

**HOW TO REDUCE YOUR PSA LEVEL**

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# LifeExtension®

The ULTIMATE Source For New Health And Medical Findings From Around The World

May 2013

## Living Beyond 100 Years in Good Health!

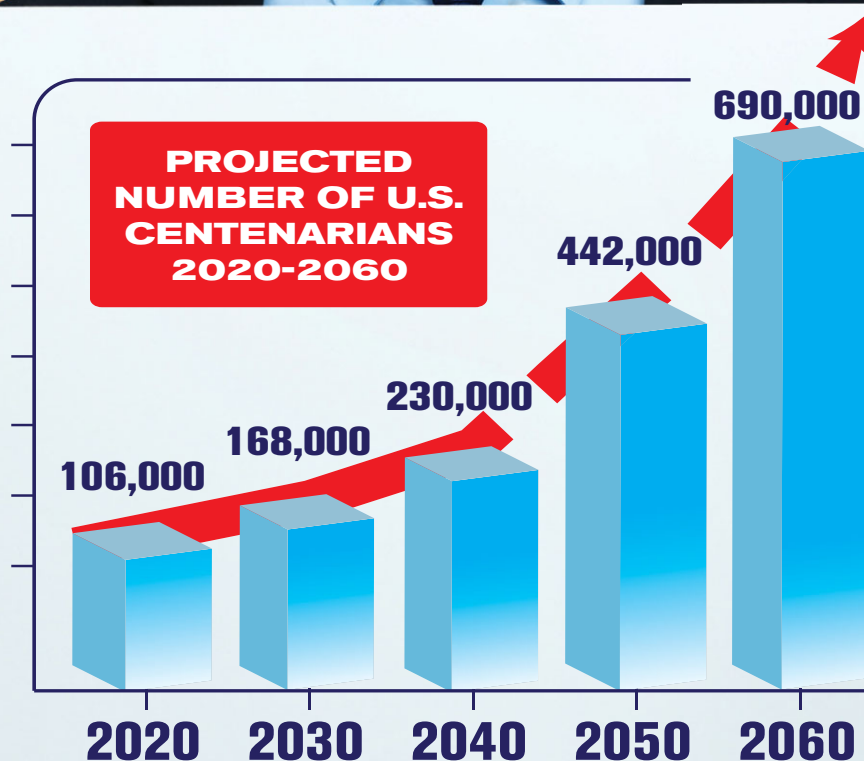
**Exclusive Report on Super-Centenarians**

**Defend Yourself Against  
Federal Death Panels**

**Faster-Absorbing  
Vitamin C**

**Report from  
Dubai Anti-Aging  
Conference**

**High-Quality  
Tryptophan  
Has Returned**



(Source: 2012 U.S. Census Bureau projection)



NEW

# ASTAXANTHIN Formula with *Increased* Bio-availability

**Astaxanthin** is a fat-soluble carotenoid compound. The challenge to deriving maximum benefits is its normally limited absorption—as low as about **50%**.<sup>1,2</sup> Assimilation of astaxanthin is impeded by limited uptake and intestinal degradation.

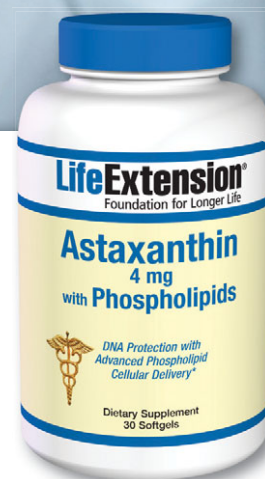
A new **Astaxanthin 4 mg with Phospholipids** combines **4 milligrams** of natural astaxanthin with a *proprietary blend* of **phospholipids**.

By incorporating phospholipids, scientific study shows that carotenoid **absorption** may be enhanced **several-fold**.<sup>3</sup>

The new **Astaxanthin 4 mg with Phospholipids** uses four different phospholipids to facilitate maximum absorption of **astaxanthin** into the bloodstream, where it is transported to cells throughout the body.

## ASTAXANTHIN

Each softgel of the new **Astaxanthin with Phospholipids** provides **4 mg** of natural astaxanthin along with **80 mg** of proprietary phospholipid blend. Just one softgel a day provides tremendous systemic cellular support!



Item #01720

A bottle of 30 softgels of **Astaxanthin 4 mg with Phospholipids** retails for \$16. If a member buys four bottles, the price is reduced to **\$10.50** per bottle. **Contains soybeans.**

### References

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3. *Int J Pharm.* 2011 Jun 30; 412(1-2):99-105.

**To order Astaxanthin 4 mg with Phospholipids,**  
call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



## REPORTS

## 36 ACHIEVE BALANCED IMMUNE FUNCTION

For optimal health, your immune system needs to be balanced. Researchers have discovered a novel extract that modulates immune function as *needed*. In one study, **54%** of participants using this natural botanical experienced relief of **over-active immune attack** in just 15 days compared to only **10%** in the placebo group.

## 46 A BETTER FORM OF VITAMIN C

Every tissue and cell in our body requires vitamin C for growth and repair. But because vitamin C can't be stored in the body, it's difficult to maintain optimal levels. Fortunately, scientists have uncovered unique botanical extracts that increase the rate at which your body absorbs and retains vitamin C allowing you to reach peak concentration faster and maintain it longer.

## 70 TRYPTOPHAN IMPROVES BRAIN CHEMISTRY

With advancing age, chronic inflammation interferes with the production and release of **serotonin**, resulting in mood disorders such as depression, anxiety, irritability, and reduced motivation. **Serotonin** levels increase in response to the amino acid tryptophan. Proper use of **tryptophan** can *reverse* the behavioral symptoms of age, while improving mood, sleep quality, and exercise motivation.

## 80 CONFERENCE REPORT

At the American Anti-Aging Symposium held in Dubai, an international group of physicians reported on recent life-changing findings in the areas of bio-identical hormone replacement, weight loss, understanding cancer mechanisms, and reducing heart disease.



58 ON THE COVER

## WHY SOME PEOPLE LIVE SO LONG

**Super-centenarians** are people who have reached 110 years of age or more in relatively good health. Their genes may hold the secret to a longer life. In a new study partially funded by the **Life Extension Foundation®**, two researchers traveled the world collecting data and DNA samples to discover the biological factors of longevity in super-centenarians. The objective is to utilize this information to re-engineer our DNA to duplicate and improve on the good health and long life of **super-centenarians**.

## DEPARTMENTS

## 7 AS WE SEE IT—FEDERAL DEATH PANELS

As Medicare descends into insolvency, the government is assembling “task forces” to disseminate misleading propaganda that will cause the premature deaths of **tens of millions** of Americans. **Life Extension®** exposes this lethal government charade. Also learn safe ways to lower elevated **PSA** blood levels.

## 27 IN THE NEWS

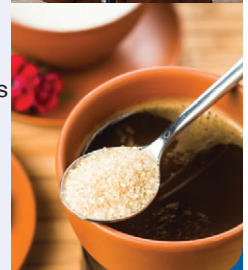
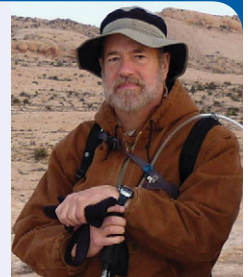
Omega-3s reduce risk of age-related macular degeneration; metformin associated with reduced cancer risk; tea polyphenols have positive effects on stomach ailments; and more.

## 89 WELLNESS PROFILE

Mathematician, astrophysicist, and aeronautical engineer, David Ross has run **36 marathons in seven years**. At age **63**, he attributes his continuing good health, joy in life, and strong sense of adventure to his **23-year** membership in **Life Extension®** and his supplement regime.

## 95 AUTHOR INTERVIEW

The prevalence of type II diabetes has tripled in America since the 1980s. In this exclusive interview, Dr. Mark Hyman discusses how to avoid the risks of **diabetes** through optimal nutrition, balanced hormones, reduced inflammation, quality supplementation, and stress reduction.





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Post your questions, add your comments, and access useful information on health, nutrition, prevention, anti-aging, and more.

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Cover graph from: *Centenarians in the United States*, U.S. Census Bureau, 1999.

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# PURE, HEART HEALTHY Super Omega-3 EPA/DHA



Item # 01482

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.<sup>1-9</sup>

To ensure the purest, most stable, and easy-to-tolerate fish oil supplement, **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.<sup>10</sup>

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** helps with inflammation better than fish oil alone.<sup>11</sup>

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

**Super Omega-3** (4 regular size softgels) supplies the equivalent content of **6 tablespoons of extra virgin olive oil**. Take two 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 **\$21** per bottle. If **10 bottles** are purchased, the cost is **\$18.68** per bottle. (Item # 01482)

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

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.

## The daily dose (four softgels) of SUPER OMEGA-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract provides:

EPA (eicosapentaenoic acid)	1400 mg
DHA (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 softgel for easier swallowing. We have accomplished this by making **smaller** softgels available.

A bottle containing 240 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 **\$21** per bottle. If **10 bottles** are purchased, the cost is **\$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 **\$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](http://www.LifeExtension.com)**

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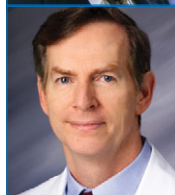
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**Aubrey de Grey, PhD**, is a biomedical gerontologist and Editor-in-Chief of Rejuvenation Research, the world's highest-impact peer-reviewed journal focused on intervention in aging. He received his BA and PhD from the University of Cambridge in 1985 and 2000 respectively. Dr. de Grey is a Fellow of both the Gerontological Society of America and the American Aging Association, and sits on the editorial and scientific advisory boards of numerous journals and organisations.



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**Frank Eichorn, MD**, is a urologist specializing in prostate cancer for 10 years. He has a private practice in Bad Reichenhall, Germany, and is prostate cancer consultant at the Urologische Klinik Castrangius, Planegg, Munich. In his integrative approach to prostate cancer he is working together with an international network of experts to improve treatment outcomes for prostate cancer patients with a special focus on natural and translational medicine.



**Deborah F. Harding, MD**, is founder of the Harding Anti-Aging Center. She is double board-certified in internal medicine and sleep disorder medicine. She also earned the Cenegenics certification in age management medicine. She is a faculty member of the new University of Central Florida Medical School.



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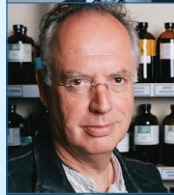
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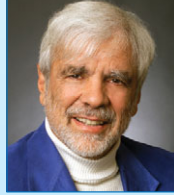
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# Federal Death Panels



BY WILLIAM FALOON



The **federal government** has a problem. It is obligated to pay the sick-care expenses of a surging population that is living years beyond original expectations.

The result of Americans surviving longer is that government medical insurance programs are descending into insolvency.

One way to reduce outlays is to deceive the public with misleading propaganda that urges citizens to **neglect** their health.

If this charade succeeds, tens of millions will die prematurely, thus sparing **Medicare** and other programs the expense of fulfilling their obligations to aging Americans. There's no question about it, premature **death** is cost effective for the government.

**Government** has a big advantage. Their **deceptive reports** receive widespread media coverage, which leads most consumers to believe them.

**Life Extension®** is on the opposing side. We strive to keep our members **alive** far beyond *any* expectation. Our **33-year track record** documents that we are decades ahead of government-sanctioned medicine, yet the media ignores our science-based positions.

As a reader of this publication, you get to learn what our government is seeking to cancel. >

In **1941**, the Japanese bombed Pearl Harbor. The ensuing World War caused the deaths of over **405,000** Americans.<sup>1</sup>

A more significant event occurred in **1941** from a loss-of-life standpoint. That year, a study was published in the journal *Cancer Research* showing greater **cancer mortality** in people living at higher latitudes—where there is less sunlight exposure.<sup>2</sup>

Instead of acting to save lives, this finding was overlooked by government-sanctioned medicine until **2006**, when the *Journal of the National Cancer Institute* published results from a huge population study showing **lower cancer deaths** in response to **higher vitamin D blood levels**.<sup>3</sup> Compared to **25-hydroxyvitamin D** blood levels of **20 (ng/mL)**, this study's analysis indicated those with a reading of **50 (ng/mL)** would have a **51% reduction** in total **incidences of cancer**.<sup>3</sup>

The *Journal of the National Cancer Institute* study author's concluded that to increase 25-hydroxyvitamin D from a low of **20** to a higher **50 ng/mL**—about **4,500 IU** a day of **vitamin D supplementation** would be necessary.<sup>3</sup>

Move forward to year **2012** and another government-sponsored program (**United States Preventive Services Task Force**) issued a carefully crafted press release to imply there is no benefit to supplementing with **vitamin D** (or calcium). This led newspapers like the *Washington Post* to run the headline:

**“Task Force Recommends Against Vitamin D, Calcium Supplements”<sup>4</sup>**

These kinds of misleading headlines were repeated in the world-wide media.<sup>5-9</sup>



### What the “Task Force” Really Stated

The **United States Preventive Services Task Force** evaluated 137 published studies about vitamin D and concluded what most *Life Extension* members already know, i.e. low-dose vitamin D (**400 IU/day**) has no benefit in preventing fractures or cancer.<sup>10</sup>

To reiterate this point, the Task Force reviewed the published data and came to the conclusion that women should not take low doses of vitamin D to prevent fracture or for any other benefit.

The Task Force is correct! This was documented by the **2006** study published in the *Journal of the National Cancer Institute* showing that it would require **4,500 IU** a day of **vitamin D** to reduce incidences of cancer by **51%**.<sup>3</sup>

The Task Force also accurately stated that **1,000 mg** a day of a poorly absorbed **calcium** (calcium carbonate) plus **400 IU** of **vitamin D** does not prevent bone fractures. This was long ago known to nutritional experts who understand that **osteoporosis** prevention requires supplementation with nutrients such as **vitamin K**<sup>11-15</sup> and **magnesium**,<sup>16-20</sup> along with maintenance of a youthful **hormone balance**<sup>21-23</sup> and **resistance exercises**.<sup>24-27</sup>

### Omissions and Lies

Instead of recommending that *effective* doses (over **4,000 IU/day**) of vitamin D be taken along with other critical nutrients and hormones, the **United States Preventive Services Task Force** concluded that people should not take *any* **vitamin D** or **calcium**.

The Task Force went further and noted a small risk in **kidney stones** in women taking calcium and vitamin D supplements. This contradicts other studies showing calcium supplements reduce kidney stone risk<sup>28-30</sup> and that **magnesium** and **potassium** intake prevents kidney stone formation by **85%**.<sup>31-33</sup>

The most outrageous **lie** was a Task Force statement that most people can achieve sufficient doses of vitamin D and calcium with a healthy diet. The truth is that the *only* way to achieve optimal **vitamin D** levels *without* supplements is significant sun exposure. There is no healthy diet that comes close to providing over **4,000 IU** of **vitamin D** each day. This blatant lie deceives consumers into believing they will obtain enough **vitamin D** if they *eat* healthy.

This is one reason why we refer to the **United States Preventive Services Task Force** as a “**Federal Death Panel**.” Their recommen-



dation to not take *any* vitamin D, because **low-dose** vitamin D is ineffective, will condemn **millions of Americans** to needlessly die of **cancer** if the truth remains suppressed.

### Clarifying “Low-Dose”

Some people find it difficult to understand why something as effective as **vitamin D** does not show some benefit even with **low doses** (compared to no dose).

The harsh reality is that to protect against cancer and other diseases, the body has to maintain a minimum blood level of around **50 (ng/mL)** of **25-hydroxyvitamin D**.<sup>34</sup> Blood levels below **50 ng/mL** mean different cells are viciously competing for an **insufficient** amount of vitamin D.<sup>35</sup> In this lethal scenario, many cells are inevitably deprived of enough vitamin D to maintain healthy division patterns.<sup>36</sup>

According to the **2006** mega-study published in the *Journal of the National Cancer Institute*, if one were to ingest **400 IU** of vitamin D a day, the increase in **25-hydroxyvitamin D** blood levels would be a tiny **2.6 ng/mL**.<sup>3</sup> This is in keeping with an early report showing for each **1,000 IU** of vitamin D3 that is supplemented, **25-hydroxyvitamin D** blood levels will increase by **7 ng/mL**.<sup>37</sup>

A typical aging person who does not take vitamins will have **25-hydroxyvitamin D** levels around **20 (ng/mL)**. So boosting it to **22.6 ng/mL** by taking a **400 IU** vitamin D supplement does not come close to achieving conventional medicine’s minimum blood level of **32 ng/mL**, let alone optimal ranges of over **50 ng/mL**.

If one supplements with **5,000 IU** of vitamin D each day, they

can increase **25-hydroxyvitamin D** from **20** to around **55 ng/mL**, which is the protective blood level enjoyed by youngsters playing each day in the summer sun. (Children should not play in the sun without sunscreen.)

It is important to note that there is a huge individual variation in one’s response to vitamin D dosing, meaning some people only need around **3,000 IU/day** while others need over **10,000 IU/day** to achieve optimal status. That is why Life Extension added the **25-hydroxyvitamin D** test to its **Male and Female Blood Panels** last year. I have learned through personal communication from Stephen B. Strum, MD, FACP, that the average vitamin D3 dose needed by adult men in a prostate cancer practice to achieve a **25-hydroxyvitamin D** level of **60 ng/mL** is **8,000 IU/day**.

To use an analogy as to why **low-dose** vitamin D is worthless (which is what the Task Force was really saying), pretend you wake New Year’s Day with a split-

ting headache from excess drinking the night before. If you take **400 mg** of **ibuprofen**, your headache may disappear. If you only take **40 mg** of ibuprofen, you are unlikely to feel any relief. If a clinical study is done using **40 mg** of ibuprofen to relieve headaches, the results will show there is no difference between placebo and **40 mg** of ibuprofen. That does not mean ibuprofen is ineffective, it just means that **ten times more** is needed. In medicine, this is called a *dose-response relationship*, and it applies to virtually every nutrient, hormone, and prescription drug.

The **United States Preventive Services Task Force** cited data from studies showing doses as low as **400 IU/day** of **vitamin D** do not prevent **bone fracture** or **cancer** as a basis to advise aging Americans to not take *any* vitamin D (or calcium). This is clearly an absurd recommendation since hard-core scientific data show **ten times more** vitamin D (over **4,000 IU/day**) is required to provide expected benefits.<sup>38-41</sup>



## Cancer Risk Reduction in Response to Higher Vitamin D Status

Cancer Primary Site	Risk Reduction with Increased Vitamin D Levels
Breast <sup>43</sup>	50%
Colon <sup>44,45</sup>	50%
Prostate <sup>46,47</sup>	49%
Ovary <sup>48</sup>	36%

## Vitamin D Levels in Supplement Users

**Life Extension** was the first to discover that most supplement users have *insufficient* vitamin D levels unless they take around **5,000 IU** of vitamin D each day. *Insufficient* is defined as blood levels of **25-hydroxyvitamin D** under **50 ng/mL**.

In **2009**, Life Extension conducted the largest survey of supplement users in history and found **85%** had *insufficient* vitamin D blood levels based on **25-hydroxyvitamin D** readings of **50 ng/mL or less**.<sup>42</sup> These findings motivated health conscious consumers to increase their intake of this inexpensive nutrient.

The result is that most enlightened supplement users now have **optimal** vitamin D blood status, based on *Life Extension's* ongoing review of the thousands of **25-hydroxyvitamin D** blood tests our members take.

When we see a **25-hydroxyvitamin D** reading over **100 ng/mL**

(which is rare), we contact the member and advise they reduce their **vitamin D** intake.

Ideal **25-hydroxyvitamin D** ranges are probably between **50-80 ng/mL**. Yet based on the deceptive Task Force recommendations, average consumers have been misled into thinking they should take no **vitamin D** or **calcium**.

To reiterate, both sides agree there is no proven efficacy with **low-dose** vitamin D. By deceiving the public into thinking they should not take *any* **vitamin D**, the **United States Preventive Services Task Force** is functioning as a **Federal Death Panel**.

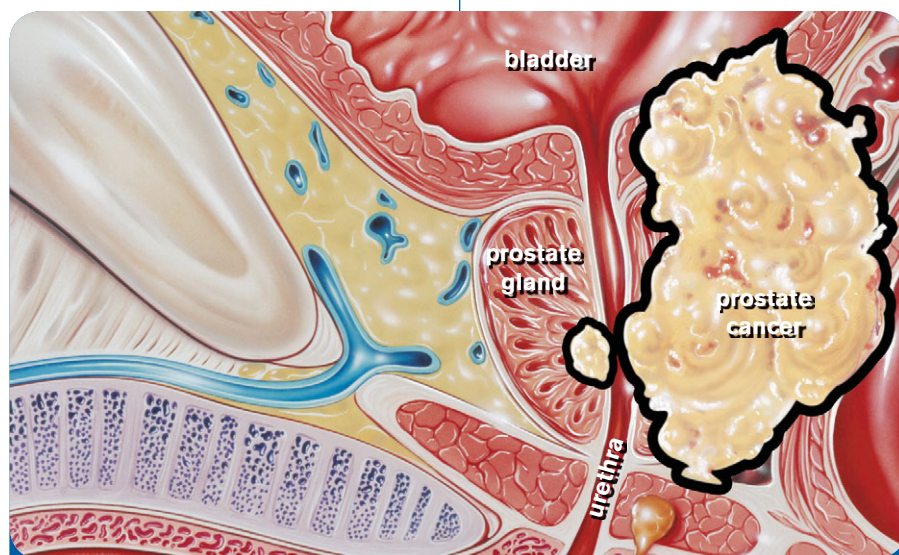
## Watch Prostate Cancer Death Rates Soar

Life Extension is on the front lines helping people afflicted with metastatic cancer to find therapies overlooked by their oncologist. In too many cases, advanced-stage cancers fail to respond to treatment, or a tumor that goes into

remission rapidly recurs. If these metastatic cancers were detected earlier, the probability of cure would have been significantly greater.

The most common cancer striking men has a **blood marker** that can enable very early detection, thereby enabling curative therapies to be employed before metastasis strikes. The name of this blood marker is **PSA** (prostate-specific antigen) and it has spared **tens of thousands** of men, from young men in their forties to those sixty and beyond, agonizing deaths from **metastatic prostate cancer**.

The problem is that most urologists and oncologists are not properly interpreting PSA results, nor are they efficiently implementing further diagnostic and treatment protocols. The unfortunate outcome is that too many aging men are being subjected to needless and incompetently administered procedures that sometimes result in unnecessary suffering and premature death.



A cancerous prostate gland has increased in size in a disorderer growth often seen in cancer. It has invaded the bladder wall and the rectal wall. Also seen is the urethra (tube leading out of the bladder).

© JOHN BAVOSI / SCIENCE PHOTO LIBRARY



Instead of recommending that medical professionals upgrade their protocols to deliver state-of-the-art technology, the **United States Preventive Services Task Force** suggests that aging men not undergo PSA screening—at all!<sup>49</sup>

The media ran this **Federal Death Panel** recommendation as headline news. The result is that prostate cancer will once again be diagnosed at an advanced stage, when there is bulky disease and a small chance of curative therapy. Men will see their physicians as they did in the pre-PSA era, prior to 1987, with presenting clinical findings such as:

- A. Inability to urinate due to prostate cancer obstructing the urethra as it passes through the prostate gland.
- B. Pain in the bones or fracture of bones such as the femur or humerus or vertebral bodies of the spine due to bone metastases from prostate cancer.
- C. Spinal cord compression due to encroachment by prostate cancer that traveled to bone or lymph node and then invaded and compressed the spinal cord.
- D. Nerve root pain if prostate cancer compresses a major nerve as it leaves the spinal cord.
- E. Symptoms of uremia (a toxic condition involving accumulation of metabolic waste products in the blood stream) due to lymph node compression of the ureters caused by prostate cancer that has spread to the lymphatics. (Ureters are tubes that drain urine from kidneys to the bladder.)

### Doctors Don't Know That Cancer Cells Use PSA

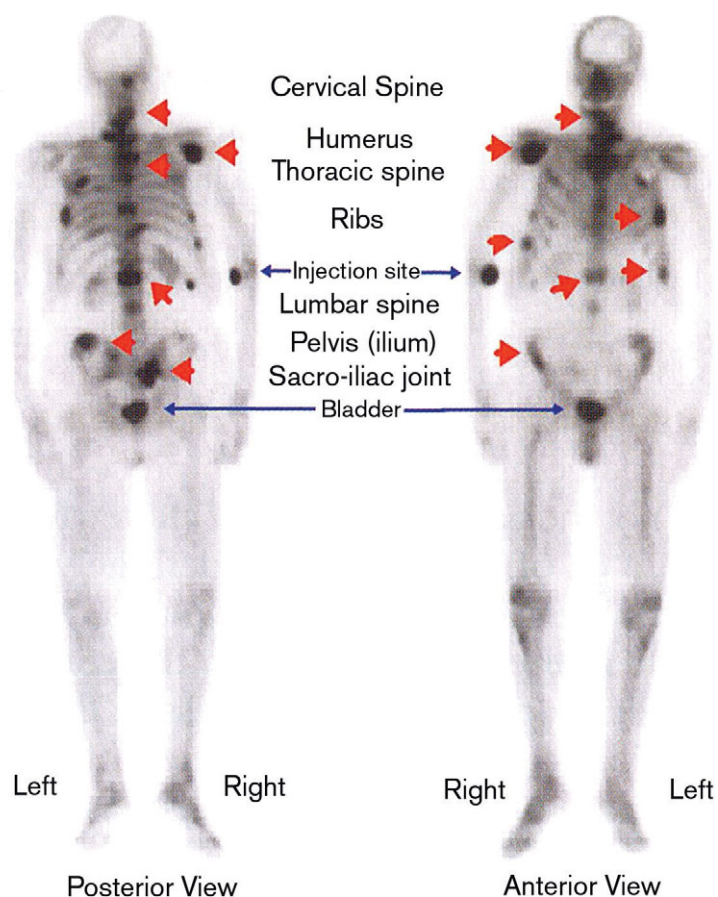
**PSA** is not just a marker of prostate disease. It functions as an enzyme to break down natural barriers that surround cells. Cancer cells spew out PSA that digests the protective extracellular matrix

(tissues surrounding cells). PSA thus contributes to the ability of cancer cells to escape the prostate and metastasize to distant sites within the body.

