	10.19		
0073	PANCREATIN - 500 mg, 50 caps	13.59	9.92		
JU1 U	Buy 4 bottles, price each	12.12	9.09		
1323	PEAK ATP® WITH GLYCOCARN® - 60 veg. caps	59.00	44.25		
.020	Buy 4 bottles, price each	56.00	42.00		
	SUB-TOTAL OF COLUMN 13				

		Retail Each	Member Each	Qty	Total
00342	PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder	\$99.95	\$74.96		
	Buy 4 jars, price each	95.70	71.78		
01080	PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps	69.95	52.46		
00673	PGX™ SOLUBLE FIBER BLEND (WELLBETX®) -180 caps	34.95	26.21		
00865	PHARMAGABA™ - 60 chewable tablets	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
00368	PHOSPHATIDYLSERINE CAPS - 100 mg, 100 caps	54.00	40.50		
	Buy 4 bottles, price each	48.00	36.00		
01390	PHOSPHOMEGA - 60 softgels	39.95	26.96		
00561	POLICOSANOL - 10 mg, 60 tablets	24.00	18.00		
	Buy 6 bottles, price each	18.00	13.50		
01423	POMEGRANATE™ (FULL-SPECTRUM) - 30 softgels	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
00956	POMEGRANATE EXTRACT - 30 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.55	13.16		
00957	POMEGRANATE JUICE CONCENTRATE - 16 oz. liquid	25.95	19.46		
	Buy 4 bottles, price each	24.00	18.00		
00577	POTASSIUM IODIDE - 1 box, 14 tablets	6.95	5.21		
	Buy 4 boxes, price each	5.25	3.94		
01500	PQQ CAPS W/BIOPQQ™ - 10 mg, 30 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
00302	PREGNENOLONE - 50 mg, 100 caps	24.00	18.00		
	Buy 4 bottles, price each	19.00	14.25		
00700	PREGNENOLONE - 100 mg, 100 caps	26.00	19.50		
	Buy 4 bottles, price each	22.50	16.88		
**01373	PRELOX® NATURAL SEX FOR MEN® - 60 tablets	52.00	39.00		
0.0.0	Buy 4 bottles, price each	48.00	36.00		
00571	PRIMAL DEFENSE™ - 90 caplets	49.95	37.46		
00071	Buy 4 bottles, price each	48.50	36.38		
01329	PROBIOTIC ALL-FLORA® - 60 veg. caps	25.95	19.46		
01326	PROBIOTIC ANTI-AGING™ - 90 veg. caps	30.95	23.21		
01324	PROBIOTIC CLEANSE™ - 90 veg. caps	29.95	22.46		
01324	PROBIOTIC COLON™ - 90 veg. caps	30.95	_		
00525	PROBOOST THYMIC PROTEIN A™ - 4 mcg, 30 packets	59.95	44.96	_	
00323	PRO FEM CREAM - 2 fl oz (Progesterone Cream)	32.00	24.00		
00009		29.00	21.75		
01000	Buy 4 bottles, price each			_	
01020	PROGREENS® - 15 stick pack	22.50	16.88	_	
01072	PRO-M INTERNAL DEODORIZER - 500 mg, 100 veg. caps	28.00	21.00		
01605	Buy 4 bottles, price each	25.00	18.75	\vdash	
01695	PROSTATE FORMULA W/APRESFLEX™STAND. LIGNANS (ULTRA NAT) 60 softgels		28.50		
	Buy 4 bottles, price each	35.00	26.25		
04000	Buy 12 bottles, price each	32.00	24.00	_	
01092	PROTEIN - VANILLA - (Enhanced Life Extension) -1000 grams powder	54.00	40.50		
04000	Buy 4 bottles, price each	52.00	39.00	\vdash	
01093	PROTEIN - CHOCOLATE - (Enhanced Life Extension) -1000 grams powder	54.00	40.50		
	Buy 4 bottles, price each	52.00	39.00	_	
01094	PROTEIN - NATURAL - (Enhanced Life Extension) -1000 grams powder	54.00	40.50		
0.105-	Buy 4 bottles, price each	52.00	39.00	\vdash	
01095	PROTEIN - BERRY - (Enhanced Life Extension) -1000 grams powder	54.00	40.50		
	Buy 4 bottles, price each	52.00	39.00		
	PTEROPURE™ - 50 mg Pterostilbene 60 veg. caps	32.00	24.00		
01508		20.00	22.50		
01508	Buy 4 bottles, price each	30.00		-	
	Buy 4 bottles, price each PURE PLANT PROTEIN - Natural Vanilla 450 grams powder	36.00	27.00		
01508 01075					

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01209	PUMPKIN SEED EXTRACT (WATER-SOLUBLE) - 60 veg. caps	\$20.00	\$15.00		
	Buy 4 bottles, price each	18.00	13.50		
01210		22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT-100 mg, 60 veg. caps	64.00	48.00		
	Buy 4 bottles, price each	60.00	45.00		
01217	PYRIDOXAL 5'-PHOSPHATE - 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
	Q, R				
01309	QUERCETIN (OPTIMIZED) - 250 mg, 60 veg. caps	\$18.00	\$13.50		
	Buy 4 bottles, price each	17.00	12.75		
01030	RED YEAST RICE (Bluebonnet) - 600 mg, 60 veg. caps	17.50	13.13		
00979	RED YEAST RICE (Nature's Plus)- 600 mg, 60 veg. caps	23.95	17.96		
00060	RED YEAST RICE EXTENDED RELEASE - 30 veg. tablets	21.50	16.13		
00605	REGIMINT - 60 enteric-coated caps	19.95	14.96		
	Buy 4 bottles, price each	18.67	14.00		
01448	REJUVENEX® BODY LOTION - 6 OZ	24.00	18.00		
01110	Buy 4 tubes, price each	19.80	14.85		
	Buy 8 tubes, price each	17.00	12.75		
00918		65.00	48.75		
	Buy 2 bottles, price each	60.00	45.00		
	Buy 4 bottles, price each	55.00	41.25		
	Buy 8 bottles, price each	49.91	37.43		
01621	REJUVENEX® FACTOR FIRMING SERUM - 1.7 oz	65.00	48.75		
01021	Buy 2 bottles, price each	60.00	45.00		
	Buy 4 bottles, price each	55.00	41.25		
	Buy 8 bottles, price each	49.91	37.43		
01220		52.00	39.00		
	Buy 2 jars, price each	48.00	36.00		
	Buy 4 jars, price each	44.00	33.00		
	Buy 8 jars, price each	39.93			
00676	REJUVENIGHT® (ULTRA) - 2 OZ	39.95			
000.0	Buy 4 jars, price each	36.00			
00706	REJUVENIGHT® w/PROGESTERONE (ULTRA) - 2 OZ	42.00	31.50		
00700	Buy 4 jars, price each	38.00	28.50		
01413		24.00	18.00		
01413	RESVERATROL W/PTEROSTILBENE - 20 mg, 60 veg. caps	22.00			
01.410	Buy 4 bottles, price each		16.50		
01410	RESVERATROL W/PTEROSTILBENE - 100 mg, 60 veg. caps	36.00	27.00		
04.400	Buy 4 bottles, price each	32.00	24.00		
01430	RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED) - 250 mg, 60 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	41.33	31.00		
00889	RHODIOLA EXTRACT - 250 mg, 60 veg. caps	11.75	8.81		
	Buy 4 bottles, price each	10.58	7.94		
00972	(D) RIBOSE POWDER - 150 grams	27.50	20.63		
	Buy 4 jars, price each	24.75	18.56		
01473	(D) RIBOSE TABLETS - 100 veg. tabs	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
01609	RICH REWARDS BREAKFAST GROUND COFFEE - 12 oz. baq	13.00	9.75		
01610	RICH REWARDS DECAFFEINATED ROAST GROUND COFFEE -12 oz. bag		10.50		
01208	R-LIPOIC ACID (SUPER) - 300 mg, 60 veg. caps	49.00	36.75		
01200	Buy 4 bottles, price each	45.00	33.75		
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00070	RNA CAPSULES - 500 mg, 100 caps	17.95	13.46		
000:-	Buy 4 bottles, price each	16.16	12.12		<u> </u>
00917	ROSMARINIC ACID EXTRACT - 60 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	53.00	39.75	L	
	SUB-TOTAL OF COLUMN 15				