By lowering PSA levels, men can diminish the ability of cancer cells in their prostate gland to break down the healthy tissues that help contain them.

### What Can Happen When PSA Screening is Not Performed

This is a radioisotope bone scan of a man presenting with advanced prostate cancer showing metastatic lesions that have invaded bone. Black areas represent uptake of a radioisotope tracer at sites of bone metastases. These metastases involve the spine, ribs, pelvis, and right shoulder. Metastatic lesions at these sites can result in increased fracture risk and spinal cord compression among other problems.



Source: *A Primer on Prostate Cancer: The Empowered Patient's Guide* by Stephen B. Strum, MD, FACP, and Donna Pogliano.

Our understanding that cancer cells utilize PSA's enzymatic *protease digestion* to escape confinement provides persuasive evidence for keeping PSA levels low to prevent frank prostate cancer from developing, or markedly slow it down.

### Easy Ways to Reduce PSA

We all know that if artery-clogging **LDL** is elevated, it can be reduced by lifestyle changes, nutrients, and drugs. Overlooked is the fact that elevated **PSA** can also be reduced in many men.

What this means is that **PSA testing** can enable men to identify prostate disease at an early stage when it might be reversible.

While conventional reference ranges state that PSA levels under **4.0 ng/mL** are normal, we at Life Extension view any reading over **1.0 ng/mL** with suspicion. We know that PSA readings over **1.0 ng/mL** can indicate unhealthy activity, such as prostatitis, benign prostate hypertrophy, or prostate cancer.<sup>50,51</sup>

Rather than watching PSA readings gradually elevate, there are interventions that reduce and/or stabilize the production of PSA, and thus shut down a mechanism used by cancer cells to escape confinement within the prostate gland.

Life Extension suggests that men with PSA readings over **1.0 ng/mL** initiate steps to reduce levels of this tissue-destroying enzyme. Dietary changes and nutritional supplements may be tried first, but drugs like dutasteride (**Avodart**®) are recommended to quickly reduce PSA, shrink prostate gland size (to reduce urinary difficulties), and to reduce prostate cancer risk.<sup>52</sup>

### Hidden Dangers of PSA

PSA may contribute to prostate cancer progression and the ability of these cancer cells to escape the prostate and metastasize to distant sites within the body. We can no longer think of PSA as merely a blood marker reflecting prostate health.

In fact, many, if not all, of the biomarkers (like PSA) used in tracking a wide array of cancers may have specific cancer-facilitating functions. Therefore, in men with prostate cancer, and perhaps even in those trying to prevent the emergence of prostate cancer, taking steps to keep PSA levels low may reduce one's risk of developing this illness or having it progress to a clinically symptomatic condition.

The easiest way to reduce PSA is to inhibit the enzyme *5-alpha reductase*, which transforms testosterone into the more androgenic dihydrotestosterone (DHT). DHT has a growth-promoting effect on prostate cells that is **2.4 to 10 times** greater than that of testosterone.<sup>58,59</sup>

In a study of 4,325 men with benign prostate enlargement who were randomly selected to receive either Avodart® (**0.5 mg/day**) or placebo, those receiving Avodart® had a cumulative incidence of prostate cancer of **1.2%** compared to **2.5%** for the placebo group at 27 months of follow-up. This equates with a **52% reduction** in prostate cancer in the Avodart® group.<sup>60</sup>

In another study using finasteride (Proscar®), 18,882 men aged 55 or older (with normal digital rectal examination results and a PSA level of **3.0 ng/mL** or lower) were randomly assigned treatment with Proscar® (**5 mg/day**) or placebo for seven years. Prostate cancer was detected in 803 of the 4,368 men in the Proscar® group and 1,147 of the 4,692 men in the placebo group, for a **24.8% reduction** in prevalence over seven years. High-grade cancers were noted in **6.4%** of Proscar®-treated patients compared to **5.1%** of men receiving placebo.<sup>61</sup> (Proscar® suppresses only **type two** *5-alpha reductase*, whereas Avodart® blocks both **type one** and **type two** *5-alpha reductase*. Avodart® thus appears to be the better drug.)

Aging men should consider having their blood tested for DHT. If DHT levels are elevated, Avodart® drug therapy appears to be safe and effective not only for improving urinary flow symptoms, but more importantly, for potentially reducing prostate cancer risk. Avodart® appears to accomplish these effects by reducing the growth-promoting effects of DHT on prostatic tissue, while decreasing the cancer-inducing properties of PSA by reducing PSA synthesis in the prostate gland.

Avodart® does have several downsides. At more than **\$4** per capsule, it is expensive. Moreover, a small percentage of men who use it have sexual dysfunction problems such as decreased libido (**3%**), impotence (**5%**), and ejaculation disorders (**1%**). The frequency of these side effects reportedly decline after six months of continued use of Avodart®.<sup>62</sup> Fortunately, Avodart® is approved by the FDA to treat urinary symptoms related to benign prostate enlargement, so it is covered by most insurance plans.

Avodart® can slash PSA readings by nearly **60%**.<sup>53</sup> Critics of Avodart® mistakenly view this as bad because they think it may mask underlying prostate cancer. If properly used, Avodart®, along with dietary changes and nutrient supplements can markedly reduce the chances that isolated malignant cells in the prostate gland will mature into full-blown prostate cancer.

Proper use of Avodart® should also include testing **free testosterone** blood levels to ensure an aging man is not suffering a testosterone deficiency. When an aging man deficient in testosterone takes a drug like Avodart® that reduces **dihydrotestosterone**, the result can be increased risk of **heart failure**.<sup>54</sup> The solution is to restore natural testosterone levels to a youthful range for systemic benefits and then initiate Avodart® (**0.5 mg** daily) to protect against benign prostate enlargement and prostate cancer.

We at **Life Extension** are well aware that it is quite normal for men over age 50 to have PSA readings between **1.1** and **2.4**. It is also “normal” for men over age 50 to get up frequently at night to urinate and for these same men to develop some stage of prostate cancer.

Our argument is that when a blood test shows a PSA reading over **1.0**, this should be greeted as a friendly warning to initiate definitive steps to reduce it. In the process of reducing PSA by making healthier lifestyle choices and achieving youthful hormone balance, men should see a reduction in nighttime urinary frequency, along with reduction in risk for virtually all degenerative disease. That’s quite a benefit in return for taking steps to reduce just one blood marker, i.e. **PSA**!

### Analogy to Testing Cardiac Risk Factors

The medical establishment supports **blood testing** to identify risk factors that predispose people to vascular disease. When blood test results show elevated **LDL, triglycerides**, or **glucose**, steps are taken to lower these artery-blocking factors and thus slash coronary artery disease risk.

The same can be done when a blood test reveals PSA over **1.0 ng/mL**. Interventions can be readily employed to lower PSA and thus reduce prostate disease risk.

Just imagine that a **blood test** reveals your **triglycerides** or **glucose** are high. Instead of lowering these **risk factors**, what if doctors instead performed invasive diagnostic techniques and even needless surgeries—as is done far too often today in response to an elevated **PSA** reading. If this type of medical mismanagement were done in the cardiovascular arena, the **United States Preventive Services Task Force** would likely

recommend *against* glucose and triglyceride blood testing since too many false positives were occurring, resulting in expensive and side effect-prone procedures. What few doctors know today is that a rising PSA can sometimes be reversed without causing serious side effects. Since the **United States Preventive Services Task Force** had no idea that PSA itself contributes to carcinogenesis and that PSA is often controllable, they issued a blanket warning that all healthy men should avoid PSA screening. The lunacy of this archaic view is further exposed when one realizes how many different ways PSA levels can be controlled.

### Staggering Statistics on Prostate Cancer

Prostate cells are very prone to gene mutation.<sup>55</sup> Autopsy evidence indicates that prostate cancer is histologically evident in up to **34%** of men aged 40-49 and up to **80%**





of men aged 80 and older.<sup>56,57</sup> Most men, however, never progress to clinically diagnosed disease, indicating the presence of **control mechanisms** that keep prostate cancer cell colonies small and thus controlled.

There is an increasing understanding of mechanisms involving gene regulation processes that enable cells to divide out of control and eventually form a prostate tumor. These new findings make it more important than ever for men to monitor their **PSA blood levels** to detect prostate cancer at its earliest stages.

### ***Boron Reduces PSA... Protects against Prostate Cancer***

**PSA** and **IGF-1** function as active growth factors in the prostate gland.<sup>63-66</sup>

In mice, **boron** protects against the ability of **PSA** to degrade extracellular matrix and reduces expression of **IGF-1** in prostate tumors.<sup>67</sup>

One animal study showed that in response to both low- and high-dose **boron** supplements, **PSA** levels plummeted **87%** on average, while tumor size declined **31.5%** on average.<sup>67</sup> Another study showed that **boron** inhibited proliferation of androgen-dependent and androgen-independent prostate cancer cell lines in a dose-dependent manner.<sup>68</sup>

A report from **UCLA** showed that men with the highest dietary **boron intake** reduced their prostate cancer risk by **54%** compared to men with the lowest **boron** intake!<sup>69</sup> While the authors noted that the observed association should be interpreted with caution because of the small case sample size and the nature of the cross-sectional study design, clearly these findings deserve further investigation.

If laboratory studies can be replicated in human patients, **boron** at doses ranging from **6 to 15 mg** a day may become an effective and low-cost adjuvant therapy. Most Life Extension members already take **3-9 mg** of **boron** contained in various multi-nutrient formulas.

### ***Green Tea May Block PSA's Detrimental Effects***

There may be another way to protect the prostate gland against its own **PSA**. Since consuming **green tea** has been reported to lower the risk of prostate cancer, scientists investigated the effects of the green tea flavonoid **epigallocatechin gallate (EGCG)** on the expression and activity of **PSA** by prostate cancer cells.

*The SUPERIOR doctor prevents sickness;  
The MEDIOCRE doctor attends to impending sickness;  
The INFERIOR doctor treats actual sickness.*

*--Chinese Proverb*



EGCG was shown to restrain **PSA** expression. In addition, EGCG inhibited tumor-promoting activities such as degradation of type IV collagen. EGCG's beneficial effects were at blood levels close to those measured in serum following ingestion of green tea.<sup>70</sup> The study authors proposed that **green tea extract** may be a natural inhibitor of prostate carcinoma aggressiveness.

Newer studies are uncovering additional mechanisms by which green tea protects against prostate cancer.<sup>71-73</sup> Spurred by these anti-cancer effects, doctors at **Louisiana State University** gave prostate cancer patients **1,300 mg** of green tea extracts (mostly **EGCG**) prior to the time of



radical prostatectomy. Their findings showed significant reductions in **PSA** and other tumor promoters such as **vascular endothelial growth factor**. These findings led the doctors to conclude that there is a potential role for green tea extracts in the treatment and prevention of prostate cancer.<sup>74</sup>

### **Treating Advanced Prostate Cancer with Lycopene**

In a study of twenty patients with metastatic hormone-refractory prostate cancer, each patient received **10 mg** a day of **lycopene** for three months. No other treatment was given. One patient achieved a complete response, defined as a reduction of PSA (to under **4 ng/mL**) and the absence of any sign of the disease for eight weeks. Six patients (**30%**) had a partial response, defined as a **50% reduction** in PSA and alleviation of other symptoms such as bone pain if present. The disease remained stable in 10 patients (**50%**) and

### **The PSA Controversy**

In **May 2012** the **United States Preventive Services Task Force** (USPSTF) proclaimed that regular PSA testing should not be used as a screening tool for prostate cancer based upon their analysis.<sup>49</sup>

There were several problems with the USPSTF analysis. The report de-emphasized a major, high quality trial that showed robust mortality benefits by including in their analysis trials of poor/ lesser quality that did not show mortality benefits. This statistical manipulation diluted the over-all statistical effect of the higher quality trial on mortality (benefit) in their analysis.

This high quality trial was the **European Randomized Study of Screening for Prostate Cancer** (ERSPC), which randomized 182,000 men aged 50 to 74 from 7 countries to PSA testing every 2 to 7 years (depending on center and year) or to usual care. An analysis of 162,243 men aged 55 to 69 found that screening was associated with a **20%** reduction in prostate cancer-specific mortality.<sup>103</sup>

After publication of the main ERSPC results, a participating center (Göteborg, Sweden) reported their results separately. This site determined that a PSA screening threshold of **2.5 to 3.0 ng/mL** every 2 years in 20,000 men aged 50 to 64 years **decreased risk** for prostate cancer-specific mortality by **44%** after a median of 14 years.<sup>104</sup> This finding helps corroborate **Life Extension's** long standing position that a PSA reading over **2.4 ng/mL** should be viewed with suspicion, as opposed to standard reference ranges that state that PSA reading up to **4.0 ng/mL** is normal.

Poor-quality trials included by the USPSTF in their analysis statistically diluted the beneficial effect observed in the higher quality ERSPC trial in their over-all assessment. Several lesser/poor quality trials found no difference between screening-invited and control groups in prostate cancer-specific mortality risk.<sup>105,106</sup> Major methodological flaws in these trials included failure to adequately control for randomization and/or poor allocation blinding, poor attempts to capture lost data points, etc. One trial used by the USPSTF even used an exorbitantly high PSA cut point – **10 ng/mL**, as a screening threshold.<sup>105</sup>

By including trials that erroneously classified high PSA readings (ranging from **2.5 to 10 ng/mL**) as not being suspicious, is it any wonder that the USPSTF report concluded that PSA testing does not protect men against death from cancer? Said differently, some of the data reviewed by the USPSTF did not recognize that PSA readings over **2.4 ng/mL** were indicative of possible prostate malignancy. The inevitable results were that men who could have received early treatment did not because their physicians failed to screen for prostate cancer even when PSA readings ranged from **2.5** to as high as **10 ng/mL**.

Life Extension advocates the use of PSA screening to prevent prostate cancer deaths, with an important caveat– PSA results should be tracked and monitored over time (i.e., PSA velocity) with less emphasis being placed on individual test results.

Life Extension has examined this issue in detail. For more information please see the Life Extension magazine multi-part series entitled "**The PSA Controversy**" that appeared in the December 2012 issue.



progressed in three (15%). A remarkable 63% (10 of 16) with bone pain were able to reduce their daily use of pain-suppressing drugs. The study concluded:

*“Lycopene therapy appears to be effective and safe in the treatment of hormone-refractory prostate cancer.”<sup>75</sup>*

In another study, 54 metastatic prostate cancer patients were castrated and half of them were given 2 mg of lycopene twice daily. Castration (removal of the testes) reduces testosterone levels and is a treatment for those with androgen-dependent prostate cancer. After six months, PSA declined significantly in both groups, but more so in the group receiving lycopene. After two years, 40% of the castrated group reduced their PSA level to less than 4 ng/mL, compared to 78% in the lycopene group. Bone scans showed that twice as many patients in the lycopene-plus-castration group attained a complete response compared to the castration-only men.

The author concluded:

*“Adding lycopene to orchiectomy (castration) produced a more reliable and consistent decrease in serum PSA level; it not only shrinks the primary tumor but also diminishes the secondary tumors, providing better relief from bone pain and lower urinary tract symptoms, and improving survival compared with orchidectomy alone.”<sup>76</sup>*

What is impressive about these two studies is that only small doses of lycopene (4-10 mg/day) were used. That low doses of lycopene produced such favorable results in these late-stage prostate cancer patients is quite remarkable and worthy of further study.

### The Optimal PSA Range Controversy

Many men have noticed that there are several “optimal” ranges for PSA, making it confusing for those who are trying to maintain superior prostate health.

Most mainstream labs (e.g. LabCorp & Quest) currently use a reference range of 4.0 ng/mL or less on PSA blood test results and most doctors don't get too concerned until the PSA is above that level.<sup>107,108</sup>

Studies done on healthy young men with normal prostate glands, as assessed by clinical exam of the prostate, report a range of 0-2.6 ng/mL as normal.<sup>50</sup> Some doctors use a more stringent range of 2.5 to 3.0 ng/mL or less as an optimal PSA range.<sup>51</sup>

Other doctors prefer to use age adjusted ranges that increase as a man ages. Typically in this scenario a man younger than 50 should have a PSA 2.5 ng/mL or less while a PSA up to even 6.5 ng/mL is considered normal for a man in his seventies. Another take on this age adjusted approach is looking at cutoff levels where the sensitivity and specificity of the PSA test is maximized for different age groups. Doctors using this approach may use a PSA range of 2.0 ng/mL or less for men less than 50 years old, 3.0 ng/mL or less for those aged 50-59, 4.0 ng/mL or less for ages 60-69, and 7.0 ng/mL or less for men over age 70.<sup>109</sup>

Life Extension suggests that the most stringent approach is to consider a PSA above 1.0 ng/mL as the earliest possible warning sign that changes may be occurring and those interested in superior prostate health should engage in methods to reduce it. This is not to say someone with a PSA of 2.0 ng/mL has prostate cancer, prostatitis, or BPH. It may indicate a normal prostate or it could be the earliest warning sign of small cellular changes occurring in the prostate.

It is also important to note that PSA readings should be confirmed with repeat testing and one of the most important aspects of PSA testing is getting a baseline value and looking for changes over time. Doctors especially look at the doubling time for PSA as well as the PSA velocity combined with symptoms and results of the prostate exam to further assess prostate health.<sup>110</sup>

### Federal Death Panel Advises All Men to Avoid PSA Testing

PSA testing alerts aging men that they have a prostate problem. A wide range of safe approaches can be utilized to attempt to bring PSA to optimal ranges of under 1.1.

By recommending that aging men avoid PSA testing, the United States Preventive Services Task Force is condemning a huge segment of the aging population to develop painful metastatic prostate cancer that is considered virtually incurable.

Equally important, and perhaps more important, the Task Force recommendations would exclude the use of PSA testing as a key biologic marker for prostate health. PSA values above the threshold of 1.0 ng/mL inform the medical team of disease processes affecting the prostate that may involve prostatic hyperplasia (BPH), prostatitis and/or prostate cancer. Such processes can be evaluated with various medical testing and changes in the patient's environment (external and internal) can alter the course of these diseases and change the entire course of health of that

## BLOOD TEST

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### LAB RESULTS

Last Name	Lab ID	Specimen Number	Time Collected	Date Entered	Time Reported
FALOOON	N/A	M1141260K	09:15 AM	04/16/2003	12:16 PM
First Name	Middle Initial	Phone	Control Number	Account Number	Account Phone Number
WILLIAM		954-766-8433	N/A	09134070	954-766-8433
Date of Birth	Age	Sex	Fasting	Physician Name	Physician ID
XX/XX/1954	48	M	YES	PARDELL, H.	
Tests	Results	Units	Reference Interval	Lab	
PROSTATE SPECIFIC ANTIGEN					
Total PSA	1.4		< OR = 4.0 NG/ML		

## My Personal Triumph Using PSA Testing

I was traveling to meet a new oncology group near the end of **April 2003** when I called **Life Extension's Blood Lab** to see if my most recent test results were ready. I asked Life Extension to fax these results to my hotel. What came out of that fax machine was beyond shocking. My **PSA** had shot up to **1.4 ng/mL**—it had always been below 1.0 ng/mL. (See copy of lab reports above and below.)

My reaction was a controlled panic. As far as I was concerned, there were early-stage tumor cells lurking in my prostate gland that had to be eradicated. I'd seen too many cases where PSA jumps to **1.4 ng/mL** and quickly moves up to the danger ranges (above 2.4 ng/mL).

All plans were cancelled that night as I searched computer databases to identify **every** single nutrient and life-style change that had ever been shown to reduce PSA levels. I noted each nutrient, extrapolated a human equivalent dose, and then took a quadruple-amount of almost every anti-cancer ingredient. Just some of the **quadruple-dose nutrients** I took included:

- Milk thistle extract<sup>77-79</sup>
- Green tea extract (decaffeinated)<sup>80-85</sup>
- Curcumin<sup>86,87</sup>
- Vitamin D<sup>88-91</sup>
- Cruciferous vegetable extracts (like I3C)<sup>92-94</sup>
- Gamma tocopherol<sup>95-98</sup>
- Genistein (soy) extract<sup>99,100</sup>

I made sure to take the prescription drug **metformin**<sup>101,102</sup> on a consistent basis, slashed my consumption of red meat, and vowed to stay on this ultra-high dose regimen until there was a reversal of my **PSA**. As members have seen from the blood tests I have previously posted, my **PSA** has been around **0.5 ng/mL** for the past several years---a more than **60% reduction** compared to nine years ago (when I was younger).

I am convinced that had I not had regular **PSA blood tests** and used the findings to radically alter my dietary choices and nutrient-drug intake that I would be dealing with serious prostate issues now that I have turned age **58**. In fact, at my age, prostate problems are normal.

In the December 2012 issue of **Life Extension Magazine®**, there was an article about a prostate cancer patient who used even more aggressive strategies to reverse his **PSA** and keep his cancer stable without resorting to toxic radiation or mutilating surgeries. If this patient had not discovered he had a prostate problem early on (via PSA testing) and treated it aggressively with non-toxic therapies, he might not be alive today.

As you can see from my most recent **blood test**, my PSA dropped to **0.4 ng/mL** in **2013** from **1.4 ng/mL** in **2003**. If I had not checked my PSA regularly, I might very well have **prostate cancer** now. It does run in my family.

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### LAB RESULTS

Last Name	Lab ID	Specimen Number	Time Collected	Date Entered	Time Reported
FALOOON	286065	035-216-7045-0	2:46 PM	02/04/2013	9:10 AM
First Name	Middle Initial	Phone	Control Number	Account Number	Account Phone Number
WILLIAM		954-766-8433	M57549116	09134070	954-766-8433
Date of Birth	Age	Sex	Fasting	Physician Name	Physician ID
XX/XX/1954	58	M	YES	PARDELL, H.	
Tests	Results	Units	Reference Interval	Lab	
PROSTATE SPECIFIC ANTIGEN					
Total PSA	0.4		< OR = 4.0 NG/ML		



individual. This is medicine at its best—it is preventative medicine, and it is far more compassionate than treating advanced diseases that remain subclinical for many years prior to overt manifestation.

### Government Wants You to Die Sooner!

The demarcation line between the pro-longevity principles of **Life Extension** and the pro-death edicts of the **federal government** grow wider each year. As a Life Extension member, you not only gain access to novel ways of living longer, but you learn the “other side” of the story about proven disease-reduction methods that our government is trying to cancel.

Your support has enabled us to expand our four-decade campaign against the blatantly unscientific propaganda spewed by government-sponsored “*task forces*” that recommend against **vitamin D supplements** and **PSA screening**.

Deaths from prostate cancer have been in decline as more men find out they have prostate cancer and cure it before it spreads outside the prostate gland. We refer to the **United States Preventive Services Task Force** as a **Federal Death Panel** because their recommendation to avoid PSA testing will cause the needless **deaths** of tens of thousands of men—young men, middle aged, and older.

To make matters worse, this same **Federal Death Panel** proclaims that since **low-dose** vitamin D confers zero benefits, no one should take *any* vitamin D. Since higher-dose vitamin D may slash **cancer** incidences by over **50%**,<sup>3</sup> these misguided policy statements will create an epidemic of cancer in aging humans if the truth is suppressed.

Based on an overwhelming volume of peer-reviewed published science, virtually every American should be taking around **5,000 IU** each day of **vitamin D**. Men over age 40 should have their **PSA** checked annually.

### Annual Blood Test Super Sale

In 1996, we initiated a low-cost service whereby members could request their own **blood tests**.

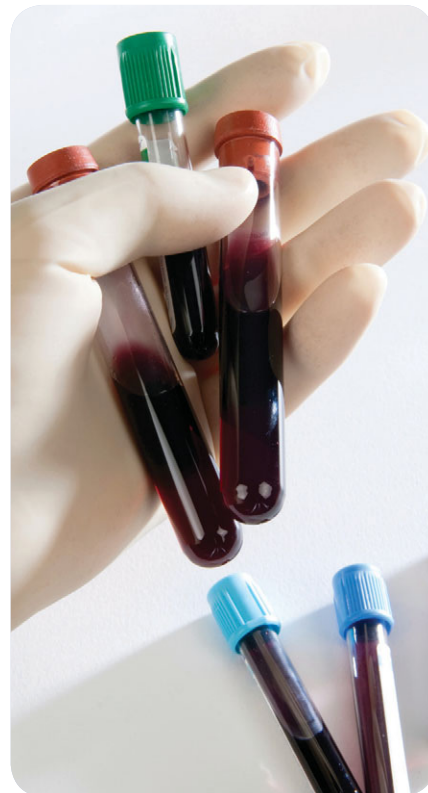
Once a year, the price of the comprehensive **Male** or **Female Blood Test Panel** is sharply discounted so that members can ascertain their disease risk status and initiate preemptive measures before acute illness strikes.

The **Male** and **Female Panels** include the **25-hydroxyvitamin D** test to ensure the proper dose of vitamin D is being taken to achieve optimal levels. The **Male Panel** includes the **PSA** test to assess the health of the prostate gland.

This year we are able to add the **hemoglobin A1C** test to the **Male** and **Female Panels** at no extra charge. Hemoglobin A1C is a measure of long term **glucose** control. It is more accurate than **fasting glucose** alone in detecting diabetic and pre-diabetic problems.

The retail price for the many individual tests included Male or Female Blood Test Panels can be astoundingly high, but **Life Extension** members obtain them for only **\$199** during the annual **Blood Test Super Sale**.