01067 \$ 01067	SACCHAROMYCES BOULARDII+MOS - 90 veg. caps SAFFRON w/SATIEREAL (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each SAMBU® GUARD - 175 ml SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle Buy 4 bottles, price each	\$21.95 36.00 32.00 17.79 16.00 14.00 36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	\$16.46 27.00 24.00 14.23 12.00 10.50 27.00 24.00 21.00 18.00 49.50 45.00 6.00		
01432	SAFFRON w/SATIEREAL (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each SAMBU® GUARD - 175 ml SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SEA-IODINE™ - 2 oz dropper bottle	36.00 32.00 17.79 16.00 14.00 36.00 28.00 24.00 66.00 60.00 8.00 7.20	27.00 24.00 14.23 12.00 10.50 27.00 24.00 21.00 18.00 49.50 45.00		
00573 \$ 00358 \$ E 00453 \$ E 00557 \$ E 01055 \$ E 01043 \$ E 000046 \$ E 000046 \$ E 000046	Buy 4 bottles, price each SAMBU® GUARD - 175 ml SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	32.00 17.79 16.00 14.00 36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	24.00 14.23 12.00 10.50 27.00 24.00 21.00 18.00 49.50		
0573 \$ 0358	SAMBU® GUARD - 175 ml SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	17.79 16.00 14.00 36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	14.23 12.00 10.50 27.00 24.00 21.00 18.00 49.50 45.00		
0358	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE** - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	16.00 14.00 36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	12.00 10.50 27.00 24.00 21.00 18.00 49.50 45.00		
0453	Buy 8 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	14.00 36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	10.50 27.00 24.00 21.00 18.00 49.50 45.00		
0453	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	36.00 32.00 28.00 24.00 66.00 60.00 8.00 7.20	27.00 24.00 21.00 18.00 49.50 45.00		
0557 \$ E 1055 \$ E 1043 \$ E 1044 \$ E 104	Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE** - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	32.00 28.00 24.00 66.00 60.00 8.00 7.20	24.00 21.00 18.00 49.50 45.00		
0557 \$ E 1055 \$ E 1043 \$ E 1044 \$ E 104	Buy 4 bottles, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE** - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	28.00 24.00 66.00 60.00 8.00 7.20	21.00 18.00 49.50 45.00		
1055 \$ 1043 \$ 1044 \$ 0046 \$	Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE** - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	24.00 66.00 60.00 8.00 7.20	18.00 49.50 45.00		
1055 \$ 1043 \$ 0046 \$	Buy 6 boxes, price each SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE** - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	66.00 60.00 8.00 7.20	49.50 45.00		
1055 § E 1043 § E 0046 §	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	66.00 60.00 8.00 7.20	49.50 45.00		
1043 \$ 0046 \$	Buy 4 bottles, price each SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	60.00 8.00 7.20	45.00		
1043 s E 0046 s	SEA-IODINE™ - 1000 mcg, 60 veg. caps Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	8.00 7.20	_		
0046 s	Buy 4 bottles, price each SELENIUM - 2 oz dropper bottle	7.20	0.00		\vdash
0046 s	SELENIUM - 2 oz dropper bottle	_	5.40		
E			7.46	_	H
	Buy 4 dotties, price each	9.95	1110		
	A	9.45	7.09	_	H
-	SE-METHYL L-SELENOCYSTEINE - 200 mcg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		_
-	SERRAFLAZYME - 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		L
0011	SHAMP00 - 16 fl oz	6.00	4.50		
E	Buy 4 bottles, price each	4.75	3.56		
0284	SHARK LIVER OIL (NORWEGIAN) - 1000 mg, 30 softgels	18.00	13.50		
E	Buy 4 bottles, price each	16.00	12.00		
0184	SILYMARIN - 100 mg, 50 caps	9.25	6.94		
Е	Buy 4 bottles, price each	8.25	6.19		
1502 s	SKIN RESTORING CERAMIDES w/LIPOWHEAT™ - 30 liquid caps	25.00	18.75		
E	Buy 4 bottles, price each	23.00	17.25		
0961	SODZYME® w/GLISODIN® AND WOLFBERRY - 90 veg. caps	28.00	21.00		
- E	Buy 4 bottles, price each	24.00	18.00		
0657	SOLARSHIELD SUNGLASSES - 1 pair smoke color	12.99	9.74		Т
-	Buy 2 pairs, price each	11.50	8.63		
	SOY EXTRACT (ULTRA) - 150 veg. caps	87.00	65.25		Н
-	Buy 4 bottles, price each	78.00	58.50		
	SOY PROTEIN CONCENTRATE - 16 oz of powder	12.00	9.00	_	\vdash
-	Buy 4 jars, price each	10.63	7.97		
	STABILIUM® 200 - 30 caps	30.00	22.50		\vdash
	STEVIA EXTRACT - 100 packets, 1 gram each	_		\vdash	\vdash
-	1 , 0	9.95	7.46		_
	Buy 4 boxes, price each	9.00	6.75	\vdash	\vdash
-	ST. JOHN'S WORT EXTRACT - 300 mg, 60 veg. caps	10.98	8.24		
	Buy 4 bottles, price each	10.00	7.50	_	L
-	ST. JOHN'S WORT EXTRACT (PLANETARY) - 600 mg, 60 tablets	16.75	12.56		
	Buy 4 bottles, price each	13.85	10.39	_	_
-	STRONTIUM - 750 mg, 90 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50	_	_
-	SUNGLASSES (OVERXCAST POLARIZED) - gray color, large	27.00	20.25		
	Buy 2 pairs, price each	21.00	15.75		_
0748	SUNGLASSES (OVERXCAST POLARIZED)- gray color, medium	27.00	20.25		
E	Buy 2 pairs, price each	21.00	15.75		L
0758	SUPER ABSORBABLE SOY ISOFLAVONES - 60 caps	28.00	21.00		
E	Buy 4 bottles, price each	25.00	18.75		