Upon receiving your order, we send your requisition out immediately. You can walk in for your blood draw at a time during normal business hours that is convenient to you. The next page describes the many unique tests that are



included in Life Extension's Male or Female Blood Test Panels.

To order the **Male** or **Female Blood Test Panel** at these once-a-year discounted prices, call **1-800-208-3444** (24 hours/day).

For longer life,

William Faloon

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## MALE AND FEMALE BLOOD TEST PANELS

Unlike commercial blood tests that evaluate only a few disease risk factors, Life Extension's **Male and Female Blood Test Panels** measure a wide range of blood markers that predispose people to common age-related disorders. This year we are able to add the **hemoglobin A1c** test to the **Male** and **Female Panels** at no additional cost. **Hemoglobin A1c** is a measurement of long-term **glucose** control. Just look at the **huge** number of parameters included in the **Male and Female Blood Test Panels**:

### MALE PANEL

#### LIPID PROFILE

**Total Cholesterol**

**LDL** (low-density lipoprotein)

**HDL** (high-density lipoprotein)

**Triglycerides**

#### CARDIAC MARKERS

**C-Reactive Protein** (high sensitivity)

**Homocysteine**

#### HORMONES

**Free and Total Testosterone**

**DHEA-S**

**Estradiol** (an estrogen)

**TSH** (thyroid function)

**Vitamin D (25-hydroxyvitamin D)**

#### METABOLIC PROFILE

**Glucose**

**Kidney function tests:** creatinine, BUN, uric acid, BUN/creatinine ratio

**Liver function tests:** AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase

**Blood minerals:** calcium, potassium, phosphorus, sodium, chloride, iron

**Blood proteins:** albumin, globulin, total protein, albumin/globulin ratio

**Hemoglobin A1c**

NOW  
INCLUDES  
HEMO-  
GLOBIN  
A1c

#### COMPLETE BLOOD COUNT (CBC)

**Red Blood Cell count including:** hemoglobin, hematocrit, MCV, MCH, MCHC, RDW

**White Blood Cell count including:** lymphocytes, monocytes, eosinophils, neutrophils, basophils

**Platelet count**

#### CANCER MARKER

**PSA (Prostate Specific Antigen)**

### FEMALE PANEL

#### LIPID PROFILE

**Total Cholesterol**

**LDL** (low-density lipoprotein)

**HDL** (high-density lipoprotein)

**Triglycerides**

#### CARDIAC MARKERS

**C-Reactive Protein** (high sensitivity)

**Homocysteine**

#### HORMONES

**Progesterone**

**DHEA-S**

**Free and Total Testosterone**

**Estradiol** (an estrogen)

**TSH** (thyroid function)

**Vitamin D (25-hydroxyvitamin D)**

#### METABOLIC PROFILE

**Glucose**

**Kidney function tests:** creatinine, BUN, uric acid, BUN/creatinine ratio

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**Blood minerals:** calcium, potassium, phosphorus, sodium, chloride, iron

**Blood proteins:** albumin, globulin, total protein, albumin/globulin ratio

**Hemoglobin A1c**

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A1c

#### COMPLETE BLOOD COUNT (CBC)

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**White Blood Cell count including:** lymphocytes, monocytes, eosinophils, neutrophils, basophils

**Platelet count**

Non-member retail price: \$481 • Special Member Discount Price: **\$199**

**Blood Test Super Sale – April 1 through June 3, 2013.**

To obtain these comprehensive **Male** or **Female Panels** at these low prices, **call 1-800-208-3444 to order your requisition forms.**

Then—at your convenience—you can visit one of the blood-drawing facilities provided by LabCorp in your area. (Restrictions apply in NY, NJ, RI, MA, MD)



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# ARE YOU GETTING Curcumin's BENEFITS?



## How Much Curcumin Are You Absorbing?

**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:<sup>1,2</sup>

- Nearly twice 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 extract<sup>3</sup> provided powerful support for heart health.

## Unrivalled 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 concentration** in the blood than standard curcumin.<sup>4</sup>

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.**



Item # 00407

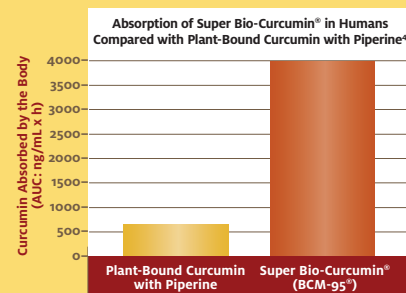
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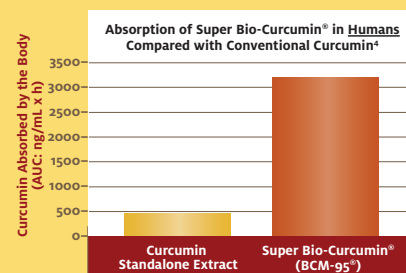
**CAUTION:** Do not take if you have gallbladder problems or gallstones. If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

**Bio-Curcumin®** and **BCM-95®** are registered trademarks of Dolcas-Biotech, LLC.

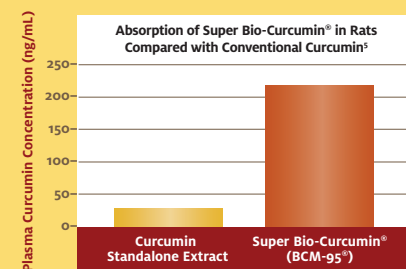
U.S. Patent Nos. 7,883,728, 7,736,679 and 7,879,373.



**Chart 1.** Super Bio-Curcumin® (BCM-95®) showed 6.3 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with plant-bound 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).

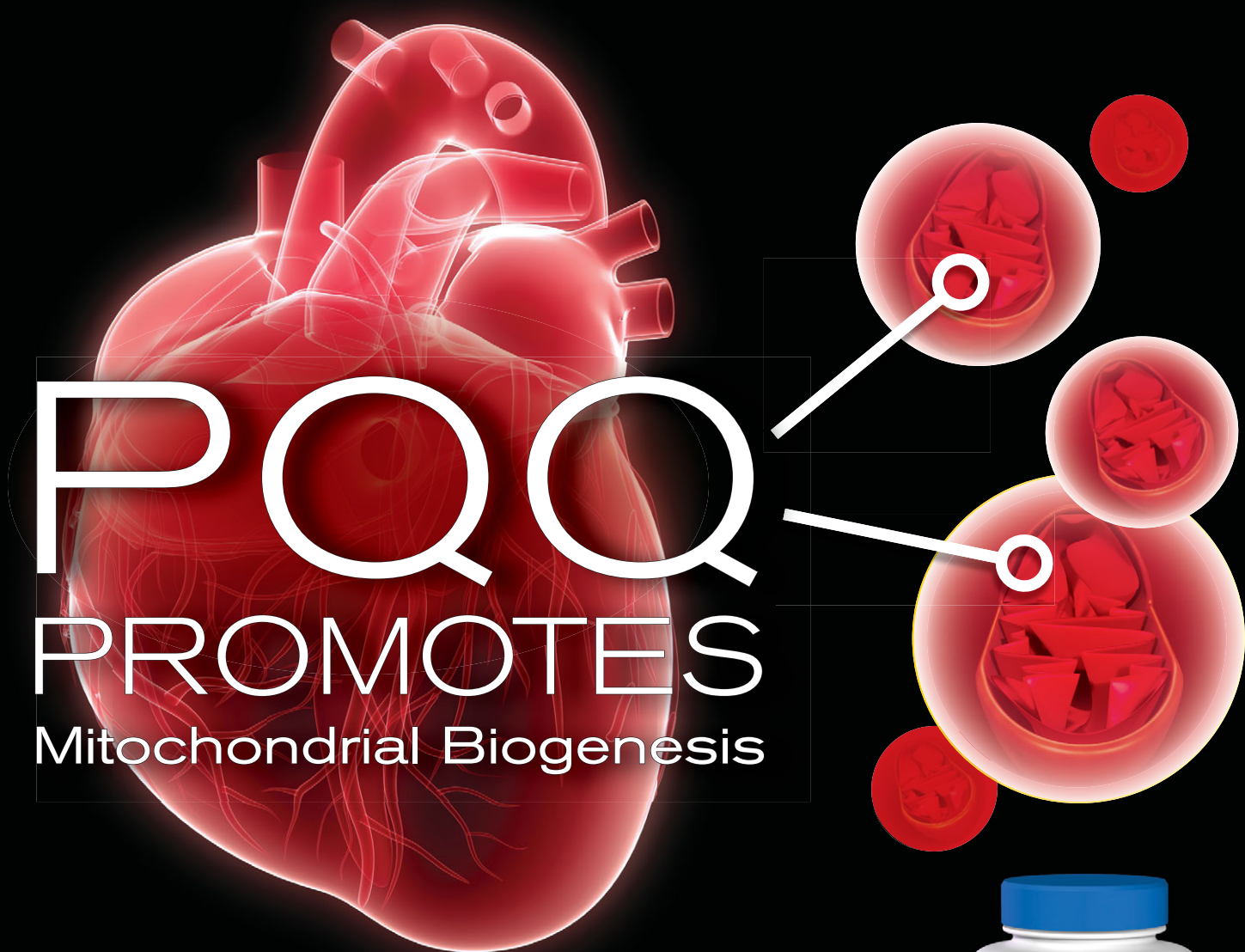


**Chart 2.** Super Bio-Curcumin® (BCM-95®) showed 6.9 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with conventional curcumin (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin absorbed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



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

**To order Super Bio-Curcumin®**  
**call 1-800-544-4440**  
**or visit [www.LifeExtension.com](http://www.LifeExtension.com)**



# PQQ

## PROMOTES

### Mitochondrial Biogenesis

### Critical Importance of Mitochondria

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.<sup>1-6</sup>

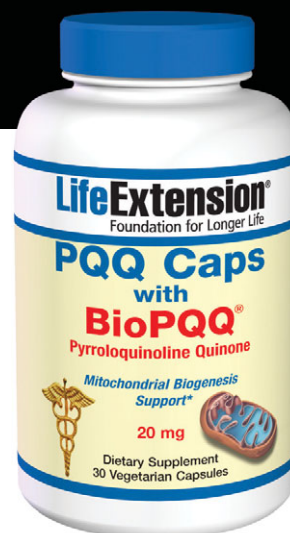
In an unprecedented breakthrough, a compound called **PQQ** (*pyrroloquinoline quinone*) has been shown to support **mitochondrial biogenesis**—the spontaneous generation of **new mitochondria** in aging cells.<sup>7</sup>

**PQQ** is available as a low-cost dietary supplement.

**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 overall health, especially as we age.<sup>8-14</sup> Energy-intensive organs like the heart and brain are *dense* with mitochondria.

Until recently, the only 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.



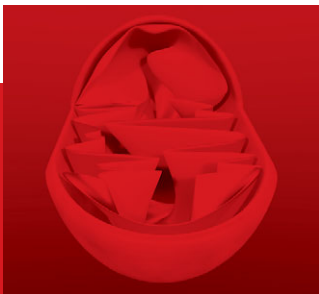
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## The Ultimate Cell Rejuvenator

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.<sup>15</sup>
- **Favorably modulates gene expression.** PQQ activates *genes* that promote formation of **new mitochondria**<sup>7</sup>—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**.<sup>16</sup>
- **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 support 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 and cognitive function—alone and in combination with CoQ10.<sup>17,18</sup> 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.<sup>19</sup>

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.<sup>20</sup>

## 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 unique fermentation process. The result is the highest quality PQQ available on the market today called **BioPQQ®**.

A bottle containing **30 20 mg** vegetarian capsules of **PQQ Caps with BioPQQ®** retails for \$40. If a member buys four bottles, the price is reduced to **\$27** per bottle.

The recommended daily dose for **PQQ** is **20 mg**. Those taking **Mitochondrial Energy Optimizer** or **Mitochondria Basics** only require an additional **10 mg** of **PQQ** since these formulas already provide **10 mg** of **PQQ**. The retail price for **30 10 mg PQQ** caps is \$24. If a member buys four bottles, the price is reduced to only **\$16.50** per bottle. (Item #01500)

**BioPQQ®** is a registered trademark of MGC (Japan).

**To order PQQ Caps with BioPQQ® standalone or any other PQQ-containing formula call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

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# SUPPORT ENDOTHELIAL HEALTH FOR MAXIMUM SEXUAL PERFORMANCE

Overlooked in the effort to support **sexual function** in aging men is the health of the **vascular system**. Blood flow through the delicate lining of the arteries (the **endothelium**) is essential to sexual arousal, so it should come as no surprise that **endothelial function** is closely associated with male sexual capacity.<sup>1</sup>

**Life Extension®** has discovered supportive clinical research for a scientifically validated, dietary supplement formula to promote **endothelial function** and **blood flow** to the place men need it most—for maximum performance.

The ingredients found in **Prelox® Natural Sex for Men®** have yielded compelling and highly satisfactory results in **five independent clinical studies**.<sup>2-6</sup>

Our analysis also confirms that unlike some performance enhancement supplements marketed as “natural,” **Prelox® Natural Sex for Men®** is not adulterated with trace amounts of prescription drugs.

## A Powerful Synergy to Support Sexual Health

The patented blend of the following ingredients positively affects the male physiology in three ways, to provide optimal support:

1. **PYCNOGENOL®** (standardized French maritime pine bark extract) activates **endothelial nitric oxide synthase** (eNO-S),<sup>7</sup> the enzyme required to make **nitric oxide**. Nitric oxide (NO) *relaxes* the vessels that enable efficient blood flow—the key to healthy male sexual activity and overall vascular health. Pycnogenol® further amplifies this relaxing effect by extending the amount of time nitric oxide remains in the bloodstream.
2. **L-ARGININE** is the biological precursor to nitric oxide synthesis in the endothelium.<sup>7</sup> It interacts **synergistically** with Pycnogenol® to sustain nitric oxide levels sufficient for healthy sexual function.
3. **ICARIIN**—from a natural botanical extract used in traditional Chinese medicine—has been shown to **deactivate** the enzyme normally responsible for winding down male sexual response, further promoting sustained activity.<sup>8</sup> Prelox® Natural Sex for Men® contains a standardized extract providing a proprietary form of high-quality icariin.

The suggested dose of two Prelox® Natural Sex for Men® tablets each day provides:

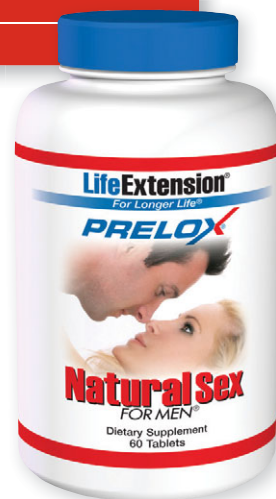
<b>Prelox® Proprietary Blend</b>	<b>1440 mg</b>
L-Arginine HCl, Aspartic Acid, Pycnogenol® Dried French Maritime Pine ( <i>Pinus pinaster</i> ) Extract (bark)	
<b>ICARIIN</b> [Natural Sex® <i>Epimedium sagittatum</i> Extract (aerial parts)]	<b>60 mg</b>

A 60-tablet bottle of **Life Extension® Prelox® Natural Sex for Men®** retails for \$52. If a member buys four bottles, the price is reduced to just **\$36 per bottle**.

### References

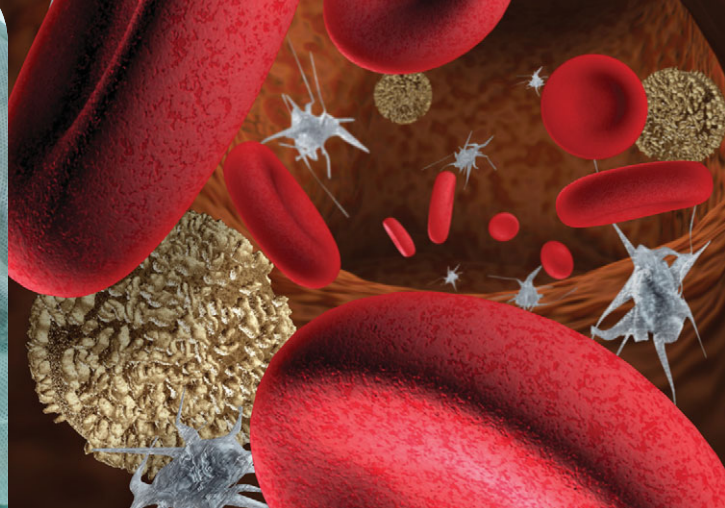
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Item # 01373

To order Prelox® Natural Sex For Men®, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



## IN THE NEWS

### Higher Omega-3 Blood Levels Associated with Lower Risk of Macular Degeneration

An article published in *The Journal of Nutrition* reports an association between high omega-3 levels and a reduced risk of age-related macular degeneration in older men and women.\*

The investigation included 963 participants in *The Antioxydants Lipides Essentiels Nutrition et Maladies Oculaires Study* of residents of Bordeaux, France aged 73 and older. Blood samples collected between 1999 and 2001 were analyzed for plasma alpha-linolenic acid and the long-chain omega-3 fatty acids eicosapentaenoic acid (EPA), docosapentaenoic acid (DPA), and docosahexaenoic acid (DHA). The subjects underwent eye examinations during 2006-2008 and were followed for an average of 31 months.

Having a higher level of total omega-3 fatty acids was associated with a decreased adjusted risk of macular degeneration in this age group in comparison with lower omega-3 levels.

**Editor's Note:** When the effects of individual omega-3 fatty acids were separately analyzed, higher levels of alpha-linolenic acid and DHA were found to be significantly protective.

—D. Dye

\* *J Nutr.* 2013 Feb 13.

### Insulin Use by Diabetics Associated with Greater Risk of Dying over a Decade Compared to Other Diabetic Therapies

In *The Journal of Clinical Endocrinology & Metabolism*, Welsh researchers report an increased risk of adverse effects, cancer, and death over a ten-year period among diabetics treated with insulin in comparison with other treatments.\*

Craig J. Currie of Cardiff University and his associates evaluated data from the UK General Practice Research Database, 2000-2010 for 84,622 patients with type II diabetes who received glucose-lowering drugs. Subjects were treated with metformin, sulfonylurea drugs, insulin, metformin plus sulfonylureas, or metformin and insulin for no less than 180 days.

Compared with those who used metformin alone, treatment with insulin by itself was associated with an **80%** greater risk of experiencing either an initial adverse cardiac event or cancer, or death from any cause during the decade examined, and for insulin combined with metformin, the risk was **31%** higher.

**Editor's Note:** Among those with no prior history of the events, insulin monotherapy was associated with nearly twice the risk of heart attack, a **73.6%** higher risk of major adverse cardiac events, a **43.2%** greater risk of stroke, a **43.7%** greater risk of developing cancer, **3.5 times** the risk of kidney complications, and more than twice the risk of neuropathy or dying from any cause in comparison with the risks experienced by those who used metformin.

—D. Dye

\* *Clin Endocrinol Metab.* 2013 Jan 31.





## Metformin Associated with Reduced Cancer Risk

A group of scientists from the Department of Epidemiology and Health Statistics, Shandong University, People's Republic of China, recently performed a meta-analysis to assess the effect of metformin intake on cancer incidence and mortality.\*

MEDLINE, ISI Web of Science, and EMBASE databases were researched and relevant reviews were examined. Meta-analysis was applied to calculate the summary relative risk and their 95% confidence intervals. Sensitivity analysis was conducted to assess the robustness of the pooled estimator. According to the eligibility criteria, 37 studies comprising 1,535,636 participants were selected in terms of intervention and data of cancer incidence or mortality.

The scientists concluded that metformin can reduce the incidence of overall cancer, liver cancer, pancreatic cancer, colorectal cancer, and breast cancer as well as the mortality of overall cancer, liver cancer, and breast cancer. No beneficial effect on prostate cancer incidence was found for metformin intake in the meta-analysis.

—M. Richmond

\* *Cancer Epidemiol.* 2013 Jan 23.



## Elevated C-Reactive Protein Levels Linked to Macular Degeneration

A recent study published in *JAMA Ophthalmology* adds to the evidence that elevated levels of high-sensitivity C-reactive protein (hsCRP) predict future risk of age-related macular degeneration (AMD).\*

To investigate the relationship between hsCRP and future risk of AMD in US men and women, the scientists pooled analysis of prospective nested case-control data from the Women's Health Study and 4 other cohorts, the Physicians' Health Study, Women's Antioxidant and Folic Acid Cardiovascular Study, Nurses' Health Study, and Health Professionals Follow-up Study.

After identifying 647 cases with the proper matched controls, the scientists measured hsCRP in baseline blood samples. They used conditional logistic regression models to examine the relationship between hsCRP and AMD and pooled findings using meta-analytic techniques.

Overall, these pooled findings from 5 prospective cohorts add further evidence that elevated levels of hsCRP predict greater future risk of AMD. This information might shed light on underlying mechanisms and could be of clinical utility in the identification of persons at high risk of AMD who may benefit from increased adherence to lifestyle recommendations, eye examination schedules, and therapeutic protocols.

—M. Richmond

\* *JAMA Ophthalmol.* 2013;Feb7;1-7.

## Tea Polyphenols May Have Positive Effects on Stomach Ailments and Inflammation

A group of German scientists recently examined the effect of tea flavonoids on stomach illnesses. Tea flavonoids belong to the large group of polyphenols and display antioxidative, anti-inflammatory, and anti-neoplastic activities. These phytochemicals are xenobiotics and are synthesized by tea plants such as *Camellia sinensis* and *Camomilla recutita*. These botanicals exhibit in vivo activities similar to that of biologicals which are widely used for chronic inflammatory diseases (rheumatoid arthritis, chronic inflammatory bowel disease).

Epigallocatechin gallate (EGCG) and apigenin from these plants inhibit cytokines, chemokines, and activated immune cells in vivo and in vitro.\* Clinical disorders with induced inflammatory pathways could benefit from flavonoid treatment. Dietary supplementation with specific tea-flavonoids could be used for Crohn's disease, ulcerative colitis, and irritable bowel syndrome. Suppression of cytokine production could ultimately lead to inhibition of carcinogenesis. This mechanism could explain why flavonoids are effective in the prevention of intestinal neoplasia. The scientists concluded that more studies using tea flavonoids should be conducted in controlled, randomized clinical studies.

—M. Richmond

\* Available at: <http://www.ncbi.nlm.nih.gov/pubmed/23233307>. Accessed February 21, 2013.





### Erectile Dysfunction Signals Increased Risk of Dying Over 2.8 Year Period

A study published in *PLOS Medicine* revealed a greater risk of heart disease and death from any cause over a 2.8 year average follow-up period among men experiencing erectile dysfunction (ED).\*

Australian researchers analyzed data from 95,038 men who participated in the 45 and Up Study. Erectile dysfunction was graded as none, mild, moderate or severe based on questionnaire responses. Hospital data reported 7,855 subsequent cardiovascular disease admissions among the current study's subjects over a 2.2 year average period, and 2,304 deaths were documented over 2.8 years of follow-up.

Among men who did not have previous cardiovascular disease diagnoses, those classified as having severe ED had a **60%** greater risk of ischemic heart disease, an eight times greater risk of heart failure, a **92%** higher risk of peripheral vascular disease and a **93%** greater chance of dying over follow-up in comparison with men who did not report ED.

**Editor's Note:** For those with previous cardiovascular disease diagnoses, the risk of ischemic heart disease was **70%** higher, heart failure risk was **4.4 times** greater, peripheral vascular disease risk was **2.46%** higher and the risk of dying was more than twice as high over follow-up.

—D. Dye

\* *PLOS Medicine*. 2013 Jan 29.

### Beneficial Effect of Vitamin and Mineral Supplementation on Mood

People who consume vitamin and mineral supplements appear to be in a better mood than nonusers according to the results of a meta-analysis published in *Psychosomatic Medicine: Journal of Biobehavioral Medicine*.\*

Researchers at the University of Swansea analyzed eight placebo-controlled trials that evaluated the effects of multivitamin and mineral supplements on aspects of mood in a total of 1,292 healthy men and women. Stress, mild psychiatric symptoms, anxiety, depression, elation, perceived energy levels, confusion, and hostility were among the aspects of mood evaluated in the trials before and after treatment.

Supplemented subjects had a **65%** lower risk of perceived stress compared to those that received a placebo. The analysis uncovered a **70%** lower risk of mild psychiatric symptoms, a **68%** lower risk of anxiety, a **73%** reduction in experiencing fatigue and a **77.25%** lower risk of confusion among supplemented participants.

**Editor's Note:** Supplements that contained high doses of B vitamins tended to elicit greater benefits than those that had lower amounts.

—D. Dye

\* *Psychosom Med*. 2013 Feb;75(2):144-53.

### Shorter Telomeres Associated with Decreased Upper Respiratory Infection Resistance

The *Journal of the American Medical Association* reports an association between decreased telomere length and greater susceptibility to the common cold.\* Telomeres are DNA complexes at the end of the chromosomes which shorten with repeated cell division, leading to cell senescence and impaired function.

The study included 152 men and women 18 to 55 years old. Blood samples were analyzed for telomere length of four types of leukocytes (white blood cells), and participants were quarantined for six days. Nasal drops containing a rhinovirus were administered after the first 24 hours of quarantine, and the subjects were monitored for the remaining period.

Sixty-nine percent of the participants were determined to have been infected with the virus and clinical illness developed in **22%**. Beginning at the age of 22, shorter telomere length of any of the white blood cell types examined was associated with a greater risk of infection, with the risk increasing with greater age.

**Editor's Note:** A variety of white blood cell known as CD8CD28- was found to be the type of leukocyte in which decreased telomere length was associated with a significant increase in the risk of clinical illness. For those whose CD8CD28- cells had the shortest telomeres, the rate of clinical illness was twice that of subjects whose telomere length was longest. "These cells are important in eliminating infected cells and those with shorter telomeres in the CD8CD28- cell population may be at greater risk for infection because they have fewer functional cells available to respond to the virus," Dr. Sheldon Cohen, a scientist with the study said.

—D. Dye

\* *JAMA*. 2013;309(7):699-705.

## Decreased Vitamin D Levels Linked to Depression and Panic Disorders

In an article that appeared in *Clinical Nutrition*, London researchers report an association between reduced vitamin D levels and an increased risk of panic disorder and depression.\*

The study included 5,966 men and women enrolled in the 1958 British birth cohort, which consisted of 18,558 individuals born in March 1958, who were followed to the age of 50 years. Blood samples collected when the participants were 45 years of age were analyzed for 25-hydroxyvitamin D levels, and interviews ascertained the presence of common medical disorders including depression, anxiety, panic, and phobias. Additional questionnaires administered at 50 years of age identified and scored depressive symptoms.

Having a sufficient vitamin D level of at least **30 ng/mL** at the age of 45 was associated with a **43%** lower adjusted risk of depression and a **67%** lower risk of having panic disorder in comparison with subjects whose levels were less than **10 ng/mL**.

**Editor's Note:** When depressive symptoms at age 50 were examined, 25-hydroxyvitamin D levels ranging from **20 to 34 ng/mL** were associated with the lowest risk of depression after adjustment for several factors.

—D. Dye

\* *Clin Nutr*. 2013 Jan 21.



## Zinc Helps Balance Immune Response

The journal *Cell Reports* published the findings of Daren Knoell and colleagues at Ohio State University of an immune-regulating effect for the mineral zinc in sepsis, a systemic response to infection that frequently causes death in intensive care unit (ICU) patients.\* Zinc deficiency is estimated to occur in **40%** of older individuals: a population that is also more likely to be admitted to the ICU.

The current research involved human immune cells known as monocytes. In the immune response, a protein known as nuclear factor kappa-beta (NF-kB) is activated and enters the cell nucleus. Dr. Knoell and colleagues report that this action triggers the expression of a gene that produces ZIP8, a zinc transporter, which locates to the cell wall where it facilitates the entry of zinc from the blood. Zinc then binds another protein in the NF-kB pathway known as IKKB, which halts further activity, thereby preventing excessive inflammation such as occurs during sepsis.

**Editor's Note:** Dr. Knoell remarked that, "Without zinc on board to begin with, it could increase vulnerability to infection. But our work is focused on what happens once you get an infection – if you are deficient in zinc you are at a disadvantage because your defense system is amplified, and inappropriately so."

—D. Dye

\* *Cell Reports*. 2013 Feb 7.



## Dr. Aubrey de Grey Appears on Life Extension's Healthy Talk with Dr. Mike Smith

Dr. Aubrey de Grey is a world-renowned biomedical expert on aging. He recently joined Dr. Mike on an episode of *Healthy Talk* radio to discuss his latest discoveries from the SENS Research Foundation, a non-profit charity dedicated to combating the aging process.

His research interests encompass the characterization of all the accumulating pathogenic molecular and cellular side-effects of metabolism that constitutes aging and the design of interventions to repair that damage. He discusses with Dr. Mike his comprehensive anti-aging plan – Strategies for Engineered Negligible Senescence (SENS), which breaks aging into seven major classes of damage and identifies detailed approaches to addressing each one.

To listen, visit [www.lef.org/healthytalk](http://www.lef.org/healthytalk)

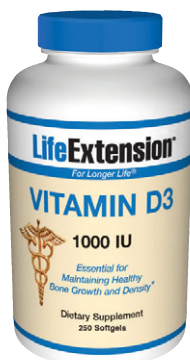
# D3

## New Vitamin D3 Softgels For Superior Absorption

Study after study confirms the vital importance of maintaining optimal levels of **vitamin D**. Research often indicates that a blood level between **50–80 ng/mL** of **25-hydroxyvitamin D** is ideal. Because people have individual requirements, Life Extension® has created a large selection of **vitamin D** supplements to ensure that you achieve your **vitamin D3** goals.

Keep in mind that you may already be getting **1,000-3,000 IU** of vitamin D in your multi-nutrient formulas.

A new vitamin D is now available in superior absorbing softgels. A recent study demonstrated that the use of one **5,000 IU** vitamin D **softgel** daily resulted in a near **30%** increase in vitamin D levels in just **60 days**.

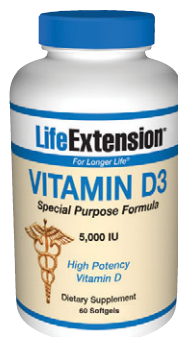


### Vitamin D3 1,000 IU 250 softgels

Retail: \$12.50  
**Four-bottle  
Member Price: \$8.44 ea.**

Commercial companies offered only **400 IU** vitamin D products when Life Extension long ago introduced a **1,000 IU** version. For most people, this 1,000 IU potency is *insufficient* to attain optimal vitamin D blood levels. For smaller individuals who obtain **2,000-3,000 IU** in their multi-nutrient formulas (and children), this potency of vitamin D may be suitable.

Item # 01751

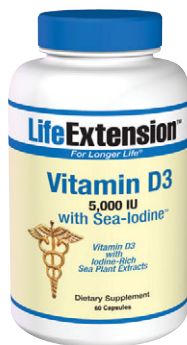


### Vitamin D3 5,000 IU 60 softgels

Retail: \$11  
**Four-bottle  
Member Price: \$7.43 ea.**

For those already obtaining **1,000-3,000 IU** of vitamin D in their multi-nutrient formulas, this **5,000 IU** potency is what many need to *achieve* optimal vitamin D blood levels.

Item # 01713

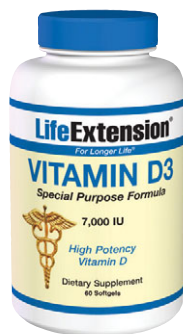


### Vitamin D3 5,000 IU with Sea-Iodine™\*\* 60 capsules (non-softgel)

Retail: \$14  
**Four-bottle  
Member Price: \$9.38 ea.**

Most people do not ingest enough vitamin D and iodine, especially those seeking to reduce their salt intake. Combining **5,000 IU** of **vitamin D3** and **1,000 mcg** of **iodine** into one capsule makes taking these two nutrients economical and convenient.

Item # 01573



### Vitamin D3 7,000 IU 60 softgels

Retail: \$14  
**Four-bottle  
Member Price: \$9.45 ea.**

Some individuals (such as those weighing more than 180 pounds) may require higher potencies of vitamin D. When combined with **1,000-3,000 IU** obtained from multi-nutrient formulas, this **7,000 IU vitamin D3** softgel should enable these individuals to attain **25-hydroxyvitamin D** blood levels above the desired range of **50 ng/mL**.

Item # 01718

**To order any of these high-potency  
vitamin D3 supplements,  
call 1-800-544-4440  
or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

**CAUTION:** Individuals consuming more than 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxyvitamin D measurement. Do not exceed 10,000 IU per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

\* If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.



### Vitamin D3 Liquid Emulsion 2,000 IU 1 ounce

Retail: \$28  
**Four-bottle  
Member Price: \$18.75 ea.**

For those rare individuals who have difficulty absorbing enough vitamin D3 from softgels, this liquid emulsion of vitamin D can be used.

Item # 00864





# Remarkable Weight Reduction with **CoffeeGenic™** Green Coffee Bean Extract (GCA™)

In a placebo-controlled, human study, subjects took **350 mg** of **green coffee extract** three times daily (before meals).

Study subjects were not asked to change their calorie intake or exercise level, but people participating in weight loss trials often do make lifestyle changes in order to increase their odds of shedding body fat.

The impressive findings, published in January 2012, noted that men and women lost an average of **17.6 pounds**—over **10%** of body weight—after **12 weeks** of **green coffee extract** supplementation! There was also an average **4.44%** reduction in body fat percentage!<sup>1</sup>

The conclusion is that **green coffee extract** supports the ability to lose weight.<sup>1</sup> The form of **green coffee bean extract** used in this successful weight loss study is **CoffeeGenic™ Green Coffee Extract (GCA™)**.

## How CoffeeGenic™ Works

The active ingredient in **green coffee bean extract** is **chlorogenic acid**.

Published studies on **chlorogenic acid** demonstrate a wide range of supportive properties related to insulin sensitivity<sup>2</sup> and to glucose formation<sup>3,4</sup> and absorption.<sup>5</sup>

Clinical research has shown that **chlorogenic acid** helps limit after-meal glucose surges, supporting healthy blood sugar levels for those already within the normal range.<sup>6</sup>

**CoffeeGenic™ Green Coffee Extract (GCA™)** provides a standardized dose of **chlorogenic acid** extracted from **green coffee beans**.



## Comprehensive Formula

The *standardized green coffee extract* in the **CoffeeGenic™ Weight Management™ with Green Coffee Extract (GCA™)** formula has been enhanced with the following nutrients to reinforce the ability to support weight-loss:

### 1. Green Tea Decaffeinated Extract

Green tea contains health-promoting *polyphenols*, including **epigallocatechin-3-gallate (EGCG)**.<sup>7</sup> A number of studies suggest it helps support healthy metabolic rate and weight loss.<sup>8-13</sup>

### 2. Iodine

This trace element is involved in the production of **thyroid** hormones that regulate the basal metabolic rate—which affects the body's rate of calorie burn.<sup>14</sup>

### 3. Chromium

Chromium plays an important role in glucose utilization and is required for the release of energy from glucose. It is now generally recognized as helping maintain healthy blood sugar levels for those already in the normal range.<sup>15-17</sup>

### 4. Integra-Lean® African Mango IGOB-131®

Fat cells secrete **leptin**, a hormone that signals our brain that we've eaten enough.<sup>18</sup> But some individuals have become resistant to *leptin*, resulting in added pounds. An extract from an African mango called *Irvingia gabonensis* has been shown to support *leptin* sensitivity—followed by weight loss and a slimming of the waistline.<sup>19,20</sup> African mango also helps the body control the rate of carbohydrate absorption from the intestines, and therefore, the caloric impact of starchy and sugary foods. And this extract supports healthy levels of adiponectin, a hormone that regulates metabolism of lipids and glucose. Research indicates it has the ability to promote weight loss.<sup>20</sup>

**To order CoffeeGenic™ Weight Management™ with Green Coffee Extract (GCA™), call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

Based on the latest research, **CoffeeGenic™ Weight Management™ with Green Coffee Extract (GCA™)** provides in each capsule:

<b>CoffeeGenic™ Green Coffee Bean Extract</b> [Standardized to 50% <i>chlorogenic acid</i> ]	<b>350 mg</b>
<b>Integra-Lean® African Mango</b> ( <i>Irvingia gabonensis</i> ) <b>proprietary extract</b> (seed)	<b>100 mg</b>
<b>Chromium</b> [as Crominex® 3+ chromium stabilized with Capros® ( <i>Phyllanthus emblica</i> ) extract (fruit) and PrimaVie® Shilajit]	<b>150 mcg</b>
<b>Iodine</b> (as potassium iodide)	<b>100 mcg</b>
<b>Green Tea decaffeinated extract</b> [ 98% polyphenols, 45% EGCG ]	<b>50 mg</b>

The suggested dose is just one capsule before each meal.

A bottle of **90 vegetarian capsules of CoffeeGenic™ Weight Management™ with Green Coffee Extract (GCA™)** retails for \$48. If a member buys four bottles, the price is reduced to **\$31.50 per bottle**.

**Caution:** This product may lower blood glucose; consult your healthcare provider before taking this product if you are taking blood glucose-lowering medication.

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

Integra-Lean® *Irvingia* is protected by U.S. Patent No. 7,537,790. Other patents pending.

IGOB-131® proprietary extract is a registered trademark of Gateway Health Alliances, Inc.

CoffeeGenic™ contains GCA™ which is a registered trademark of Applied Food Sciences, Inc.

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Item #01707



Next-Generation Formula . . .

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

## 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 potent option to provide broad-spectrum support for aging joints.

**ArthroMax™ Advanced with UC-II® and AprèsFlex™** 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, blocking it from facilitating production of pro-inflammatory leukotrienes.<sup>1,2</sup>

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

\*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

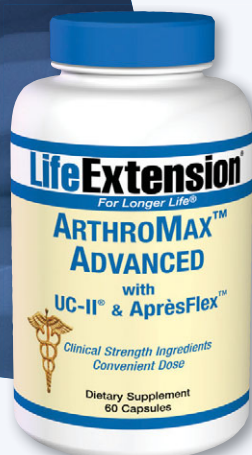


## ArthroMax™ Advanced with UC-II® and AprèsFlex™

In addition to AprèsFlex™, ArthroMax™ contains a novel form of undenatured 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 **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 2KCl (from corn)	1500 mg
AprèsFlex™ ( <i>Boswellia serrata</i> ) extract	100 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	1.5 mg



Item # 01618

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.

**To order ArthroMax™ Advanced with UC-II® and AprèsFlex™ or ArthroMax™ with Theaflavins and AprèsFlex™, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

AprèsFlex™ is a trademark of Laila Nutraceuticals exclusively licensed to PL Thomas—Laila Nutra LLC. International patents pending.  
FruiteX B® and OsteoBoron® are registered trademarks of VDF FutureCeuticals, Inc. U.S. Patent No. 5,962,049.

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™

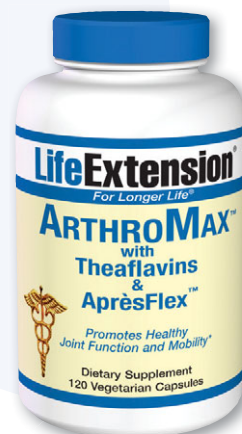
ArthroMax is also available with **Black Tea Theaflavins** (without UC-II®) to protect against immune attack in the joints via a separate mechanism.

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 and AprèsFlex™** 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® OsteoBoron®** also supports healthy bones and joints.\*

AprèsFlex™ ( <i>Boswellia serrata</i> ) extract	100 mg
Glucosamine sulfate 2KCl (from corn)	2000 mg
Methylsulfonylmethane (MSM)	1000 mg
Black Tea ( <i>Camellia sinensis</i> ) (decaf.) extract	440 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	1.5 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. **Contains corn.**



Item # 01617

### References

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BY MICHAEL DOWNEY

# Boost IMMUNE FUNCTION... While *SUPPRESSING* Over-Active IMMUNE ATTACKS

Achieving optimal immunity requires balance. While **aging** robs us of vital immune responses, hyper-immune activity creates its own cast of degenerative diseases.<sup>1-3</sup>

Autoimmune disorders, gastrointestinal ailments, and allergic and inflammatory conditions are a result of an over-active ***malfunctioning immune system***.

A plant used in Ayurvedic medicine has been shown to modulate the body's defense mechanisms.<sup>4</sup> In one randomized, double-blind human study, up to **54%** of participants using this **botanical extract** experienced symptom relief in **just 15 days** compared to only **10%** in the **placebo** group.<sup>4</sup> >







### Why Immune Modulation is Vital

We tend to think of our immune system as our protector. But in certain cases it can turn against us if it isn't effectively modulated!

**Immune** dysfunction is involved in many diseases.<sup>5</sup> While infectious diseases can stem from a weak immune response, autoimmune diseases—such as rheumatoid arthritis, nephritis, thyroiditis, and type I diabetes mellitus—are caused by an overly strong immune response. To work efficiently, your immunity needs to be balanced.

Some agents **stimulate** the immune system and can be used to help combat viral infections, or assist in the treatment of cancer.<sup>6,7</sup> Other agents **suppress** over-active immune responses and help prevent allergic reactions<sup>8</sup> or rejection of transplanted organs.<sup>9,10</sup>



Mainstream medicine often prescribes drugs such as levamisole (Ergamisol®) to increase the function of a patient's immune system, particularly natural killer cells which are important mediators of antitumor immunity.<sup>11,12</sup> In other situations, doctors prescribe drugs such as cyclosporine to decrease the activity of the immune system by interfering with the activity and growth of T cells.<sup>13</sup>

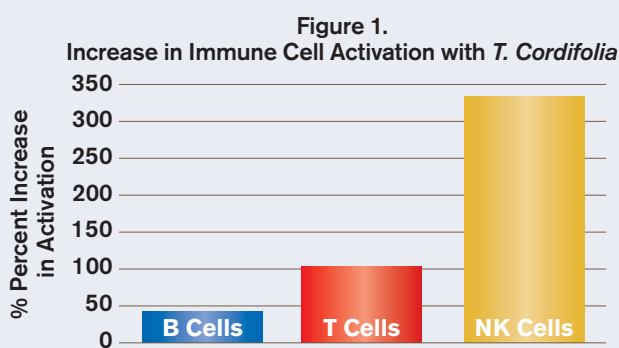
What is needed is a regulating agent to fine-tune the body's defenses—that both stimulates and suppresses immune-cell signaling, *as needed*, to maintain **homeostasis** within the immune mechanism.

### Activating Multiple Cell Signaling Receptors

Scientists seeking an immune optimizer realized that **botanical extracts** (unlike many drugs) often activate **more than one cell signaling receptor**, delivering a much broader diversity of effect.<sup>14,15</sup>

Researchers began investigating medicinal plants that have the dual-action ability to both increase and decrease immunomodulation as needed to create an optimal state of immunity.<sup>16</sup> Investigators soon zeroed in on the plant *Tinospora cordifolia*, long associated with adaptogenic and disease preventive activity.<sup>17-19</sup>

*Tinospora cordifolia* has been used in the traditional Indian Ayurvedic System of medicine to both increase immune response against diseases such as malaria, infection, and liver toxicity, and to reduce immune response in cases of inflammation, allergies, arthritis, fever, and diabetes.<sup>4,17,19-21</sup>



An active immune system can fight the entry of any number of pathogens into the body and has the capacity to prevent exposure to pathogens from actually causing disease. In cell culture studies, extracts of *T. cordifolia* have been shown to activate several classes of immune cells including B cells by **39%**, T cells by **102%**, and NK cells by **331%**.<sup>22</sup>

In short, *Tinospora cordifolia* is able to provide the body with just the right biological modulators to bring it into a balanced, healthy state.

So scientists conducted lab experiments—and later, controlled animal and human studies—to measure the various immune effects of *Tinospora cordifolia*.

### The Right Response at the Right Time

In a lab study, a novel extract of *Tinospora cordifolia* was found to powerfully activate different types of *lymphocytes*, which are important immune factors. The scientists found that it increased *NK-cell* (natural killer cell) activity by a remarkable **331%**, *T-cell* activity by **102%**, and *B-cell* activity by **39%**, all of which demonstrates increased immune activity.<sup>22</sup> (See Figure 1.)

These observations prompted the study author to categorize this botanical as “exhibiting unique immune stimulating properties.”<sup>22</sup>

Studies on animals soon followed that demonstrated additional benefits provided by *Tinospora cordifolia*.

*Tinospora cordifolia* has been shown to possess potent antioxidant capacity.<sup>23,24</sup> One research team pretreated rodents with *Tinospora cordifolia* prior to an induced heart attack. In the pretreated animals, researchers discovered a dose-dependent reduction in the size of the area of destroyed cardiac tissue (*infarct size*). Compared to untreated animals, there were decreased lipid peroxide levels in blood and heart tissue.<sup>23</sup>

In human studies, *Tinospora cordifolia* has been shown to protect the liver and modulate the immune system. A randomized, placebo-controlled study of 30 human patients undergoing surgical intervention for malignant obstructive jaundice revealed that pretreatment with *Tinospora cordifolia* completely prevented *septicemia* (a life-threatening infection of the blood), normalized the debris removal and killing capacities of the immune system's white blood cells (neutrophils), and resulted in a postoperative survival rate of **92.4%**, compared to just **40%** for the control group!<sup>25</sup> (See Figure 2 on the next page.)

To further investigate the findings of preclinical and earlier human studies, scientists launched a randomized, *double-blind*, placebo-controlled human trial. The goal was to evaluate how *Tinospora cordifolia* can improve beneficial immune modulation as an adjuvant therapy in surgical treatment of diabetic foot ulcers.

Forty-five patients completed the study trial. Among the treatment group of 23 diabetic foot ulcer patients, *phagocytosis*—the process whereby the body

surrounds and digests foreign bodies and damaged tissue resulting in new healthy growth—was increased an impressive **68%** over the placebo group. In addition, there were **23%** fewer wound *debridements* (the removal of damaged tissue) than placebo. Although not statistically significant, other study parameters—such as rate of change of ulcer area, depth and perimeter, and wound severity—showed a promising trend towards improvement<sup>26</sup>

### Impressive Confirmation in Humans

To assess the efficacy of a standardized *Tinospora cordifolia* extract in humans, patients were enlisted who suffered from allergic rhinitis.

Allergic rhinitis is a result of an **over-reactive** response of the body's immune system to allergens such as animal dander, foods, house dust, insect venom, and the pollens of grass, weed, and trees. Worldwide, allergic rhinitis affects up to **30%** of the population and is increasing in prevalence in Western societies.<sup>27,28</sup> Antihistamines, decongestants, and glucocorticoids are commonly prescribed, despite significant risks, in an attempt to lessen the symptoms.

In this trial of 71 patients diagnosed with allergic rhinitis, the test group took **300 mg** of a standardized *Tinospora cordifolia* extract **three times daily**.<sup>4,29</sup>

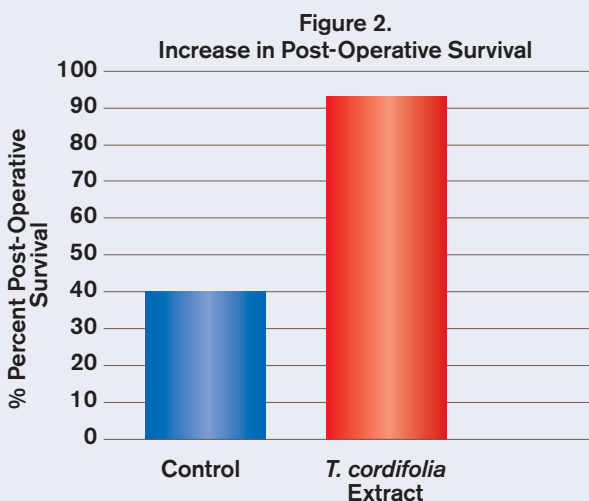


*Tinospora cordifolia*

### What You Need to Know

#### Plant Extract Provides Balanced Immune Function

- Without effective modulation, your immune system can cause disease and death by responding too weakly to pathogens or too aggressively to allergens.
- Studies show that *Tinospora cordifolia*, a plant with a long tradition in Ayurvedic medicine, can modulate the immune mechanism to deliver more appropriate responses.
- A potent extract of this immunomodulatory plant has been shown in placebo-controlled research to beneficially—and safely—regulate immune responses in humans.
- A standardized *Tinospora cordifolia* extract utilizes cell-to-cell signaling to optimally orchestrate the complex elements of the immune mechanism.



The researchers concluded that strengthening of the immune system by extracts of *T. cordifolia* may be responsible for considerable improvement in post-surgical outcome. Patients receiving the extract had a **92.4%** post-surgical survival rate versus **40%** for those not receiving the extract.<sup>25</sup>

Nasal smears of the test group found markedly reduced levels of *eosinophils*—immune components that control mechanisms associated with allergies.<sup>29</sup> The smears also showed decreased levels of *neutrophils*, the hallmark of acute inflammation. Researchers found no signs of *goblet cells*, which produce a substance that mixes with water to produce mucus.<sup>29</sup>

However, ***the effect on patient symptoms was even more striking!***



### Orchestrating a Complex Immune System

- The immune system is a broad collection of players: interacting cells, cell products, and cell-forming tissues that—ideally—protect an organism against disease.
- The key players are located at different points throughout the body: the thymus, spleen, lymph nodes, bone marrow, and even intestinal bacteria.
- These players use an assortment of cellular weapons to contribute to an effective defense: antibodies, which are specialized fighter proteins; T-cells, B-cells, and NK cells, which are lymphocytes that detect antigens and remember antigens they've met before; macrophages, which are white blood cells that engulf and digest microorganisms and various antigens; and neutrophils, eosinophils, and basophils, which are white blood cells that generate an inflammatory response.
- At times, our natural immunity can be weak or insufficiently responsive, allowing deadly pathogens to take hold and multiply.
- At other times, the natural immune mechanism can mistake harmless allergens or the body's own cells for dangerous, microbial pathogens and attack them, turning against the body it is supposed to protect.
- Mainstream medicine has no cure for deficient immunity and often attempts to treat it with antibiotics. These drugs often have dangerous side effects. They can destroy the body's beneficial intestinal bacteria, leading to bacterial overgrowth and reduced absorption of nutrients—further lowering natural immune function.
- Immune responses start to decline at around 50 years of age due to immunosenescence.
- Similarly, mainstream medicine has no cure for an oversensitive immune system and often tries to suppress the inappropriate immune response with unnatural, immunosuppressive drugs. Aside from dangerous side effects, these drugs lower the body's healthy response to illness.
- A safe and natural immunomodulator can either upregulate or downregulate the natural immune response as needed.
- An effective immunomodulator is the key to maintaining an immune system that is both strong and properly functioning.
- The medicinal plant *Tinospora cordifolia* has long been associated in Ayurvedic medicine with anti-disease benefits and immune modulation. It has been used for centuries in India to treat inflammation, arthritis, allergies, and diabetes.
- Scientists have confirmed in studies on both animals and humans the ability of *Tinospora cordifolia* to safely balance and modulate the immune system.
- It can modulate the body's immune system to maintain the precise responsiveness, sensitivity, and strength required for an optimized immune response—whether to dangerous microbes or harmless allergens.