No.		Retail Each	Member Each	Qty	Tota
	S CONTINUED				
01381	SUPERCRITICAL OMEGA 7™ - 60 softgels caps	\$56.95	\$42.71		
01408	SUPER SAW PALMETTO/NETTLE ROOT W/BETA-SITOSTEROL 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
	Buy 12 bottles, price each	24.00	18.00		
01407	SUPER SAW PALMETTO W/BETA-SITOSTEROL - 30 softgels	15.00	11.25		
	Buy 12 bottles, price each	12.00	9.00		
00578	SUPER SELENIUM COMPLEX - 200 mcg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
	Buy 12 bottles, price each	9.00	6.75		
00674	SYTRINOL™ - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	T				
	TAL • SHI™ COSMETICS • For information please call				
	1-800-544-4440 or visit www.LifeExtension.com				
01062	TART CHERRY - 600 mg, 60 caps	\$18.95	\$14.21		
00199	TAURINE - 1000 mg, 50 caps	8.95	6.71		
	Buy 4 bottles, price each	8.00	6.00		
00133	TAURINE POWDER - 300 grams	20.00	15.00		
00.00	Buy 4 bottles, price each	16.88	12.66		
01304	THEAFLAVIN STANDARDIZED EXTRACT - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00555	(L) THEANINE - 100 mg, 60 caps	24.00	18.00		
30000	Buy 4 bottles, price each	20.50	15.38		
***01038	THERALAC PROBIOTICS - 30 caps	44.95	33.71		
00224	THYMIC IMMUNE FACTORS - 100 caps	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
00668	THYROID FORMULA™ (METABOLIC ADVANTAGE) - 100 caps	21.95	16.46		
00349	TMG POWDER - 50 grams	14.00	10.50		
300-13	Buy 4 bottles, price each	11.00	8.25		
00359	TMG - 500 mg, 180 tablets	18.00	13.50		
30000	Buy 4 bottles, price each	15.50	11.63		
00781	TOCOTRIENOLS WITH SESAME LIGNANS - 60 softgels	38.00	28.50		
30701	Buy 4 bottles, price each	36.00	27.00		
01400	TOCOTRIENOLS (SUPER-ABSORBABLE) - 60 softgels	30.00	22.50		
J1400	Buy 4 bottles, price each	28.00	21.00		
01070	· · · · · · · · · · · · · · · · · · ·				
01278	TOOTHPASTE - 4 oz (Mint)	9.50	7.13		
04074	Buy 4 tubes, price each	8.67	6.50		
01274	TOTAL SUN PROTECTION CREAM W/BETA GLUCAN - 4 OZ	28.00	21.00		
04.400	Buy 4 tubes, price each	25.20	18.90		
01468	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps	24.00	18.00		
01469	Buy 4 bottles, price each TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL -60 veg. caps	22.00 32.00	16.50 24.00		
	Buy 4 bottles, price each	29.60	22.20		
01386	TRUFIBER® - 180 grams	29.95	22.46		
01389	TRUFLORA PROBIOTICS & ENZYMES - 32 veg. caps	39.95	29.96		
01616	TWO-PER-DAY - 60 veg. tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01615	TWO-PER-DAY - 120 veg. tablets	20.00	15.00		
-	Buy 4 bottles, price each	18.00	13.50		
01614	TWO-PER-DAY - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	L-TYROSINE - 500 mg, 100 tablets	12.98	9.74		
,00 <u>2</u> 0	Buy 4 bottles, price each	11.81	8.86		
	SUB-TOTAL OF COLUMN 17				