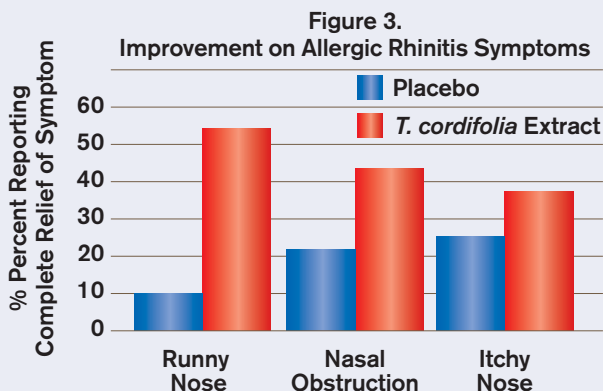
Among the subjects taking a standardized *Tinospora cordifolia* extract:<sup>4</sup>

- **54%** reported complete relief from rhinorrhea (runny nose) vs **10%** among the placebo group.
- **42%** reported complete relief from nasal obstruction vs **21%** among the placebo group.
- **39%** reported complete relief from nasal itching vs **24%** among the placebo group. (See Figure 3 below.)

And these results were observed after just **15 days!**<sup>4</sup>

Additionally, measurable physical changes were seen in those taking the *Tinospora cordifolia* extract. Swelling of structures inside the nose involved with air flow, known as nasal turbinates, can result from the *persistent inflammation* that accompanies allergic rhinitis. There are three turbinates, an upper, a middle, and a lower on each side of the nose.<sup>30</sup> Their job is to filter, warm, and humidify air inhaled through the nose.<sup>30</sup>

In the test group, after 30 days of taking a standardized *Tinospora cordifolia* extract, the number of participants with enlargement of the lower turbinate dropped by over **40%** versus only **9%** among the placebo group. Enlargement of the middle turbinate was *no longer detectable* in **any** participants taking *Tinospora cordifolia* extract.



Allergic rhinitis, a condition affecting some **2.1 billion** people worldwide, is the result of an over-reactive response of the body's immune system to allergens. Controlled human studies demonstrate significant improvement of allergic rhinitis symptoms in as few as 15 days.<sup>4</sup>

Not only were these remarkable improvements observed *promptly*—**within 15-30 days**<sup>4</sup>—but observations at the **8-week** point confirmed that the extract *continued to be both effective and safe*.<sup>29</sup>

Considering these remarkable results, there is clearly a safe and natural way to powerfully modulate the immune system to prevent and treat a broad range of chronic diseases!

## Summary

A “strong” immune system isn’t enough to achieve optimal health. An *unmodulated* immune system—one that is variously underactive and overactive—can be a factor in many diseases, ranging from cancer to diabetes and allergies.

*Tinospora cordifolia*, a plant with a long tradition in Ayurvedic medicine, has been shown in a number of scientific studies to beneficially modulate the immune system.<sup>22,24,26</sup>

After formulating a potent extract of this immunomodulatory plant, scientists confirmed in placebo-controlled research its potent ability to regulate immune responses in humans.<sup>4</sup>

*Tinospora cordifolia* orchestrates a symphony of cellular activities to maintain the precise responsiveness, sensitivity, and strength required for an **optimized** immune response—whether to dangerous microbes or harmless allergens.

The components in a standardized extract of *Tinospora cordifolia* were found to offer significant relief from key symptoms in allergic rhinitis sufferers—in **only 15 days!**<sup>4</sup> ●

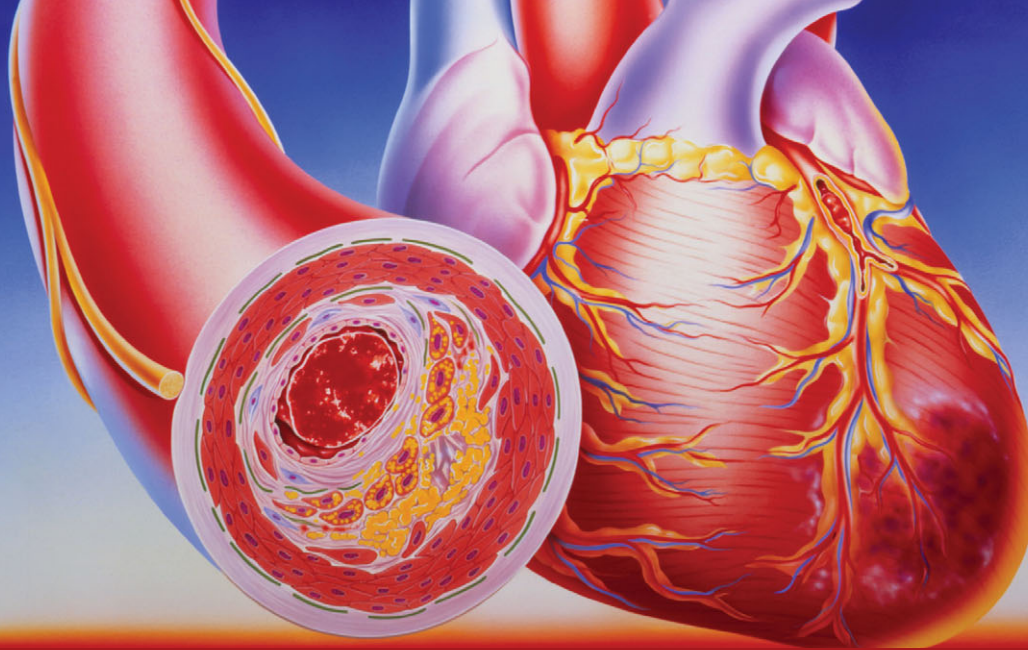
If you have any questions on the scientific content of this article, please call a **Life Extension®** Health Advisor at 1-866-864-3027.

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# ENHANCE Heart Health

The reason for many circulatory problems is the breakdown of endothelial function and structure.

Today, there are nutrients that have been clinically shown to help maintain healthy endothelial function and arterial circulation. **Endothelial Defense™ with GliSODin®** provides potent nutrients to support endothelial health: *standardized pomegranate* and an orally active form of **superoxide dismutase**.

While both of these components have been clinically shown to help with blood flow and age-related changes in endothelial function, Life Extension® has made the best endothelial product even more powerful by adding **Full-Spectrum Pomegranate™**, which includes active constituents from the **seed** and **flower** in addition to the pomegranate **fruit**.<sup>1-7</sup>

**The daily serving of 2 softgels of Endothelial Defense™ with Full-Spectrum Pomegranate™ contains:**

<b>Superoxide Dismutase/Gliadin Complex</b> (GliSODin®) [SOD (Superoxide Dismutase) Enzyme Activity = 500 IU]	<b>500 mg</b>
<b>POMELLA® Pomegranate</b> ( <i>Punica granatum</i> ) <b>Extract</b> (fruit) [std. to 30% punicalagins (120 mg)]	<b>400 mg</b>
<b>Pomegranate</b> ( <i>Punica granatum</i> ) <b>5:1 Extract</b> (fruit)	<b>100 mg</b>
<b>Proprietary Pomegranate Blend</b> ( <i>Punica granatum</i> ) [flower extract and seed oil (standardized to 22% (30 mg) punicic acid)]	<b>137.5 mg</b>

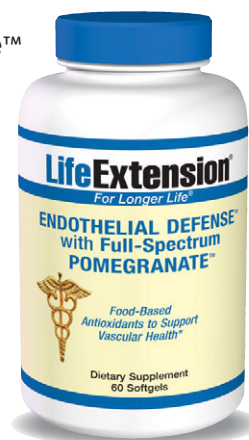
POMELLA® Extract is covered under U.S. Patent 7,638,640. POMELLA® Extract is a registered trademark of Verdure Sciences, Inc. Isocell SA, France is the owner of US Patents Nos. 6,045,809 and 6,426,068B1 and the registered trademark of GliSODin®.

**Contains soybeans and wheat.**

## Next-Generation Pomegranate Power

The unique blend of **pomegranate flower extract** and **seed oil** in **Endothelial Defense™ with Full-Spectrum Pomegranate™** contains potent polyphenols that provide support for youthful **lipid** and **glucose** metabolism, and help with **inflammatory factors**.<sup>8</sup>

A bottle containing 60 softgels of **Endothelial Defense™ with Full-Spectrum Pomegranate™** retails for \$56. If a member buys four bottles, the price is reduced to just **\$39** per bottle.



Item # 01498

**To Order Endothelial Defense™  
with Full-Spectrum Pomegranate™,  
call 1-800-544-4440 or  
visit [www.LifeExtension.com](http://www.LifeExtension.com)**

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NEW

# Extraordinary Enzymes

*Digestive Support That Does Not Promote Glucose Spikes*

Human studies suggest that supplementary **enzymes** may improve digestion and help minimize post-meal **glucose** surges.<sup>1,2</sup>

Since proteins, plant fibers, and fats are broken down differently, one needs the proper spectrum of **enzymes** for **optimal digestion**.

A new **multi-enzyme formula** facilitates both optimal nutrient absorption and broad relief from digestive discomforts without promoting after-meal **glucose** surges.<sup>2,3</sup>

## TWELVE PREMIUM ENZYMES

**Extraordinary Enzymes** provides a potent array of **protease**, **cellulase**, and **lipase** enzymes specially formulated to adapt to a variety of stomach acid pH conditions and powerfully support digestion.

With a **total of twelve different enzymes**, this unique formula supports the digestion of just about *any* food that may pose a problem for you—whether a protein, fiber, or fat.

**Extraordinary Enzymes** provides a blend of powerful enzymes to help your system convert a variety of foods to energy and readily absorb the nutrients in the foods you consume. This formulation may enhance protein content in your body and allow for better fat utilization.<sup>4,5</sup>

Together, these enzymes work by an all-natural, synergistic process to help provide nutritional support for a healthy digestive system.

The twelve enzymes of one capsule in value-priced **Extraordinary Enzymes** are:

<b>Protease SP</b> ( <i>Bacillus sp.</i> , <i>Aspergillus oryzae</i> )	<b>97,000 HUT</b>
<b>Protease S</b> ( <i>Aspergillus melleus</i> )	<b>10,500 PC</b>
<b>Acid Protease</b> ( <i>Aspergillus niger</i> )	<b>10 SAPU</b>
<b>Lipase</b> ( <i>Candida rugosa</i> , <i>Rhizopus oryzae</i> , <i>Aspergillus niger</i> )	<b>4,000 FIP</b>
<b>Cellulase</b> ( <i>Trichoderma longibrachiatum</i> )	<b>2,400 CU</b>
<b>Trypsin</b> (Porcine)	<b>20,000 USP</b>
<b>Chymotrypsin</b> (Porcine)	<b>3,336 USP</b>
<b>Phytase</b> ( <i>Aspergillus niger</i> )	<b>20 FTU</b>
<b>Beta-Glucanase</b> ( <i>Trichoderma longibrachiatum</i> )	<b>30 BGU</b>
<b>Hemicellulase</b> ( <i>Aspergillus niger</i> )	<b>4,000 HCU</b>
<b>Pectinase</b> ( <i>Aspergillus niger</i> )	<b>50 endo-PGU</b>
<b>Xylanase</b> ( <i>Trichoderma longibrachiatum</i> )	<b>600 XU</b>
<b>Total Nutrient Absorption Blend</b>	<b>200 mg</b>



## WHAT'S NOT IN EXTRAORDINARY ENZYMES?

Unlike commercial digestive enzyme supplements, **amylase** is intentionally left out of **Extraordinary Enzymes**. The reason is that **amylase** breaks down **starches** into **glucose** that is rapidly absorbed into the bloodstream.<sup>2</sup>

**Extraordinary Enzymes** facilitates the healthy breakdown of plant fibers that cause people to avoid healthy vegetables because of digestive discomforts.

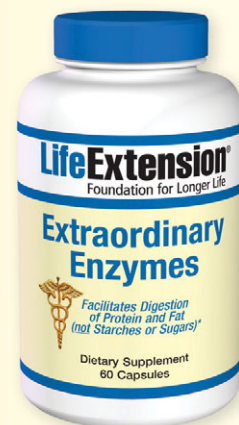
Most people will take one capsule before the two heaviest meals, which provides **400 mg** of natural digestive enzymes each day.

A bottle of 60 capsules of **Extraordinary Enzymes** retails for \$26. If a member buys four bottles, the price is reduced to **\$18** per bottle.

Contains milk, soybeans, tree nuts (coconut), and wheat.

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To order Extraordinary Enzymes, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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# IMMUNE MODULATOR WITH **TINOFEND®**

*For a Balanced Immune Response!*

Successful aging is often dependent on a dynamic immune system. But just having a “strong” immune system isn’t enough.<sup>1</sup>

A healthy and youthful body requires balanced immune-cell signaling to maintain effective and responsive immunity.<sup>1</sup>

That’s why Life Extension® now offers **Immune Modulator with Tinofend®**, a botanical extract that has been shown to support a normal, *modulated* immune response.<sup>2-11</sup>

## TARGETED IMMUNE SUPPORT

The plant known as *Tinospora cordifolia* has a long tradition of use in Ayurvedic medicine.<sup>12,13</sup>

**Tinofend®** is a standardized extract of active compounds that work synergistically<sup>5,11</sup> to provide immune-modulatory support.<sup>2-11</sup> A double-blind, placebo-controlled clinical trial on humans found that **Tinofend®** produced significant changes in several immune parameters that are known to help support healthy, immune system **modulation**.<sup>10</sup>

## MULTIPLE MECHANISMS

**Tinofend®** promotes optimal immune health in three ways:

- Helps support the activity that regulates immune response and enhances the function of protective cells called *macrophages*.<sup>4,11</sup>
- Helps limit the number of *eosinophils* (type of white blood cell) already within normal range.<sup>10</sup>
- Provides *polysaccharides* to help optimize the immune system’s normal defenses, including *neutrophil* (type of white blood cell) function.<sup>5,10</sup>

## IMMUNE MODULATION

**Immune Modulator with Tinofend®** provides the versatile *Tinospora* compounds shown to help maintain the *balanced* cellular responsiveness, sensitivity and strength of an optimized and **properly-modulated** immune response.<sup>2-11</sup>

**The suggested daily dose of 2 capsules of Immune Modulator with Tinofend® provides:**

<b>Tinofend®</b> ( <i>Tinospora cordifolia</i> ) extract (stem)	<b>900 mg</b>
[std. to 20% polysaccharides (180 mg)]	

A bottle of 60 vegetarian capsules of **Immune Modulator with Tinofend®** retails for \$17. If a member buys four bottles, the price is reduced to **\$11.25** per bottle.

Tinofend® is a registered trademark of Verdure Sciences, Inc.



Item #01704

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**To order Immune Modulator with Tinofend®, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com).**



BY STEVEN CORTEZ

VITAMIN C

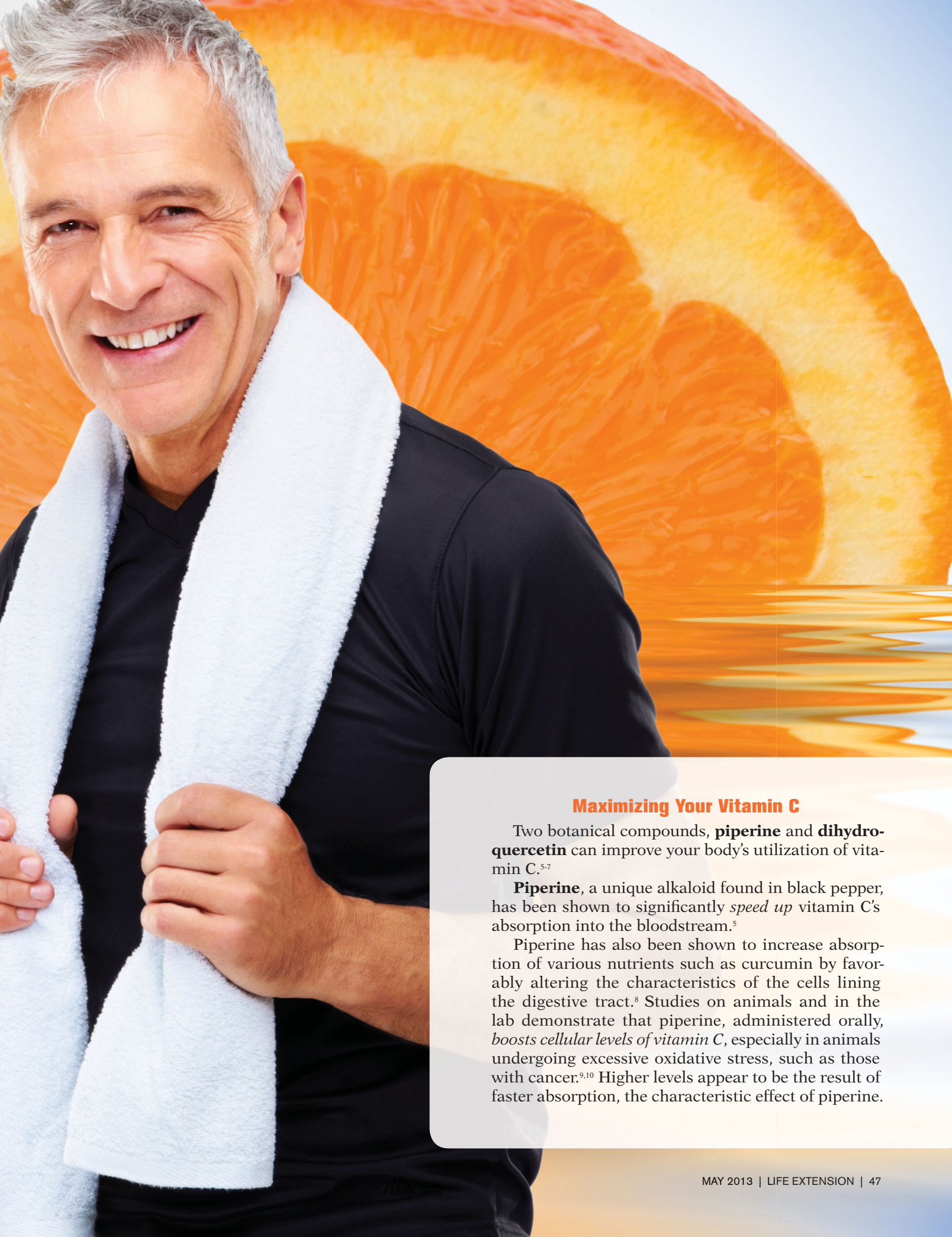
# A *Better* Form of **VITAMIN C**

Even though humans cannot synthesize vitamin C, every tissue and cell in our body needs this nutrient for healthy growth and repair.<sup>1,2</sup>

Maintaining optimal levels of vitamin C is difficult because it is water soluble and cannot be stored in the body.<sup>3</sup> This inability to maintain high vitamin C levels is recognized by researchers as limiting its potential benefit, especially with regard to chronic illness.<sup>4</sup>

For years, scientists have been looking for ways to boost the impact of each dose of vitamin C. Fortunately, a method has been discovered to increase the *speed* at which vitamin C is absorbed.<sup>5</sup> Reaching peak concentrations faster offers the edge your body needs to optimize its exposure to vitamin C following each dose. >





### Maximizing Your Vitamin C

Two botanical compounds, **piperine** and **dihydroquercetin** can improve your body's utilization of vitamin C.<sup>5-7</sup>

**Piperine**, a unique alkaloid found in black pepper, has been shown to significantly *speed up* vitamin C's absorption into the bloodstream.<sup>5</sup>

Piperine has also been shown to increase absorption of various nutrients such as curcumin by favorably altering the characteristics of the cells lining the digestive tract.<sup>8</sup> Studies on animals and in the lab demonstrate that piperine, administered orally, *boosts cellular levels of vitamin C*, especially in animals undergoing excessive oxidative stress, such as those with cancer.<sup>9,10</sup> Higher levels appear to be the result of faster absorption, the characteristic effect of piperine.



In a human clinical study, a piperine-containing oral vitamin C supplement was *superior* to another “enhanced” vitamin C formulation, speeding the time to peak plasma concentrations of the vitamin. This resulted in a slight but important increase in the total exposure of subjects’ bodies to vitamin C in the first 4 hours following ingestion. At 30, 60, and even at 90 minutes post-ingestion, subjects taking the piperine-enhanced formulation had significantly higher plasma vitamin C than did subjects taking the other formulation.<sup>5</sup>

By shortening the time from ingestion to peak levels, the body can reap the benefits of a given dose of vitamin C for a longer time. Given the importance of vitamin C in thousands of biochemical reactions, this apparently slight advantage may make a large difference in health outcomes.

**Dihydroquercetin** is a potent flavonoid molecule found in grape leaf extracts.<sup>11</sup> It optimizes vitamin C through a mechanism of action entirely different from piperine. Like all antioxidants, vitamin C is “used up” in the process of scavenging toxic reactive oxygen and nitrogen species.<sup>12</sup> In scientific terms, active vitamin C “reduces” oxidant molecules by donating electrons, thereby becoming oxidized (and hence, inactive) itself.

Dihydroquercetin has been shown to donate electrons back to these oxidized vitamin C molecules, essentially making them brand new and regenerating their ability to combat oxidant damage in cells and plasma.<sup>7</sup> When tested against other protective nutrients, only dihydroquercetin was capable of providing this vitamin C-regenerative effect.<sup>7</sup>

The dual effects on vitamin C of piperine (speeding absorption) and dihydroquercetin (speeding renewal) add up to a novel formulation that reaches peak plasma levels faster to keep cellular levels optimized longer.<sup>5</sup> This represents a new “harder working” form of vitamin C.

Let’s now examine the potential impact of such optimization by reviewing the latest on vitamin C’s expanding role in health promotion.

### Cardiovascular Disease

Oxidative damage plays a central role in development of heart disease and strokes, as oxidized low-density lipoproteins (LDL) accumulate and trigger inflammatory reactions within blood vessel walls.<sup>13</sup> Oxidation impairs endothelial function, the measure of blood vessels’ ability to regulate blood flow and pressure, potentially starving vital tissues (such as hard-working heart muscle) of their essential blood supply.<sup>14</sup> Aging and chronic diseases such as diabetes bring on even more oxidation and loss of normal blood vessel function.<sup>14,15</sup>

Epidemiological studies demonstrate that people with the highest blood levels and daily intakes of vitamin C are at as much as a **50%** reduced risk of developing or dying from cardiovascular diseases.<sup>16-23</sup> Men with the lowest blood levels of vitamin C have a **2.4-fold greater risk** of having a stroke compared with those having the highest levels of vitamin C. That risk is enhanced in men who had additional risk factors such as being overweight or hypertensive.<sup>24</sup> And the



risk of having high blood pressure in the first place is **22%** lower in people with the highest vitamin C intake, compared with those having the lowest.<sup>25</sup>

One study found that people who took more than **700 mg/day** of supplemental vitamin C had a **25%** lower chance of developing coronary heart disease, the precursor of a heart attack.<sup>26</sup>

Studies of vitamin C administration directly into veins or arteries in human volunteers and people with arterial disease reveal a powerful effect on **endothelial function**, demonstrating immediate and significant improvements in blood flow and blood pressure.<sup>27-30</sup> And studies of oral vitamin C supplementation at doses of **1,000 mg/day** provide evidence of reduced oxidative damage to LDL cholesterol in diabetics, a group at very high risk for cardiovascular complications.<sup>31</sup> A study of older adults, published in late 2012, showed a substantial and significant improvement in **endothelial function** following an oral dose of vitamin C, **1,000 mg**, coupled with vitamin E and alpha-lipoic acid, two other natural antioxidants.<sup>15</sup> Since it is difficult to maintain all-day optimal vitamin C blood levels, boosting the body's absorption of vitamin C and reducing its degradation, as seen with piperine and dihydroquercetin, has intriguing therapeutic potential.

### Cancer

Cancer results from the mutation of genes that regulate cellular proliferation. Some of this DNA gene damage is caused by excess oxidation. Some studies suggest that 1 in 12 cancers might be prevented by assuring higher levels of antioxidant intake.<sup>32</sup>

And indeed, some studies show that those with the highest overall antioxidant vitamin intake are protected against many forms of cancer.

The best evidence for supplementation as a cancer preventive is found in cancers of the digestive tract. Vitamin C can prevent stomach colonization with the bacterium *H. pylori*, a major cause of stomach and small intestinal cancers.<sup>33</sup> It does so, in part, by blocking an oxidant-induced enzyme the organism needs in order to set up shop in the stomach lining.<sup>33</sup>

Studies of supplementation with vitamin C, in combination with other antioxidant vitamins and minerals, demonstrate prevention of recurrent intestinal polyps (adenomas), the precursors of serious colorectal cancers.<sup>34,35</sup> Similar findings have now been reported for esophageal cancer as well.<sup>36</sup>

There's now evidence for a vitamin C protective effect in epidemiological and lab studies of breast cancer.<sup>37-39</sup> One study showed that women who supplemented with vitamin C for more than ten years had a **42% reduced** risk of developing breast cancer.<sup>38</sup> And



### What You Need to Know

#### Capitalize On the Broad Spectrum Benefits of Vitamin C

- Vitamin C is essential for 8 major enzyme systems on which life depends.
- In addition to its enzyme activity, vitamin C's antioxidant properties facilitate thousands of beneficial biochemical reactions.
- Combining vitamin C with other nutrients aids in boosting the rate of absorption in the intestine and "recharging" spent vitamin C molecules in the tissues.
- The wide spectrum of vitamin C's health benefits make optimizing its blood and tissue levels a priority; people with higher intakes and levels of vitamin C typically have lower rates of heart disease and cancer, and they enjoy stronger immune systems, are troubled less by asthma and other lung diseases, have better blood sugar control, and less bone loss to osteoporosis.
- When choosing a vitamin C supplement, aim for one that can optimize blood levels so that you get the most from your supplement.