		Retail Each	Member Each	uly	Total
	U	Eduli	Eduli		
00310	UDO'S OIL 3-6-9 BLEND - 17 fl oz	\$27.79	\$22.23		
00311	UDO'S 3-6-9 OIL BLEND - 180 caps	34.79	27.83		
00322	UDO'S CHOICE® WHOLESOME FAST FOOD - 16 oz bottle	27.99	22.39		
01061	ULTIMATE FLORA ADVANCED IMMUNITY PROBIOTICS - 30 caps	29.99	22.49		
01001	V	20.00	22.40		
00213	VANADYL SULFATE - 7.5 mg, 100 tablets	\$15.00	\$11.25		
	Buy 4 bottles, price each	12.50	9.38		
00252	VELVET DEER ANTLER - 250 mg, 30 caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
00408	VENOTONE - 60 caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01327	VINPOCETINE - 10 mg, 100 tablets	18.00	13.50		
0.02.	Buy 4 bottles, price each	14.00	10.50		
01033	VISION OPTIMIZER - 90 caps	29.95	22.46		
01219	VITAMIN A NUTRISORB - 0.6 fl oz	27.00	20.25		
00091	VITAMIN B1 CAPS - 500 mg, 100 caps	18.73	14.05		
30001	Buy 4 bottles, price each	17.00	12.75		
00093	VITAMIN B2 CAPS - 100 mg, 100 caps	14.32	10.74		
30030	Buy 4 bottles, price each	13.00	9.75		
00096	VITAMIN B3 NIACIN - 1000 mg, 100 caps	12.75	9.56		
00030	Buy 4 bottles, price each	12.73	9.00		
00372	VITAMIN B3 NIACIN - 500 mg, 100 caps	7.65	5.74		
JU31 Z		6.65	4.99		
00000	Buy 4 bottles, price each		7.88		
00098	VITAMIN B5 - 500 mg, 100 caps (Pantothenic Acid)	10.50			
00550	Buy 4 bottles, price each	9.38	7.04	_	
00556	VITAMIN B6 - 250 mg, 100 caps	12.50	9.38		
00001	Buy 4 bottles, price each	11.00	8.25	_	
00361	VITAMIN B12 - 500 mcg, 100 lozenges	8.75	6.56		
24004	Buy 4 bottles, price each	7.25	5.44		
01634	VITAMIN C w/ DIHYDROQUERCETIN - 1000 mg, 60 tablets	10.00	7.50		
20007	Buy 4 bottles, price each	9.00	6.75		
00927	VITAMIN C w/ DIHYDROQUERCETIN - 1000 mg, 250 tablets	25.50	19.13		
	Buy 4 bottles, price each	23.25	17.44	_	
J0084	VITAMIN C (BUFFERED) POWDER - 454.6 grams	23.95			
	Buy 4 bottles, price each	22.00	16.50	_	
00864	VITAMIN D3 - 2000 IU, 1 fl oz	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
00251	VITAMIN D3 - 1000 IU, 250 caps	12.50	9.38		
	Buy 4 bottles, price each	11.25	8.44		
00713	VITAMIN D3 - 5000 IU, 60 caps	11.00	8.25		
	Buy 4 bottles, price each	9.90	7.43		
01418	VITAMIN D3 - 7000 IU, 60 caps	14.00	10.50		
	Buy 4 bottles, price each	12.60	9.45		
01372	VITAMIN D3 w/SEA-IODINE™ - 5000 IU, 60 veg. caps	14.00	10.50		
	Buy 4 bottles, price each	12.50	9.38		
01472	VITAMINS D AND K w/SEA-IODINE™ - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
00063	VITAMIN E (PURE NATURAL) - 400 IU, 100 caps	18.75	14.06		
	Buy 4 bottles, price each	17.25	12.94		
	Buy 10 bottles, price each	15.00	11.25		
01225	VITAMIN K2 (LOW-DOSE) - 45 mcg, 90 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
	, ''				

No.		Retail Each	Member Each	Qty	Total
	Z				
01585	ZEAXANTHIN W/LUTEIN & MESO-ZEAXANTHIN AND C3G (SUPER) - 60 softgels	\$22.00	\$16.50		
	Buy 4 bottles, price each	19.80	14.85		
01586	ZEAXANTHIN W/LUTEIN & MESO-ZEAXANTHIN - 60 softgels PLUS ASTAXANTHIN AND C3G (SUPER)	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
00061	ZINC LOZENGES - 75 lozenges	9.50	7.13		
	Buy 4 bottles, price each	6.75	5.06		
01051	ZYFLAMEND - 120 softgels	60.95	45.71		
01029	ZYFLAMEND EASYCAPS - 180 softgels	31.95	23.96		

SUB-TOTAL OF COLUMN 19

- * These products are not 25% off retail price.
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- ***Due to license restrictions, this product is not for sale to customers outside of the USA.
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While there is no "cure" for the natural aging process, there's a natural approach to your everyday health and beauty regimen.

For most of us an epiphany happens during our middle-age years when we realize that to have a positive aging experience there is no choice but to take excellent care of our bodies. During this time, we examine how we have treated our body and the effects it has had on our aging process. Then, we look ahead and try to figure out how we can work with our bodies to maintain our youth.

The good news is that life expectancy is rising every year. In 2007 the Centers for Disease Control and Prevention (CDC)

announced that the average American's life expectancy is 77.9 years. This means that we are starting to figure out how to take better care of our bodies and allow for a natural aging process. Adopting a lifestyle that includes regular physical exercise, rest, and a healthy diet with targeted herbals can be the best way to aging gracefully.

An ideal anti-aging protocol is one that includes Nature's most effective herbs and nutrients targeted at cardiovascular, liver, intestinal, and inflammation health.



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NEWCHAPTER.

Comprehensive VITAMIN K **Formula**

There are three forms of vitamin K that the human body can utilize to promote arterial health and bone support. 1-8

Life Extension®'s Super K with Advanced K2 Complex provides the dynamic trio of vitamin K forms in one softgel, including vitamin K1, vitamin K2 (MK-4), and vitamin K2 (MK-7).