### A Nobelism Speaks Out on Vitamin C

Albert Szent-Gyorgyi won the Nobel Prize in Physiology or Medicine in 1937 for his discovery and characterization of vitamin C. Even then, Szent-Gyorgyi understood that the vitamin had a much greater role in human biology than was recognized at the time. In his acceptance speech for the Prize, he said,

"The medical profession itself took a very narrow and very wrong view. Lack of ascorbic acid [vitamin C] caused scurvy, so if there was no scurvy there was no lack of ascorbic acid. Nothing could be clearer than this. The only trouble was that scurvy is *not a first symptom of a lack but a final collapse, a premortal syndrome* and there is a very wide gap between scurvy and full health."<sup>4</sup>

higher **vitamin C intake produced a 65% reduction in risk of cancer of the cervix.**<sup>40</sup> Even pancreatic cancer, one of the deadliest malignancies known, was shown to be **33% less** likely in those with higher blood levels of vitamin C.<sup>32</sup>

Again, dose and bioavailability of the vitamin seem to be critical; studies of vitamin C at **500 mg/day** and lower tend not to demonstrate a significant protective effect.<sup>41</sup> Furthermore, continued supplementation is a necessity; in one large clinical trial, supplementation with antioxidant vitamins including C decreased total cancer incidence and death rates, but that benefit disappeared within 5 years of stopping supplementation.<sup>42</sup>

High dose intravenous vitamin C has convincingly been shown to reduce markers of inflammation in cancer patients; we know that inflammation is critical to sustaining cancer cell reproduction and tumor growth.<sup>43</sup> If we are to realize these benefits, we need to find ways to get the most out of our oral dosing, a goal that may be obtained through strategies like combining vitamin C with dihydroquercetin and piperine.

**One important note:** While vitamin C has been shown to be a valuable adjunct to conventional cancer treatment, the antioxidant power of vitamin C is so strong that it may have the potential to interfere with certain types of chemo- and radiation therapy, both of which can rely on producing free radicals to kill malignant cells.<sup>44</sup> Due to the sensitive nature of radio- and chemotherapy administration, those who are currently undergoing chemo- or radiation therapy for a known cancer should speak with their treating oncologist regarding the best regimen and dosing of vitamin C for their individual situation.

### Diabetes

The epidemics of obesity and type II diabetes have so much in common that they can be referred to as a single entity, diabetes. Oxidative stress is one of the central features of diabetes, being imposed by both excessive fat stores and by chronically elevated (or even borderline) blood sugar levels.<sup>45</sup> Once tissue damage caused by glucose (glycation reactions) has taken place, there's yet more oxidative stress. Together these factors account for most of the complications of diabetes, including poor cardiovascular outcomes, kidney disease, and nerve damage.

There's been keen interest in the use of antioxidant vitamins to prevent diabetes's complications. Studies with high-dose intravenous vitamin C show an immediate and marked reduction in aortic stiffness and central blood pressure during periods of acutely elevated glucose in human volunteers.<sup>46</sup> That's further confirmation of the idea that reliable tissue delivery of vitamin C has protective effects.

Additional evidence for vitamin C's benefits in diabetes comes from supplementation studies demonstrating a reduction in markers of oxidative stress in obese adults, accompanied by favorable elevations in adiponectin, a protective fat-derived signaling molecule.<sup>31,47,48</sup> And vitamin C, **1,000 mg/day** plus vitamin E, **800 IU/day**, significantly reduced the after-meal memory impairment that's so common in type II diabetes, indicating that oxidative stress is involved in producing that phenomenon.<sup>49</sup>

Of course, the central concern for those with diabetes is getting control of their blood sugar. Studies show that vitamin C improves insulin sensitivity as a result of its antioxidant effects.<sup>50</sup> The combination of vitamin C with vitamin E produces a further improvement, increasing glucose utilization without creating oxidizing byproducts.<sup>48,50</sup> A further benefit of the combination is a reduction in a host of adhesion molecules that increase likelihood of blocked arteries.<sup>48</sup>

### Immune Support

Vitamin C has been the subject of endless controversy regarding its ability to prevent the common cold. Strong evidence now supports the observation that doses of about **1,000 mg/day**, taken regularly, can shorten the duration of a cold.<sup>51,52</sup>

But the beneficial effects of vitamin C go much beyond the common cold. Immune system cells of almost every variety are able to concentrate vitamin C from the blood (so long as ample vitamin C is available).<sup>52,53</sup> Cells in the immune system fight infections in part by destroying invading organisms with bursts

of oxidative activity, but that puts adjacent healthy tissue at risk.<sup>54</sup> Supplementation with bioavailable vitamin C protects normal host tissues, allowing the infecting organism to be destroyed without collateral damage.<sup>51,54</sup>

These immune-boosting functions have a clear effect on another major health concern, stomach infection with *Helicobacter pylori*, a major cause of gastritis and stomach cancer. Studies show that following eradication of the organism by antibiotics, sustained daily vitamin C supplements (**500 to 1,000 mg/day**) reduce the severity of stomach irritation and inflammation, and may help to prevent progression to stomach cancer.<sup>36,55-57</sup>

### Lung Disease

Lung tissue naturally bears the brunt of the continuous oxidant assault on the body. When oxidant damage triggers inflammation (and vice versa) in the lungs, a protective reflex called bronchospasm occurs, which we experience as asthma or chronic obstructive pulmonary disease (COPD).<sup>58</sup>

Studies show that vitamin C levels are lower in asthmatic patients, the result of excessive degradation of the vitamin as it battles oxidant damage.<sup>59</sup> High intakes of vitamin C are associated with improved lung function and a delay in the deterioration that could lead to chronic obstructive pulmonary disease.<sup>60</sup>

Asthmatic patients challenged with drugs that can trigger bronchospasm respond less severely if they are pre-treated with antioxidant vitamins C and E.<sup>61</sup> And vitamin C supplementation at **1,500 mg/day** has been shown to attenuate the severity of exercise-induced asthma attacks in patients with known asthma.<sup>62</sup>

### Osteoporosis

Bones require a strong matrix of collagen proteins in order to develop and maintain their structural integrity and proper mineralization.<sup>63</sup> Vitamin C is essential for collagen production, and epidemiologic studies link poor vitamin C intake with bone loss.<sup>63,64</sup> Animal studies reveal that vitamin C supplementation prevents post-menopausal bone loss by stimulating new bone formation.<sup>64</sup>

Human studies suggest that vitamin C reduces rates of bone resorption, the principle cause of osteoporosis.<sup>65</sup> In older men and postmenopausal women, higher vitamin C intake is associated with lower long-term bone loss.<sup>63,66</sup> This leads directly to a reduction in the risk of hip and other non-vertebral fractures in people with the highest vitamin C intake.<sup>67</sup>

Supplementation with **1,000 mg/day** of vitamin C has now been convincingly demonstrated to prevent oxidant-induced bone loss in elderly people.<sup>66</sup>





## Summary

Vitamin C is gaining ever-greater attention for its potential to reduce the impact of chronic, age-related diseases. Yet the modest doses found in conventional multi-vitamin formulas have not demonstrated protective effects.

Vitamin C's levels in the blood are under tight control, making it difficult to achieve optimal levels, even with very large oral supplement doses. That **tight control** arises from three basic mechanisms: control of absorption, control of excretion, and control of vitamin C degradation in the tissues.

Enhancing some or all of these mechanisms may allow us to push vitamin C blood levels higher than previously thought attainable.

The nutrients **piperine** and **dihydroquercetin**, acting by different mechanisms, offer just such an opportunity: piperine for optimizing vitamin C uptake and dihydroquercetin for sustaining its activity.

And enhanced bioavailability is desirable, in light of vitamin C's many known beneficial properties. Studies demonstrate that the proper dose of vitamin C supplementation can reduce cardiovascular risks, lower the threat of cancer, mitigate diabetes, boost immune function, improve lung function, and even prevent bone loss in osteoporosis. Imagine the added benefits that even a modest increase in the vitamin's serum profile could provide. ●

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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Magnesium is needed for more than **300** biochemical reactions in the body.<sup>2</sup>

Long known for its role in cardiovascular<sup>3-5</sup> and bone health,<sup>6</sup> researchers are now focusing *intensely* on magnesium's benefits for **cognitive function**.<sup>2</sup>

It is very *hard* for your body to maintain optimal levels of magnesium in the **brain**.<sup>2</sup> This is of *special concern* for maturing individuals, as magnesium deficiency increases over time.<sup>1</sup>

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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.<sup>2</sup>

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.<sup>2</sup>

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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.

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Item # 01603



Item # 01602



NEW



# NEXT-GENERATION VITAMIN C

Vitamin C efficacy can be limited because it is quickly utilized and excreted by the body.<sup>1</sup>

A novel formula sets a new standard for **rapid absorption**, enhancing the time that vitamin C is delivered to the cells for protection.

In **two** human trials at a distinguished research center **FAST-C®** was compared head-to-head with a leading premium brand of “enhanced absorption” vitamin C.<sup>2,3</sup>

Their findings validate that **FAST-C®** has faster absorption—and without greater excretion!

## The Need for Rapid Vitamin C Delivery

Vitamin C neutralizes free radicals,<sup>4,7</sup> supports biosynthesis of certain neurotransmitters,<sup>8,9</sup> and promotes production of vital tissue (collagen) that supports arterial walls, skin, and bones.<sup>7-9</sup> Vitamin C promotes immunity,<sup>7,10</sup> boosts lymphocyte glutathione levels,<sup>11</sup> and helps regenerate other antioxidants, including vitamin E.<sup>12</sup>

But because it leaves the body quickly,<sup>1</sup> capturing vitamin C’s optimal benefits has required taking supplements several times daily, *hoping* they’ll be effective without posing a risk for acid-sensitive stomachs.

The scientific community has long sought faster-absorbing vitamin C formulas.

Backed by controlled  
*human trials,*

**FAST-C®**  
COMBINES FASTER-  
ABSORBING ASCORBIC  
ACID-MINERAL BLEND  
with vitamin C  
“recycling” power.



Item# 0177

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

## The Search for Enhanced Absorption

A leading brand of “enhanced” vitamin C has been promoted claiming to increase vitamin C bioavailability. A *published* study in a top nutritional sciences journal found **no difference** in absorption speed, blood vitamin C increase, or urinary excretion between that product and ascorbic acid (vitamin C).<sup>13</sup>

The good news? A next-generation **FAST-C®** supplement has been *proven* in double-blind, human trials to have **faster absorption**—combined with equal or greater body retention!

This *breakthrough*—**FAST-C®**—is available exclusively to **Life Extension®** members. It also contains *dihydroquercetin* to enhance vitamin C’s “recycling” power.

## Next-Generation Breakthrough!

**FAST-C® with Dihydroquercetin** is the *only* vitamin C product to incorporate:

- A **proprietary** blend of alkalizing **minerals** that yields an almost completely acid-neutralized—which is better than “buffered”—vitamin C for sensitive stomachs.
- **Piperine (Bioperine®)**, a multi-patented, black pepper alkaloid that significantly accelerates vitamin C absorption, shortening the time to peak plasma concentration<sup>3</sup>
- **Dihydroquercetin**, a grape leaf derived flavonoid that donates electrons back to vitamin C molecules that have spent their electrons neutralizing free radicals—*regenerating vitamin C to work again!*<sup>14</sup>

In recognition of this breakthrough, **FAST-C®** received the prestigious **Scientific Achievement Award** from *Nutrition Business Journal*.<sup>15</sup>

## Validated Faster in Human Studies

In a soon to be journal-published article, scientists evaluated the **FAST-C®** formulation in humans. They found that in just **60 minutes** the **FAST-C®** composition generated a “significantly higher” vitamin C blood increase than the leading, enhanced-absorption vitamin C product.<sup>2</sup>

To further validate these findings, a *second* clinical trial was conducted to compare two different variations of the formula in **FAST-C®** with the leading “enhanced” brand.

One of the **FAST-C®** formulations produced higher blood concentrations of vitamin C after **30, 60, and even 90 minutes!**

Despite faster and greater rises in blood vitamin C with **FAST-C®** the amounts of vitamin C excreted in the urine were no greater than the amount excreted in the urine with the leading “enhanced” brand—which suggests similar or better vitamin C **retention** by the body.<sup>3</sup>

***FAST-C® with Dihydroquercetin—  
faster-absorbed, self-regenerating,  
harder-working.***

Take one (1) tablet once or twice daily. Do not take more than 15 mg per day of Bioperine®.

### Each tablet of FAST-C® with Dihydroquercetin provides:

<b>Vitamin C</b> (as ascorbic acid)	<b>500 mg</b>
<b>Calcium</b> (as calcium carbonate)	<b>79 mg</b>
<b>Magnesium</b> (as magnesium hydroxide)	<b>8 mg</b>
<b>Bioperine® piperine</b> [from black pepper ( <i>Piper nigrum</i> ) extract (fruit)]	<b>3 mg</b>
<b>Total Dihydroquercetins</b> [from grape ( <i>Vitis vinifera</i> ) extract (leaf)]	<b>25 mg</b>

A bottle of 120 tablets of **FAST-C® with Dihydroquercetin** retails for **\$26**. If a member buys four bottles, the price is reduced to just **\$18** per bottle.

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BY JAMES CLEMENT

# *Why Some People Live So Long!*

## Identifying What Enables Humans to Survive Past 110 in Good Health

LONGEVITY

Super-centenarians are very rare individuals. They have lived to at least **110 years** of age.

In the United States, there are approximately 54,000 centenarians (people who are **100 years** of age or older). Only about a dozen of these centenarians, however, appear to make it to 110 years old.<sup>1,2</sup>

Worldwide, only about **70** individuals have been verified to be at least 110 years of age or older.<sup>2</sup> Surviving decades longer than their peers – often in far better health – super-centenarians may hold the keys to protection from disease, decline, and early death.

As you read their individual stories you cannot help but notice that many of these extremely long-lived individuals did not take the special precautions that you, I, and other readers of this magazine follow to maximize our health. Yet many of them went their entire lives without illness, and some without ever seeing a doctor.

Sadly, most of us are not as lucky to have been born with such “super” genes.

The **Life Extension Foundation**<sup>®</sup> is helping to fund an unprecedented project to identify those genetic variations that protect super-centenarians from disease and allow them to live nearly perfectly healthy lives until just shortly before their deaths. The objective is to enable scientists to create therapies that will bring the extraordinary protective powers of super-centenarians to **everyone**. >





In May of 2011, researchers James Clement and Parijata Mackey left for Europe on a journey, partially funded by the Life Extension Foundation®, to study how super-centenarians avoid illnesses and live long, healthy lives.

These two researchers had attended multiple scientific conferences on aging. It was apparent that most life span research was done on short-lived species, such as *C. elegans*, drosophila, and mice. Human studies were largely limited to cells grown in Petri dishes, rather than studies of cells in-vivo. At the time, no one was actively collecting and analyzing large numbers of genetic and molecular profiles of humans who lived to **110 or older**.



Before their journey, James and Parijata surveyed the existing scientific literature for studies on long-lived humans. Special focus was paid to research conducted by Boston University's Tom Perls and Albert Einstein College of Medicine's Nir Barzilai. Drs. Perls and Barzilai had conducted extensive demographic and some single nucleotide polymorphism and genome-wide association studies on why these individuals lived so long without diseases.

Nir Barzilai speculated that long-lived individuals possessed genes that protected them from diseases, but neither he nor Tom Perls had been able to uncover these genes. Based on the research they had seen, James and Parijata decided that it was important to focus on individuals over the age of 105, especially men, on the basis that individuals who lived to this age would likely have these protective genes, if such existed.

James and Parijata also investigated the work of the Gerontological Research Group and the *Guinness World Book of Records*, both of which document and verify the identities of individuals claiming to be super-centenarians. Based upon various public and private resources, they then built their own research study list of hundreds of individuals over the age of 105.

### The Study's Objective

The objective of James and Parijata's current study involves a double comparison of the genomic and molecular data from extremely long-lived individuals. They first want to see what similarities super-centenarians share, and secondly compare super-centenarians with "normal" individuals, especially those who died having known illnesses, such as cancer, cardiovascular diseases, Alzheimer's, stroke, diabetes, etc.

### Heredity of Longevity: (It's Partially in the Genes)

In 1996, James Vaupel published a paper showing that, across several thousand Danish twins, approximately **20-26%** of their longevity could be attributed to genetics.<sup>3</sup> However, the mean age of the twins in that study was only 70 years—implying that these individuals likely lacked sufficient "protective genes" to have inherited "super" longevity from their parents.

The same researchers published another study of nonagenarians (persons from 90 to 99 years old) and centenarians, which noted that the discovery of genetic factors associated with exceptional longevity increases with the age of the subjects. This study, and many others, strongly suggests that the genetic



### SUPER-CENTENARIANS

Both **Christian Mortensen** (age 115) top, and **Walter Breuning** (age 114), second from top, loved their cigars.

**Dorothy Peel** (age 110) said she owed her longevity to drinking a mid-afternoon glass of sherry and an evening glass of whiskey every day (she quit smoking at age 104).

component of exceptional longevity gets larger with increasing age, and is especially high for those aged 106 years and older.

Tom Perls of Boston University has published a study suggesting that “the older you are, the healthier you’ve been.”<sup>4</sup>

Perls’ group found that the siblings of centenarians have roughly a **3.5 times greater** chance of reaching 100 years of age than siblings of non-centenarians.<sup>5</sup>

Even more astounding, the siblings of male super-centenarians have a **17-times greater** chance of living to 100 than that of the general population.<sup>5</sup>

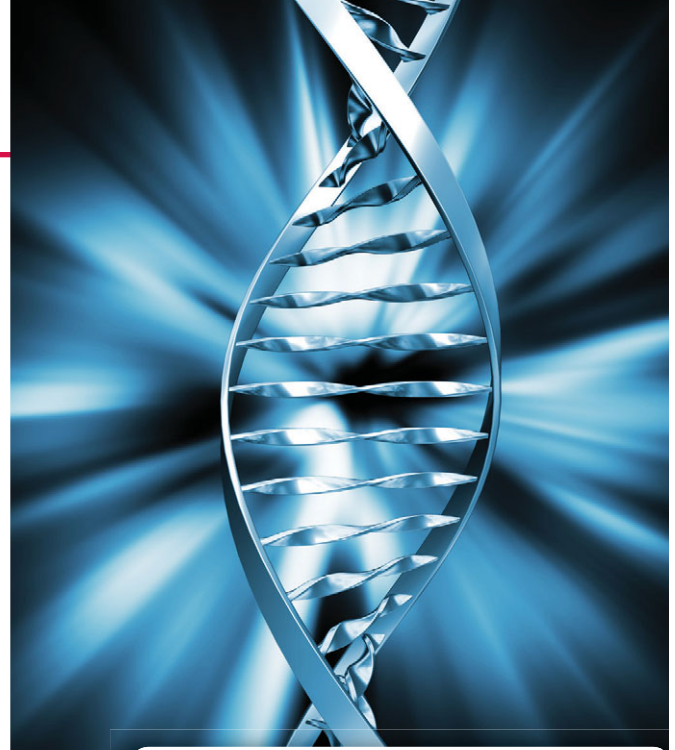
### **Whole Genome Sequencing: \$350,000 - \$99,000 - \$20,000 - \$10,000 - and Dropping**

In early 2008, Dan Stociescu became the second human in the world to buy the full sequence of his genome. Dan paid \$350,000 for this honor with the intent of helping to propel the direct-to-consumer genomics business forward.

In 2009, James Clement had his complete genome sequenced for \$99,000. By early 2010, whole-genome sequencing had dropped to \$10,000 to \$20,000 a person—if you could afford to do large batches of genomes. Sequencing costs were falling nearly an order of magnitude about every two years.

James and Parijata decided that they would spend the next few years collecting the DNA of individuals over the age of 105. This would enable them to sequence and study this precious DNA once costs had dropped to an affordable level. They approached wealthy individuals and the Life Extension Foundation® to raise money for this project, and with a very limited budget, set out to meet super-centenarians around the world.

When conducting interviews with these long-lived individuals, James and Parijata would ask about lifestyle practices and whether they had longevity in their families. It turned out that, more often than not, they had led pretty normal lives, including smoking and drinking throughout most of their lives. Only a few reported that they had been active in sports or had regularly exercised.

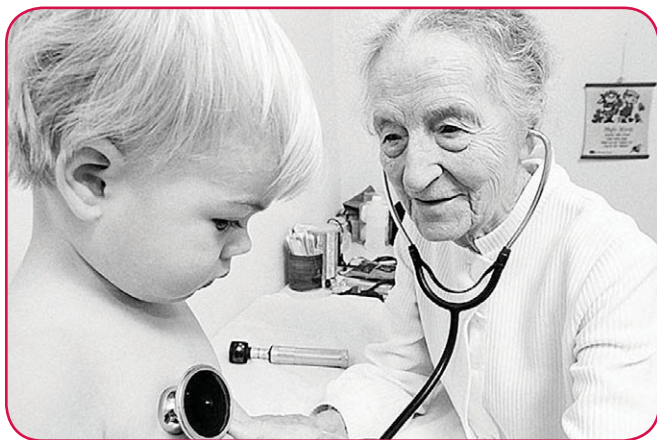


### **What You Need to Know**

#### **Uncovering the Genetics of Extreme Longevity**

- Super-centenarians are very rare individuals that have lived to at least 110 years of age.
- Worldwide, only about 70 individuals have been verified to be at least 110 years of age or older.
- Life Extension Foundation®-funded research will soon be underway to identify those genetic variations that protect super-centenarians from disease and allow them to live nearly perfectly healthy lives until just shortly before their deaths.
- Boston researchers have found that the siblings of centenarians have roughly a **3.5 times greater** chance of reaching 100 years of age than siblings of non-centenarians.
- Even more astounding, the siblings of male super-centenarians have a **17-times greater** chance of living to 100 than that of the general population.





**Dr. Leila Denmark: 1898 - 2012.  
Lived 114 years**

In March 2011, James and Parijata visited the Athens, Georgia, home of Mary Denmark Hutcherson. Mary lived with her 113-year-old mother, **Dr. Leila Denmark**.

Born February 1, 1898, Leila became a school-teacher and then a pediatrician who practiced medicine for more than 70 years. Denmark helped develop a whooping cough vaccine and wrote a well-regarded parenting book, *Every Child Should Have a Chance*, now in its 14th printing.

Leila Denmark was the only woman in her graduating class of 1928 at the Medical College of Georgia, and only the third woman to graduate from the college. As co-developer of the whooping cough vaccine in the 1920s and 1930s, she was awarded the 1935 Fisher Prize. She continued to practice until she retired in 2001. At 103, she was the oldest practicing physician in the United States. Among her many other awards, Denmark was named Atlanta's Woman of the Year in 1953.

She was among the first physicians to say that second-hand smoke posed a danger to children, and counseled that enjoying what you do and a good diet were two keys to good health.

She avoided eating too much sugar, a substance medical researchers are now beginning to suspect contributes to a number of health problems, including cancer. Those principles seemed to serve her well. Her parents died relatively young. Many of her 11 brothers and sisters — she was the third of 12 children — had heart disease, but Denmark enjoyed good health up until the last few years of her life.

Retirement came at age 103. World travel followed until age 106. She then left Alpharetta and came to Athens to live with Hutcherson, her only daughter. While there she enjoyed a few years of gardening before experiencing the first of a series of mini-strokes. This eventually led to her death at age 114.



**James "Doc" Sisnett:  
Going on 113 years**

**James Sisnett** was born in the tropical paradise of Barbados on February, 22, 1900. At nearly 113 years of age, he's the oldest man in the Western hemisphere. Visiting Sisnett on the week of his 111<sup>th</sup> birthday, James and Parijata enjoyed a celebration that attracted many of the island's top officials, including the Minister of Health. Sisnett's nearly fifty living descendants flew in from around the world.

A perpetual grin seems to constantly delight those surrounding James Sisnett. He enjoys breadfruit, cognac, and flirting with the cheery nurses at his retirement home. One of his many granddaughters remarked that he has, "the memory of an elephant, the appetite of a truck driver, and a wicked sense of humor." The next few days would prove how right she was.

Sisnett has enjoyed a remarkable bill of health throughout his life. At his birthday celebration he described the only doctor's visit of his youth. With a mischievous twinkle in his eyes (and that perpetual grin) he relayed his story. "I had a toothache when I was nine years old. I was taken to the doctor, and do you know what the doctor did? He gave me a glass of rum! A nine-year-old boy, given rum! But it worked — my tooth didn't hurt anymore."

It would be the only "medicine" he'd ever need.

Currently, Sisnett has no known illnesses, suffering only from a hearing loss — which, as his family revealed, chuckling, sometimes serves as an excuse for Sisnett to pretend not to hear if he doesn't want to listen to someone. Cataract surgery was performed successfully when he reached age 106.

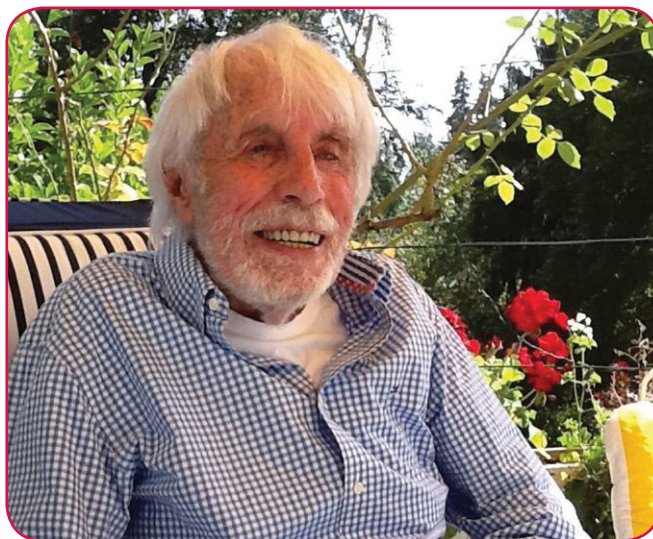
A remarkable memory rivals Sisnett's sharp sense of humor. Remembering names, faces, places, dates, and events has never posed a problem. The friendly ease with which he greeted his hundred or so guests by name made clear just how sharp his mind remains.