Vitamin K1 is the form of vitamin K that is found in green vegetables. K1 is tightly bound to plant fiber, so only a fraction is absorbed into the bloodstream. Supplementation ensures ample K1 blood levels.

Vitamin K2 is usually found in meats, dairy, and egg yolks. Since you may be avoiding these foods for health reasons, ingesting a K2 supplement is essential. MK-4 is the most rapidly absorbed form of **K2**, and **MK-7** boasts a very long half-life in the body, making both forms the perfect complement to any vitamin K regimen.9

Item # 01224

Super K formula provides in just one daily softgel:

Vitamin K1	1000 mcg
Vitamin K2 (MK-4)	1000 mcg
Vitamin K2 (MK-7)	100 mcg

Each bottle of **Super K** lasts **90 days**, so members pay as little as \$5.75 a month for this high-potency blend of all three active forms of vitamin K. The retail price for a bottle containing 90 softgels is \$26. If a member buys four bottles, the price is reduced to just \$17.25 per bottle.

The same Super K formula consisting of Vitamin K1, K2 (MK-4) and K2 (MK-7) can be found in the Life Extension® Super Booster. If you take the Super Booster, you do not need additional Super K with Advanced K2 Complex softgels. Contains tree nuts (coconut).

Warning to Coumadin® (warfarin) Drug Users

Patients prescribed vitamin K-antagonist anti-coagulant prescription drugs like warfarin should consult their physician before taking vitamin K supplements like Super K and Super Booster. There is evidence, however, that users of druos like warfarin could benefit from a cou dose of supplemental vitamin K. Ask your doctor if you can take a low dose (45 mcg a day) of vitamin K2 in the long-acting MK-7 form for the purpose of stabilizing your INR levels and also protecting your body against long-term vitamin K deficit. Do not initiate any form of vitamin K supplementation without full cooperation of your treating doctor, as your doctor may need to increase your dose of warfarin to compensate for the vitamin K you supplement with. Life Extension provides several forms of low-dose vitamin K for physician consideration

To order Super K with Advanced K2 Complex or Super Booster, call 1-800-544-4440 or visit www.LifeExtension.com

LifeExtension Dietary Suppleme

- Horm. 2008;78:393-416. tion. 2006 Jul-Aug;22(7-8):845-52 Tissue Int. 1996 Nov;59(5):352-6.
- iner Metab. 2008:26(3):260-4. ol Regul Homeost Agents. 2008 Mar;22(1):35-44.
- 007 Apr 15:109(8):3279-83



WHAT'S INSIDE

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LifeExtension° Magazine



28 SLOW FIVE MECHANISMS OF AGING

A plant extract from the French Maritime pine tree has been shown to modulate *five major mechanisms of aging.*Laboratory results demonstrate significant improvements in skin elasticity, blood glucose, cellular function, and capillary health with the use of this phyto-compound.



42 SAFELY MANAGE JOINT INFLAMMATION

A new clinical trial shows a superior-absorption curcumin complex circumvents multiple inflammatory targets rather than simply dulling arthritis pain.



56 BLOCK CRAVINGS FOR SUGARY SNACKS

Saffron extract can safely inhibit the snacking impulse and block the increased appetite for food by targeting food compulsions in the brain.



68 DON'T OVERLOOK YOUR THYROID

The thyroid is a key regulator of energy, metabolism, and body weight. Physicians often overlook multiple problems caused by a malfunctioning thyroid. Eva Cwynar, MD, explains why thyroid tests are so essential.



82 VITAMIN E FOR SUN PROTECTION

Daily sun exposure, pollutants, and free radical damage accelerate skin aging and collagen destruction. A topical application of the *gamma tocotrienol* form of **vitamin E** regulates gene signals in the skin to reduce common causes of skin aging.



GUARD AGAINST ARTERIAL CALCIFICATION

A recent study showed that **calcium supplements** (by themselves) may increase **heart attack** risk. Data was omitted showing that **magnesium** and **vitamin K2** prevent **cardiovascular disease** by shielding soft tissues against deadly **calcification**.