James Sisnett witnessed a century of the changed and unchanged on the island. He pointed out the new developments on the hillsides, and marveled at the unchanging nature of the white beaches, the pine forests, and the waves crashing upon the rocks.

Standing on the island's western coast, we looked East across to Africa. There is no land between Barbados and Africa, nothing to slow the rough waves that crash upon the island's western shore. The loud crashing where land meets sea is said to be a reminder of the cries of countless Africans, captured and enslaved, who perished on slave ships during the brutal crossing to the Americas. It's a solemn reminder; history feels ever so close, standing with a man only one generation removed from this terrible chapter in our past.

Sisnett shared a strong connection to historical events with other "super" individuals. **Mississippi Winn**, a lovely southern belle, beauty and charm still apparent at 113 years of age, was born the daughter of two freed slaves.

Sisnett's family is every bit as remarkable as the man himself. Despite inheriting type I diabetes from Sisnett's first wife, his children lack the severe complications typical of the disease. All of his children look decades younger than their biological ages. His family shares his contagious wit, strength, intelligence, and sense of humor, and glow with such a warmth and kindness, they made the visit unforgettable. Their selfless contributions to this research can result in treatments or cures not just for diseases such as type I diabetes, but also for heart disease, cancer, neurodegenerative disorders, and so much more.



**Johannes Heesters: 1903 - 2011.**  
**Lived 108 years**

In September 2011, James, Parijata, and Kemal Akman, a graduate student at the Ludwig-Maximilians-Universität in Munich, visited **Johannes Heesters** at his home in Starnberg, Germany. Mr. Heesters, born in 1903, was primarily a singer and actor throughout his life. Although born in Holland, he spent most of his life in Germany and Austria. He enjoyed champagne and chain-smoked for nearly a century.

When asked why he refused to retire, Heesters once quipped: "Should I just sit around at home, waiting for them to come and get me? I wouldn't dream of it."

Mr. Heesters posed for photos with James and Parijata and told them stories about his acting career, and sang a song for them. His wife, actress Simone Rethel, whom he married following the death of his first wife, presented them with an autographed copy of her book, in which she dispels the misconception that old age means illness, disability, and nursing homes. In December 2010, the 107-year-old Heesters announced that he had quit smoking for his then 61-year-old wife, Simone, saying, "She should have me as long as possible." Johannes Heesters passed away on Christmas Eve, 2011.







**Rhys Thomas Lewis: 1903 - 2012.  
Lived 108 Years**

James and Parijata arrived in the UK and set up temporary headquarters in a small house in the university town of Oxford, near the center of England. They gathered the names and addresses of as many people as they could find who were over 105 years old, and began contacting them. About a dozen individuals agreed to meet with them and to provide DNA samples. Many of these individuals exceeded their expectations as to their health and vigor.

Shane Mackey, a biology student at the University of Chicago, and brother of Parijata Mackey, and James visited the home of Rhys Lewis and his son Peter, in Wokingham, UK.

Long life ran in Mr. Lewis' family, with two of his sisters, Doris Williams and Megan Samuel, living until 102 and 99. Both passed away last year. Rhys was born in Wales on September 17, 1903.

A few lifestyle details were provided by his son, Peter. "He used to smoke, but gave up some years ago. He drank in moderation: he loved a glass of sherry for example, but that's all. He ate well but not to excess, and disliked any 'foreign' food! He loved a good fry-up, fish and chips, and roast beef, and used to grow his own on an allotment."

The family lived a modest life but "full of argument," especially on politics but also history and economics ("which we inherited, and have passed on to our children"). "He lived frugally (like many of his generation, having survived two world wars) and was a keen saver. His will left over half a million pounds - he received two pensions (state plus teachers). He left such a sum because he invested very wisely, both directly in shares and through unit trusts.

"He could also become very angry (right to the end), and was especially angry at being hospitalized (a broken hip and hemorrhoids)." His son, Peter, continued his commentary. "I wonder if he suffered short-term memory loss towards the end, because this seems to be a problem with some old people, that they forget their accidents and can't understand why they are in hospital!"

"But his long-term memory improved (surprisingly) as he aged, having time to excavate his sub-conscious I suppose. He even came up with stories from his childhood I had never heard before. For example, Rhys left home at 13 to become a miner, but continued to improve himself by taking night school and eventually leaving mining to attend Swansea University. Before he retired at 67 years of age, he was head of history at Easthampton Park College of Education in Berkshire."

Rhys died on July 4, 2012, just a few months short of his 109<sup>th</sup> birthday, the oldest living Welshman, at that time.

### **Social, Outgoing, Happy, Nearly Illness-Free and Otherwise "Normal"**

According to the Max Plank Institute, super-centenarians make up only **0.05 per million** of the population. After meeting several dozen centenarians and super-centenarians, James and Parijata have concluded that they are indeed very special people, both biologically and in personality. Nearly all of them were quite social, outgoing individuals with cheerful dispositions. These genetically fortunate individuals lived nearly illness-free lives, with many of them never having seen a doctor, all the while having smoked, drank, and generally having lived very average lifestyles.

One typical story was recounted by a retirement home director, who shall remain nameless. A stomach virus swept through their community. It killed several residents, and made residents and staff alike ill for weeks. The super-centenarian in question got sick the night of the outbreak—but by the next morning he was fully recovered, and asked for his regular breakfast. The manager said he'd never seen anything so amazing for someone of that age. Wouldn't we all like to be as resilient as this super-centenarian?

### **Summary**

James and Parijata continue to collect DNA samples from the extremely long-lived while focusing on the analysis of the dozens of whole-genomes thus far sequenced. They are now working with their chief scientific adviser, Dr. George Church of Harvard Medical School, to identify the variations that protect these

individuals from disease and allow them to live nearly perfectly healthy lives until just shortly before their deaths.

Life Extension Foundation® has agreed to advance this research by sponsoring a gene-expression research study. Blood tests will be used to look at bio-markers that have been discovered that relate to the biological age of an individual's various organs as compared to their chronological age. This Life Extension Foundation®-sponsored research study should begin sometime in mid-2013. ●

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## About the Androcyte Research Team

**James Clement**, the CEO of Androcyte, was a lawyer who, over the past decade, became increasingly involved with healthy life-extension, cryonics, and transhumanism.

James's previous leadership roles included serving as the COO for the Maximum Life Foundation and as the Executive Director of the World Transhumanist Association. He is currently a member of the Board of Directors of the Alcor Life Extension Foundation®. In 2008, James co-founded and published **h+ Magazine** with his friend and mentor Dan Stoicescu, a wealthy philanthropist who holds a PhD in medicinal chemistry. h+ Magazine focused on promoting research in nanotechnology, biotechnology, information science (artificial intelligence), and cognitive science, and became a very successful online magazine, having nearly a half-million readers a month.

**Parijata Mackey's** honors began with the Silver Knight in Science Award from the *Miami Herald* in 2005, for her work on *Drosophila* genetics. She was selected as a DHS Scholar, and received a scholarship to study molecular biology, computational neuroscience, and philosophy at the University of Chicago, where she later taught and founded the synthetic biology research program. Additional research experience includes genetic engineering and synthetic biology at the University of Chicago, mechanisms of aging and DNA damage at Barry University, and pathogen bioinformatics at Lawrence Livermore National Laboratory.

**Dr. Michael Fossel** is the Principal Investigator for this Supercentenarian Research Study. Currently Dr. Fossel is a Physician Executive at HPG Resources, and previously served as a professor of Clinical Medicine at Michigan State University and as editor of the *Journal of Anti-Aging Medicine*. He is best known for his views on telomerase therapy as a possible treatment for cellular senescence. Dr. Fossel has written numerous articles on aging and ethics for the *Journal of the American Medical Association* and *In Vivo*, and he published a book titled *Reversing Human Aging* in 1996. An academic textbook by Dr. Fossel entitled *Cells, Aging, and Human Disease* was published in 2004 by Oxford Press.

**Dr. George Church** is the lead Scientific Advisor of this project. Dr. Church is Professor of Genetics at Harvard Medical School, Director of the Center for Computational Genetics. His 1984 Harvard PhD thesis included the first direct genomic sequencing method, molecular multiplexing tags, which lead to automation & software used at Genome Therapeutics Corporation for the first commercial genome sequence—which was performed on the pathogen, *Helicobacter* in 1994. He helped initiate the Human Genome Project in 1984, and is widely regarded as a pioneer in personal genomics and synthetic biology.



# 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 same 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,<sup>1-10</sup> thus extending its beneficial effects.

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Life Extension® members gain access to standardized **trans-resveratrol** combined with botanical 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 **\$31** per bottle. The suggested dose of one capsule a day provides:

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

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.

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According to the *Proceedings of the National Academy of Sciences*, alpha tocopherol (vitamin E) displaces critically important gamma tocopherol in the cells.<sup>1</sup> While **alpha tocopherol** inhibits free-radical production, **gamma tocopherol** is required to trap and neutralize existing free radicals.<sup>2</sup>

Prestigious scientific journals have highlighted **gamma tocopherol** as one of the most critically important **forms** of **tocopherols** which includes d-alpha tocopherol (natural vitamin E) for those seeking optimal health benefits.

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Life Extension® has uncovered research suggesting that adding **sesame lignans** to gamma tocopherol may significantly enhance its beneficial effects. Sesame and its lignans have been shown to boost antioxidant levels and help maintain already-normal blood pressure.\*

In a human study that combined **gamma tocopherol** with **sesame lignans**, gamma tocopherol/ sesame was **25% more effective** than gamma tocopherol/ tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.<sup>4,5</sup> 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.

Life Extension fortified the popular **Gamma E Tocopherol** supplement with standardized **sesame lignans** extract long ago. Consumers thus obtain superior benefits at a much **lower cost**.

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### Each softgel of Gamma E Tocopherol with Sesame Lignans provides:

Gamma tocopherol	215.4-244.12 mg
Delta tocopherol	89.75-125.65 mg
Alpha tocopherol	30.51-35.9 mg
Beta tocopherol	0-7.18 mg
Sesame seed ( <i>Sesamum indicum</i> ) lignan extract	20 mg



Item # 00759

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Antioxidant Vitamins & Cancer. Some scientific evidence suggests that consumption of antioxidant vitamins may reduce the risk of certain forms of cancer. However, the FDA does not endorse this claim because this evidence is limited and not conclusive.

NOTE: Those taking Super Booster do not usually require additional gamma tocopherol.

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Advances in research have led to the discovery of compounds that offer a **novel approach** to supporting the delicate skin of your neck and décolleté. Scientists have discovered that these **compounds** act as key regulators of the biochemical environment within the dermal layers of the skin.<sup>1-7</sup> This facilitates the communication necessary to **protect, repair, and strengthen** your skin from the inside out.

## ULTIMATE NECK-CHEST SKIN SUPPORT

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- **Hexapeptide-10** helps improve the connectivity of the dermo-epidermal junction, reinforcing the skin's elasticity and firmness.<sup>1</sup>
- **Acetyl-di-peptide-13 diphenylglycine** improves skin's tightness by halting the breakdown of elastin and stimulating the synthesis of collagen type I.<sup>2</sup>
- **Goji berries** have unparalleled antioxidant power that protects the skin's internal structure from free radical damage.<sup>3,4</sup>
- **Indian gooseberry** helps protect against UV damage that leads to collagen breakdown and an early loss of elasticity.<sup>5</sup>
- **Hyaluronic acid** increases skin hydration and facilitates communication between skin layers.<sup>6,7</sup>

Together, these 5 ingredients provide you with **ultimate support** for the delicate **skin of the neck** to help defend against the visible signs of aging.

A 2 oz jar of **Cosmesis Skin Care Tightening & Firming Neck Cream** retails for \$39. If a member buys two jars, the price is reduced to **\$26.25** per jar.



Item # 80148

To order Cosmesis Skin Care Tightening & Firming Neck Cream, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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# Broad Spectrum Benefits of **APPLE POLYPHENOLS**

The benefits of **plant polyphenols** are well known to health enthusiasts. These natural plant constituents block oxidative damage that leads to inflammation and accelerated biological aging of tissues.<sup>1</sup>

Recent studies by *three separate laboratories* have concluded that polyphenols extracted from **apples** extend life span in laboratory models by up to **12%**.<sup>2</sup>

## Unique Polyphenols

Apples, and especially their skin, are rich in an array of polyphenols. One particular major bioactive polyphenol, **phloridzin**, found in the skin of the apple, has been shown to act as a powerful agent against *glycation* and other destructive processes in the body. Phloridzin also regulates **cell to cell signaling**<sup>3</sup> and supports **healthy glucose levels** in those already within normal range by inhibiting the **glucose-6-phosphatase enzyme**.<sup>4,5</sup>



## Broad Spectrum Benefits

Apple polyphenols can slow triglyceride absorption from the intestine by blocking pancreatic lipase, an enzyme specifically required to break down triglyceride fats.<sup>6,7</sup>

Additional research has shown that apple polyphenols can increase the protective antioxidant molecule **paraoxonase** by as much as **23%**, thereby inhibiting lipid peroxidation and inflammatory factors.<sup>8</sup>

Along with phloridzin, apples contain **chlorogenic acid**. Chlorogenic acid supports **healthy glucose levels** in those already within normal range by inhibiting the **glucose-6-phosphatase enzyme**<sup>4,5</sup> and by increasing some cellular mechanisms that are stimulated by insulin in liver cells.<sup>9</sup>

## The Ultimate Form of Apple Polyphenols

**AppleWise Polyphenol Extract** is extracted from the highest quality organically grown apples. Each 600 mg vegetable capsule contains **300 mg** apple polyphenols.

A bottle containing **30 600 mg** vegetarian capsules of **AppleWise Polyphenol Extract** retails for \$21. If a member buys four bottles, the price is reduced to **\$14.25** per bottle. Item #01625.

**Consumer note:** Members taking supplements providing standardized pomegranate and coffee bean extracts, along with anti-glycating nutrients like carnosine, benfotiamine and pyridoxal-5-phosphate may be deriving similar benefits of apple polyphenols.



Item #01625

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To order **AppleWise Polyphenol Extract** call **1-800-544-4440** or visit [www.LifeExtension.com](http://www.LifeExtension.com)



BY TRAVIS HARDING

# *Better Brain Chemistry* with **TRYPTOPHAN**

Aging is often accompanied by a spectrum of mood disorders that include irritability, stress, and anxiety. These symptoms, along with more severe ones like sleep disorders, depression, aggressive behavior, reduced motivation, and suicidal thinking have all been traced to depletion of brain levels of **serotonin**, a neurotransmitter that has been called the “happiness hormone.”<sup>1-3</sup>

With the progression of age, chronic, low-grade inflammation sets the stage for degenerative disease in almost every area of the body.<sup>4</sup> While this inflammation often leads to diabetes, cancer, and heart disease, it also affects the brain by interfering with the production and release of **serotonin**.<sup>1-3,5</sup>

In order for your body to manufacture serotonin, it needs a sufficient supply of the natural amino acid, **tryptophan**.<sup>1</sup> Much of what is now known about the role of serotonin in psychiatric and behavioral disturbances comes from studies of **tryptophan depletion**.<sup>6,7</sup> Lowering tryptophan levels triggers a corresponding drop in brain serotonin production and can impact mood, impair memory, and increase aggression.<sup>7</sup>

Although you can't supplement with serotonin itself, **tryptophan** is readily available as a safe, well-proven supplement.<sup>8</sup> Supplementing with tryptophan helps normalize levels of serotonin and other neurotransmitters. As a result, it can reverse many of the behavioral symptoms of age, including irritability, mood disorders, anxiety, and stress.<sup>9</sup>





### Tryptophan Helps Regulate Behavior

The scientific literature is clear: Tryptophan supplementation simply makes people nicer!<sup>10</sup> With the close connection between tryptophan and the neurotransmitter serotonin, it shouldn't be surprising that supplementing with tryptophan can regulate behaviors that involve serotonin signaling in the brain (such as mood, sleep, and anxiety).<sup>2,5</sup>

Studies in animals reveal marked decreases in territoriality and aggressive behavior when their diets are supplemented with tryptophan.<sup>11-13</sup> Humans experience similar results.

For example, in studies of adults who are self-described as “quarrelsome,” **1,000 mg** of tryptophan **three times a day** produced significant increases in measures of agreeableness and agreeable behaviors, and decreases in quarrelsomeness.<sup>10,14</sup> Interestingly, men in one study experienced a reduction in dominance, whereas both men and women experienced a decrease in quarrelsome behavior along with an increase in agreeable behavior and their perception of agreeableness in others.<sup>14</sup>



A study of 10-year-old boys with elevated physical aggressiveness revealed the benefits of a single **500 milligram** dose of tryptophan. In the supplemented group, boys were able to adjust their level of response based on the level of provocation, helping them avoid potentially violent encounters.<sup>15</sup> The supplemented boys were able to take more mature perspectives and to be more helpful in the group—all behaviors that could be achieved by many older adults as well.

Other studies have demonstrated that low levels of tryptophan can have a negative effect on behavior. Patients receiving interferon therapy against hepatitis C infection, for example, experience decreases in plasma tryptophan levels. As a result, those undergoing this therapy are notoriously likely to experience emotional irritability and severe depression as side effects.<sup>16,17</sup> As another example, mice lacking the gene necessary to convert tryptophan to serotonin display extreme compulsive and impulsive behaviors, including intense aggressiveness.<sup>18</sup>

People with naturally impulsive or aggressive personalities may receive the most benefit from supplementing with tryptophan, based on studies of deliberate tryptophan depletion in such patients. Those people react very poorly to low tryptophan levels, with an exaggerated impression of the intensity of fleeting angry expressions on others' faces, and an increase in their angry mood state.<sup>19</sup> Similar effects of tryptophan depletion are seen in adults with attention deficit-hyperactivity disorder, which is closely associated with aggression and impulsivity.<sup>20</sup> Supplementation with tryptophan may offer relief to those patients and their long-suffering families.

### The Multiple Roles of Serotonin in the Central Nervous System

Healthy, Balanced Levels of Serotonin Are Required For Control Of:<sup>1</sup>

- Mood
- Aggression
- Pain
- Anxiety
- Sleep
- Memory
- Eating behavior
- Addictive behavior
- Temperature control
- Endocrine regulation
- Motor behavior

### Tryptophan Improves Sleep Quality

Poor sleep quality or sleep deprivation is a common cause of irritability and moodiness, especially in older people. Studies show that people who sleep poorly are more likely to consume fats or refined sugars, to eat fewer vegetable portions, and to have more irregular meal patterns.<sup>21</sup>

The two main biomolecules that are involved in the production of normal sleep—the neurotransmitter **serotonin** and the hormone **melatonin**—are both naturally made from **tryptophan** in the body.<sup>22</sup> That makes tryptophan a tremendously valuable supplement for those whose sleep is lacking in either quantity or quality.

Studies dating back to the late 1970s have demonstrated that taking between **1 and 15 grams** of tryptophan at bedtime can help you fall asleep.<sup>23</sup> Even doses as little as **250 milligrams** were found to increase the quality of sleep by lengthening the amount of time spent in the deepest stage of sleep.<sup>23</sup>

During the 1980s, many additional studies demonstrated the benefits of taking **1,000 mg** or more of tryptophan at bedtime. Significant improvements were shown in subjective reports of sleepiness such as a decrease in the time to fall asleep, decreased total wakefulness, and an increase in total sleep time.<sup>24-26</sup> These studies showed their most impressive results in people with mild insomnia, or in those with above-average time it takes to fall asleep.<sup>27</sup>

Those who take tryptophan at bedtime are more likely to wake up with increased alertness, to have clearer thinking, and to perform better on attention-requiring tasks.<sup>25,28</sup> Unlike sleeping pill drugs, tryptophan induces sleepiness but does not impair performance or produce dependence, nor does it make it harder to be roused from sleep when necessary.<sup>27,29</sup>



One study in older adults demonstrated significant improvements in total sleep time, a decrease in the time to fall asleep and sleep fragmentation or periods of broken sleep following a twice-daily serving of tryptophan-enriched cereal providing **60 milligrams of tryptophan per ounce**.<sup>9</sup> (A ten-ounce serving of this cereal would thus provide **600 mg** of tryptophan.)

Tryptophan may also play a positive role in one of the most dangerous sleep-related complications, **obstructive sleep apnea**. This condition causes repeated episodes of near-awakening that viciously disrupt sleep cycles and places sufferers at greatly increased risk of developing cardiovascular disease in later life.<sup>30-32</sup>

In one study, patients with obstructive sleep apnea who took **2.5 grams** of tryptophan at bedtime showed significant improvement from their baseline sleep patterns, with improvements in the amounts of time spent in “rapid eye movement” (REM) sleep, and shortened time to entering rapid eye movement sleep.<sup>33</sup> Decreased rapid eye movement sleep is associated with poor next-day alertness and feelings of fatigue, sometimes resulting in involuntary falling asleep during daytime (narcolepsy).<sup>34</sup>

### Tryptophan Helps Manage Depression

As with sleep disturbances, depression can contribute to irritability, impulsive behavior, and poor judgment.<sup>35</sup> For nearly three decades, serotonin has been recognized as the neurotransmitter of central importance in managing depression; virtually all drug therapies in use today aim at raising levels of serotonin at the synapses where nerve cells communicate.

Boosting and balancing brain serotonin through tryptophan supplementation (as opposed to through drug therapy) is an innovative approach to depression that is gaining more and more traction—especially with the discovery that patients with major depression have low levels of tryptophan.<sup>36</sup>

Studies show that tryptophan compares favorably with prescription antidepressants, either when used alone or in combination with a prescription drug.<sup>37,38</sup> Pharmaceutical antidepressants are slow-acting and may cause temporary or prolonged sleep disturbances. However, combining **2 grams/day** of tryptophan with the prescription antidepressant fluoxetine (Prozac® and others) may speed the onset of action while limiting sleep disturbances. (See the **Caution** on page 76.)<sup>38</sup>

Studies show that lowering plasma tryptophan levels induces many of the symptoms of major depression in patients who have depression or are at familial risk for the disorder.<sup>39-41</sup>



### What You Need to Know

#### Balance Mood and More with Tryptophan

- Grumpiness, irritability, stress, and anxiety are common in aging adults.
- These symptoms, as well as more severe ones like sleep disorders, depression, post-traumatic stress disorder, and suicidal thinking have all been traced to depletion of brain levels of the neurotransmitter serotonin, which is responsible for maintaining an “up” mood.
- Although you can’t supplement with serotonin itself, its precursor, the amino acid tryptophan, is readily available as a safe, well-proven supplement.
- Supplementation with tryptophan reduces irritability in older adults, in women with premenstrual syndrome, and in people with depression and anxiety.





Intriguingly, one of the major manifestations of depression is negative emotional processing, including a tendency to interpret facial expressions in a negative manner (this can reinforce feelings of sadness and hopelessness that are key features of depressive illness).<sup>42,43</sup> Tryptophan depletion intensifies this effect, while tryptophan supplementation reverses it, creating a pleasant positive bias instead, a result shared with prescription antidepressants but without their side effects.<sup>42,44</sup>

In studies of the milder depressive syndrome known as seasonal affective disorder (SAD), or “winter depression,” treatment with bright light (to simulate the longer days of summer) is currently the standard of care. Recent studies, however, demonstrate that tryptophan supplementation is as effective as light therapy, and its effect lasts longer than that of light treatment.<sup>45,46</sup>

### Tryptophan Reduces Anxiety and Stress

Anxiety and stress responses can have a major impact on social functioning. Extreme situations such as post-traumatic stress disorder can be especially debilitating. The natural protective response to stress and anxiety involve the **serotonin** signaling system, as well as hormone pathways in the brain, pituitary, and adrenal glands.<sup>47</sup>

### Can Tryptophan Supplements Help Your Workout?

When you're feeling grumpy, there's nothing quite so rewarding and relaxing as a good workout. But for many people, a good workout is as much of a mental challenge as it is a physical one. Many workouts are limited, not by physical fatigue, but by discomfort and pain, as well as a desire to simply give up and go home.<sup>57,58</sup>

Studies of tryptophan and exercise reveal a startling effect: Supplementation improves exercise performance, strength, and endurance. But more importantly, supplementation can lead to longer workouts because subjects perceive their level of fatigue differently.

One study showed a **49%** increase in the length of a hard workout, while another showed that distance runners supplementing with tryptophan covered more than half a kilometer more than placebo recipients.<sup>57,58</sup> Tryptophan-supplemented athletes just don't give up as easily or as early.

The result? Longer, more comfortable workouts, with less pain. That's an outcome even a grumpy old man can smile about.

The connection between tryptophan and serotonin explains why tryptophan supplementation has been found to help reduce anxiety and alleviate stress. Tryptophan supplementation reduces biochemical markers of stress, particularly the hormone cortisol that has many deleterious effects in the human body.

As further evidence, acute tryptophan depletion in people with anxiety disorder or with post-traumatic stress disorder leads to a temporary worsening of their symptoms.<sup>48-50</sup>

### Tryptophan Relieves Premenstrual Symptoms

No discussion of irritability and “grumpiness” would be complete without mention of premenstrual syndrome and its more disruptive cousin, premenstrual dysphoric disorder. In both syndromes, a reduction in brain serotonin levels is to blame for the dysphoria (state of unease, the opposite of euphoria), mood swings, tension, and irritability that define them.<sup>51</sup> Standard drug treatment consists of selective serotonin reuptake inhibitors, with their attendant side effects.<sup>52,53</sup>

Studies of tryptophan depletion reveal a worsening of premenstrual symptoms, especially aggression,

while a small number of studies have now appeared suggesting that tryptophan supplementation is effective at reducing symptoms.<sup>54-56</sup> In one study of premenstrual dysphoria, a dose of **6 grams/day** produced a significant reduction in dysphoria, mood swings, tension, and irritability, when started on the day of ovulation and continued until the third day of menstruation.<sup>55</sup>

## Consequences of Abnormal Serotonin Function

### Abnormalities of Serotonin Function Are Related To:<sup>1,2,6</sup>

- Behavioral disorders in geriatric patients
- Aggressive and self-injurious behavior
- Sleep disorders
- Depression and seasonal affective disorder (SAD)
- Mania
- Anxiety
- Obsessive compulsive disorder
- Eating disorders
- Schizophrenia
- Movement disturbances (tardive dyskinesia, akathisia, dystonia)
- Familial tremor
- Restless legs syndrome
- Gilles de la Tourette's syndrome
- Multiple sclerosis
- Parkinson's disease
- Huntington's disease
- Dementia
- Substance abuse
- Hypersexuality

## Summary

One of the greatest heartbreaks of aging is its association with short tempers, easy frustration, and irritability, resulting in the sometimes accurate stereotype of the “grumpy old man” (or woman).

Today, we recognize that the chronic inflammation that's part of the aging process eats away at our bodies' supply of tryptophan, the amino acid needed to produce the “happiness neurotransmitter,” serotonin.

Loss of adequate serotonin in the brain is associated with more than just grumpiness, however. Age-related changes in serotonin levels are responsible for troubling sleep disturbances and for the manifestations of many mental health problems such as depression, anxiety, and post-traumatic stress disorder. Even premenstrual syndrome is now recognized as a consequence of transiently low serotonin levels.

Studies reveal the intimate relationships between tryptophan levels in the blood and serotonin levels in the brain. Tryptophan depletion can replicate symptoms of irritability, mood disorders, anxiety, and stress, while tryptophan supplementation is proving capable of **reversing** many of these symptoms.

Instead of taking an expensive pharmaceutical drug to boost your synaptic serotonin levels, consider daily tryptophan supplementation to achieve similar results at less cost and greater safety. ●

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





## Tryptophan: A Word of Caution

Low to moderate doses of tryptophan (less than about **30 milligrams** per pound of body weight, or about **4.5 grams** in an average 165-pound adult) are safe and generally free of side effects. However, at higher doses tremor, nausea, and dizziness may occur.

Special caution is called for in those taking anti-depressant drugs called selective serotonin reuptake inhibitors (SSRIs), because these drugs delay normal degradation of serotonin within nerve synapses. Excessive tryptophan in combination with such drugs can produce the "serotonin syndrome," consisting of delirium, involuntary muscle contractions, high fever, and coma.<sup>8</sup>

In 1989, a dangerous new syndrome, eosinophilia myalgia syndrome, was traced to contaminated tryptophan supplements, leading the US government to ban tryptophan imports.<sup>8</sup> Since that time, tryptophan supplies in the US have been carefully monitored and are safe. Eosinophilia myalgia syndrome is entirely unrelated to tryptophan itself, and should not be considered a side effect of supplement use.

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The retail price for a box containing two 5 mL vials of **Brite Eyes III** is \$34. If a member buys four boxes, the price is reduced to **\$24 per box**.

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## Eye support is *essential* to preventing age-related vision problems.

The older eyes get, the more susceptible they become to an array of debilitating issues that can hamper eyesight and cripple quality of life. With just a few drops of the proper eye lubricant, **eye irritation** stemming from **dryness** may be alleviated.

**Brite Eyes** by Life Extension® provides a powerful dose of two well-established lubricants in every drop, soothing eye discomfort without irritation. **Hydroxymethylcellulose** and **glycerin** are FDA-approved for ophthalmic use and are uniquely preserved with potent **antioxidants** and **anti-glycating** agents.

The **Brite Eyes** formula is buffered in a way to make it **soothing to the eye**. The suggested use of **Brite Eyes III** is to apply 1 to 2 drops in each eye every day.

Each box of **Brite Eyes III** contains two individual vials that provide 5 mL each. The reason for putting **Brite Eyes** into individual vials is to reduce the risk of bacterial contamination. Having small vials also makes it convenient for consumers to keep **Brite Eyes** readily accessible at home, the office, in one's purse or pocket, and other places where access to a soothing eye drop is needed.

# THE OPTIMAL TRYPTOPHAN FORMULA!



**Serotonin** is a neurotransmitter made in the brain from **tryptophan**. Serotonin has been associated with positive moods and restful sleep.<sup>1-4</sup>

To produce and maintain optimum serotonin levels, your body requires **tryptophan**, an essential amino acid, which means that your body cannot produce it.<sup>1</sup>

In the body, tryptophan has been shown to:

- Improve sleep<sup>3,4</sup>
- Enhance mood<sup>1,2,4</sup>
- Modulate stress<sup>5</sup>

**Life Extension®** offers **Optimized Tryptophan Plus** to broadly and powerfully support tryptophan levels already within the normal range.

In addition to delivering an optimum intake of tryptophan *itself*—the **Optimized Tryptophan** formula also provides a unique, balanced supply of *other* nutrients found to help maintain tryptophan activity in the body.<sup>6-8</sup>

## Multi-Pathway Tryptophan Support

The **Optimized Tryptophan Plus** blends lysine, niacinamide, and extracts of hops and rosemary to provide nutritive support for the body's production of serotonin.

## Purity and Safety

**Life Extension® Optimized Tryptophan Plus** contains premium L-tryptophan which has undergone significantly more rigorous manufacturing processes than regular tryptophan material to assure the highest purity and safety.

The suggested daily dose of 3 vegetarian capsules of **Optimized Tryptophan Plus** provides:

<b>L-Tryptophan</b>	<b>1,000 mg</b>
<b>L-Lysine</b> (from L-Lysine HCl)	<b>250 mg</b>
<b>Proprietary Tryptophan Plus Blend</b> Perluxan® Hops Standardized Extract ( <i>Humulus lupulus</i> )(cones), and Ursole™ Rosemary Standardized Extract ( <i>Rosmarinus officinalis</i> )(leaves)	<b>285 mg</b>
<b>Niacin</b> (as Niacinamide)	<b>66 mg</b>

A bottle of 90 vegetarian capsules of **Optimized Tryptophan Plus** retails for \$32. If a member buys four bottles, the price is reduced to **\$21.75** per bottle.

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For those who prefer capsules containing pure Tryptophan alone, **Life Extension®** also offers **L-Tryptophan**.

Each capsule provides **500 milligrams** of **L-Tryptophan**.

A bottle of 90 vegetarian capsules of **L-Tryptophan** retails for \$33. If a member buys four bottles, the price is reduced to **\$22.50** per bottle.

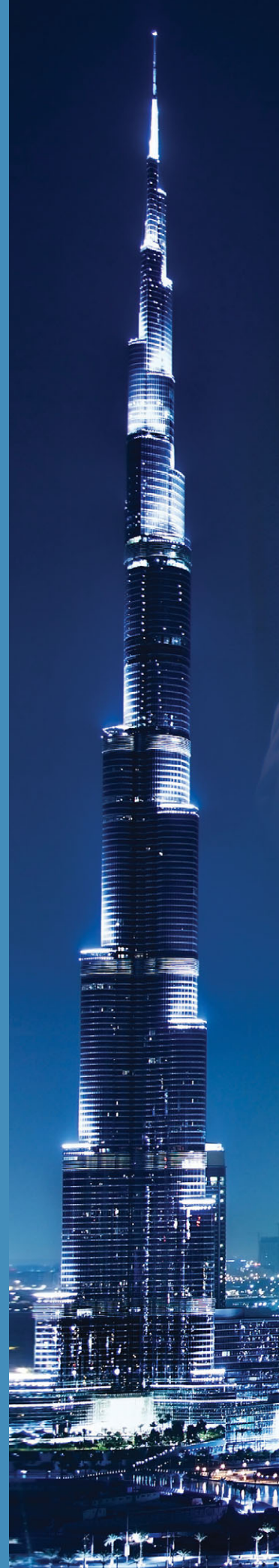


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call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**



# The 2012 **A4M** **SYMPOSIUM** in Dubai, UAE

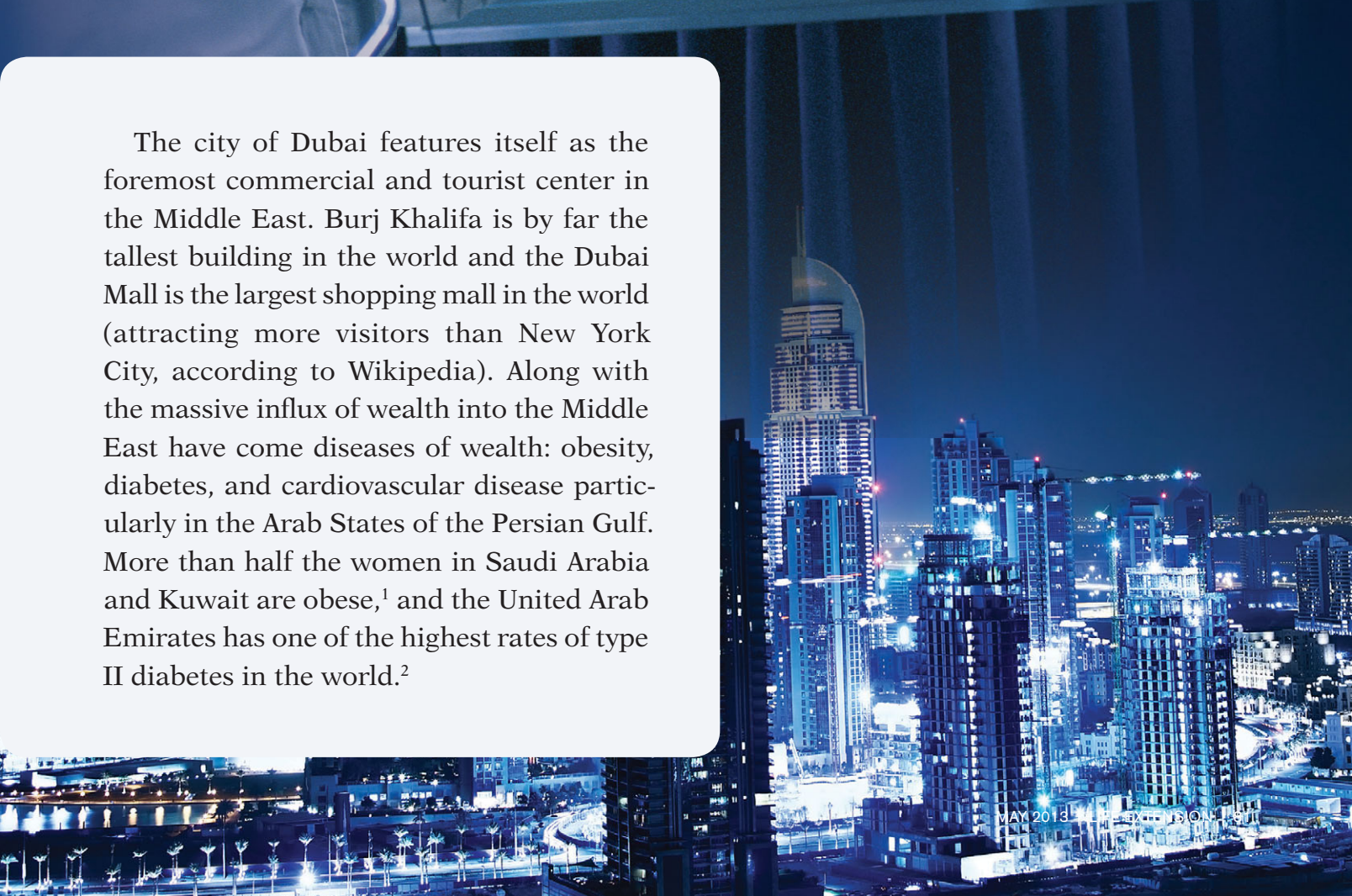
On the weekend of November 10-11, 2012 the American Academy of Anti-Aging Medicine (A4M) held an “American Anti-Aging Symposium” in Dubai, United Arab Emirates (UAE). The Symposium consisted of presentations by four American speakers, all of whom are medical doctors. One of the speakers, Dr. Jack Monaco, spoke for a full six-and-a-half-hours. Although only one of the speakers, Dr. Mark Rosenberg, was doing original research, all four presenters gave reviews of recent discoveries of four topics of their interest: bioidentical hormone replacement, ways to lose weight, defeating cancer by understanding cancer mechanisms, and reducing heart disease by understanding the causes. >







The city of Dubai features itself as the foremost commercial and tourist center in the Middle East. Burj Khalifa is by far the tallest building in the world and the Dubai Mall is the largest shopping mall in the world (attracting more visitors than New York City, according to Wikipedia). Along with the massive influx of wealth into the Middle East have come diseases of wealth: obesity, diabetes, and cardiovascular disease particularly in the Arab States of the Persian Gulf. More than half the women in Saudi Arabia and Kuwait are obese,<sup>1</sup> and the United Arab Emirates has one of the highest rates of type II diabetes in the world.<sup>2</sup>





The Symposium opened with a welcome speech by the Assistant Undersecretary for Medical Practice and License for the Ministry of Health of the United Arab Emirates, Dr. Amin Al Amiri. It was suggested to me by one of the participants that this is a positive sign that anti-aging medicine may soon be recognized as a medical specialty in the UAE. Dr. Al Amiri said that “Aging needs to be considered a different kind of disease,” and he spoke positively of new technologies like stem cells and bioidentical hormones that are making Dubai a popular medical tourism destination.

### Bioidentical Hormone Replacement

Jack Monaco, MD, is founder of the Monaco Center for Health & Healing in South Glastonburg, Connecticut. His mother was a Syrian Arab, which might have been part of his appeal as a speaker for this Symposium. Dr. Monaco is Board Certified in Obstetrics and Gynecology, which was his medical practice until 2007 when he became A4M Board Certified in Anti-Aging Medicine and changed his practice to that specialty.

Dr. Monaco mainly spoke about bioidentical hormone replacement. In his view, hormone decline is not due to aging; instead, hormone decline causes aging. He was critical of the massive Women’s Health Initiative (WHI) study of hormone replacement in post-menopausal women, which was halted because of increased incidence of breast cancer, cardiovascular disease, and stroke in women taking Prempro® (Premarin® and Provera®).<sup>3</sup> In absolute terms there was less than one-half of one percent difference between the

placebo and hormone replacement groups. It was subsequently shown that the Premarin® (pregnant mare urine horse-estrogenic hormone) was responsible for the increased stroke, and that the Provera (synthetic progesterone) was responsible for the increased breast cancer.<sup>4</sup> Dr. Monaco cited a study in France which demonstrated that breast cancer risk varies substantially with the type of progesterone used.<sup>5</sup> Natural progesterone is thought to confer a protective effect against certain types of breast cancer.

Contrary to popular opinion, the large size of the WHI does not compensate for the poor quality of the enrollment. Fewer than 5% of the women screened for the WHI study enrolled, about 40% of the hormone replacement group became unblinded before the study ended, and about 40% of the participants had dropped out of the study by the time it was terminated.<sup>6,7</sup> The average BMI of the WHI was borderline obese, about two-thirds were over age 60 (more than a fifth were over age 70), most had gone through menopause about ten years before the study, and three-quarters had never taken hormone replacement.<sup>6,7</sup>

Concerning Premarin®, Dr. Monaco noted that it would only be bioidentical for horses, and was approved by the FDA in 1942 based on the standards of that time. For humans, he favors the use of hormones that are bioidentical to natural human hormones. He said hormones chemically converted from yams or soy are bioidentical to human sex hormones, but cannot be patented, and are therefore of no interest to drug companies.

Monaco said that sleep is the most *disruptive* symptom of menopause, whereas cognitive problems



are the most **disturbing** symptom. Unlike menopause, which is a dramatic event for women, andropause for men is associated with a uniform decline in testosterone throughout life, beginning in the 20s.<sup>8</sup> He prefers topical application over oral tablets as a means of avoiding the “first pass effect” (compounds absorbed by the digestive tract go to the liver for processing before reaching the rest of the body). In administering bioidentical hormones to patients he starts with a low dose and increases dosing gradually until the desired effects are achieved.

Dr. Monaco’s personal experience in administering testosterone to himself and to his patients has convinced him that testosterone replacement improves mood, sexual function and general health. He equated using testosterone for age-related hormone decline with obtaining eyeglasses to compensate for declining visual acuity. He has seen no evidence for the claim that testosterone causes angry behavior.

### How to Lose Weight

Pamela Smith, MD, (Director of the Master’s Program in Metabolic and Nutritional Medicine, University of South Florida College of Medicine, Tampa, Florida) said that her father’s family is Armenian, apparently to indicate that her heritage is close to Middle Eastern. She spoke on the subject of her recently published book *Why You Can’t Lose Weight* with the intention of giving a program to overcome the problems in losing weight. She cautioned, however, that losing too much weight could increase wrinkles.

Smith recommends increased dietary fiber, which can be filling and does not contain calories. She recommends starting meals with greens and vegetables. Soluble fiber absorbs water while slowing absorption of sugar and fat, whereas insoluble fiber cleanses the intestines. She warned against eating addictive foods such as fructose,<sup>9</sup> bread,<sup>10</sup> and chocolate.<sup>11</sup> She called sugar the most addictive substance on Earth.

Smith said that mildly allergenic foods can lead to craving those foods. Wheat, dairy, soy, and eggs were the four foods she identified as being the most allergenic. (Life Extension® blood testing services offer a number of food allergy tests.) She said that chronic inflammation due to food intolerance (gluten in grains, lactose in milk products, and tyramine in cheese) can lead to weight gain. She also believes that yeast infection can promote weight gain, but by increasing appetite for carbohydrates, rather than by inflammation. Excessive omega-6 fats, such as are found in corn oil and sunflower oil are also pro-inflammatory, whereas the omega-3 fats in fish oil are anti-inflammatory.<sup>12</sup>



Insulin resistance is the condition in which glucose cannot easily enter cells because cells have become resistant to the ability of insulin to facilitate glucose entry. When blood glucose is high because glucose has difficulty entering cells, the liver converts that glucose to fat. Smith recommends foods that do not rapidly elevate glucose (low glycemic index foods) such as lentils, mushrooms, and plums as opposed to foods that rapidly elevate blood sugar like rice cakes and honey.<sup>13</sup> Smoking<sup>14</sup> and psychological stress<sup>15</sup> can also increase insulin resistance.

Smith asked who in the audience enjoys exercise, and congratulated those who raised their hands. She said that when she met fitness expert Jack LaLanne she confessed to him that she hates to exercise. Jack told her that he hated exercise also, but that he liked the results. Smith recommends finding a form of exercise that is likely to be a permanent part of one’s lifestyle which in her case is dancing. (As published in the November 2011 issue of this magazine, Life Extension® believes that Jack LaLanne’s death at the age of 96 was most likely caused by inadequate intake of vitamin K2.)<sup>16</sup>

### Anti-Cancer Strategies

Mark Rosenberg, MD, (Medical Director of the Institute for Healthy Aging, Boca Raton, Florida) mainly discussed the special features of cancer cells, and strategies to exploit those special features in developing anti-cancer therapies. But he began his presentation with some critical comments about conventional cancer treatments.



Rosenberg expressed doubts that traditional chemotherapy generally increases cancer survival, citing a study which showed only about a **2%** increase in 5-year survival with chemotherapy.<sup>17</sup> As opposed to most cancers, however, he acknowledged that chemotherapy has proven benefit for lymphomas, testicular cancer, and ovarian cancer. Rosenberg's explanation for why chemotherapy is so often ineffective is that chemotherapy does not affect cancer stem cells. Like other stem cells, cancer stem cells can both self-replicate and produce functional cells, but the function of cells produced by cancer stem cells is to be cancerous. (Life Extension has long recommended metformin, a drug that seems to kill cancer stem cells.)<sup>18</sup>

Cancer cells tend to divide more rapidly than normal cells, and chemotherapy is most toxic to cells that divide rapidly. Unfortunately, normal cells in the body's immune system and digestive tract also divide rapidly. Traditional chemotherapy attempts to use the maximum dose that a patient can tolerate in the hope of obliterating the cancer. The damage done to normal body cells, however, requires rest periods. Rosenberg said that cancer stem cells do not divide rapidly, and thus elude destruction by chemotherapy. He favors the newer so-called "metronomic" low-dose chemotherapies (administered as regularly as the beat of a metronome) that target cancer stem cells and blood vessel growth.<sup>19-21</sup> (Cancer cells need new blood vessels to support their increasing tissue mass.)

Most of the energy (ATP molecules) generated by cells in the body is created in mitochondria by the

use of oxygen (oxidative phosphorylation). Some energy (ATP) can also be generated in cells outside of mitochondria by **glycolysis**, a chemical reaction that uses glucose without the need for oxygen. Unlike normal cells, cancer cells rely on glycolysis for energy, without the need for mitochondria. Mitochondria can self-destruct a cell that has abnormal DNA. Because cancer cells have abnormal DNA the cancer cells sideline use of mitochondria.<sup>22,23</sup> Cancer cells are thus adapted to a low-oxygen environment and this is particularly true of cancer stem cells.<sup>24-26</sup> (Life Extension is independently funding a large clinical study on cancer patients using a drug called dichloroacetate that inhibits cancer cell glycolysis.)

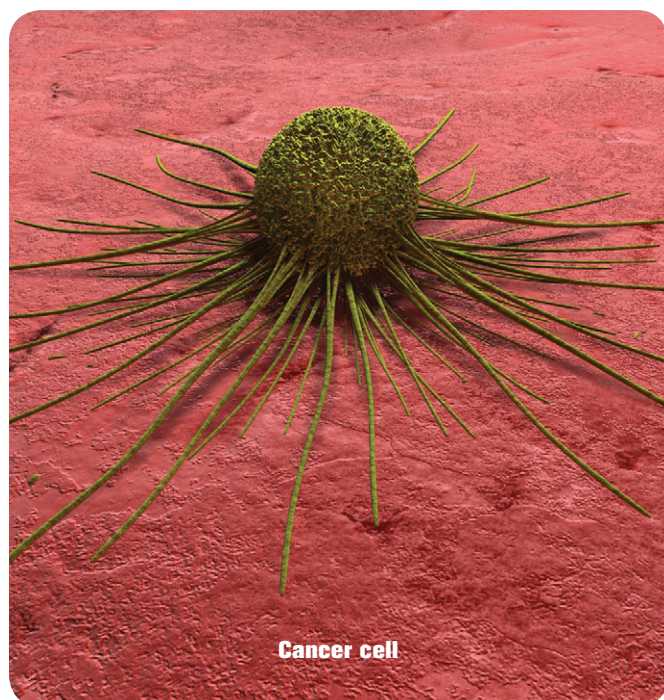
Unlike most normal metabolism, the production of energy by cancer cells (by glycolysis) results in an acid environment. An acid environment is toxic to normal cells, but promotes the development of certain cancer stem cells.<sup>27</sup> Rosenberg noted that reducing acidity with bicarbonate has been shown to reduce tumor growth in mice<sup>28</sup> and that targeting the acid producing capabilities of cells is a means of fighting cancer.<sup>29</sup> Rosenberg's research at the University of Miami has concentrated on exploiting these mechanisms.

## Heart Disease from Diabetes

Joseph Lamb, MD, (Director of Intramural Clinical Research, Metagenics, Inc., Gig Harbor, Washington), who is Board Certified in Internal Medicine, said that he walked away from a cardiology fellowship in order to concentrate on anti-aging medicine. He evidently spends a great deal of time reading scientific papers about heart disease because his presentation was a detailed review in which he cited a large number of references.

Dr. Lamb said that the reported decline in cardiovascular disease mortality in recent decades is an illusion because of the considerable increase in obesity and diabetes which lead to cardiovascular disease. He said cardiovascular disease is also being caused by metallic toxins, such as lead,<sup>30</sup> arsenic,<sup>31</sup> and mercury.<sup>32</sup>

Lamb said that apolipoprotein B is a more reliable risk factor for cardiovascular disease than plasma LDL (low density lipoprotein) and HDL (high density lipoprotein) cholesterol,<sup>33</sup> partly because of the variability in the size of LDL and HDL particles. Apolipoprotein B functions to attach cholesterol particles to cholesterol receptors. Because there is only one apolipoprotein B molecule for each HDL or LDL particle made by the liver, measuring apolipoprotein B gives a total count of all HDL and LDL particles. A higher count correlates with more numerous smaller particles and a higher cardiovascular risk.<sup>33</sup>



Cancer cell



An even better measure of cardiovascular disease risk, however, is the amount of cholesterol that has been oxidized.<sup>34</sup> High levels of oxidized plasma LDL cholesterol are also associated with the “metabolic syndrome” of diabetes.<sup>35</sup> Markers of plasma oxidation fall substantially after only two weeks of smoking cessation.<sup>36</sup> The “metabolic syndrome” of diabetes is associated with high levels of inflammatory particles in the bloodstream. A high-fat diet meal (toast laden with butter) elevates plasma inflammatory factors about 50-fold for nearly a half-hour after eating.<sup>37</sup> But a diet high in sugar and carbohydrates is associated with a large waist circumference and the chronic plasma inflammation of the “metabolic syndrome.”<sup>38</sup> (The most successful diets are those that are low in carbohydrates.<sup>39</sup>)

Another characteristic feature of diabetes, metabolic syndrome, and obesity is **insulin resistance**, the condition in which insulin becomes increasingly incapable of enabling glucose to enter cells. High levels of blood insulin lead to increased insulin resistance. Both saccharin (a sugar substitute) and iron increase insulin secretion and plasma insulin levels.<sup>40</sup> Thus, two strategies to reduce weight—an artificial sweetener and lean meat—ironically contribute to insulin resistance.

Dr. Lamb said that **endothelial dysfunction** is an earlier event in the development of cardiovascular disease than atherosclerotic plaque. The endothelium is a thin layer of cells that line blood vessels. The endothelium influences blood vessel functions, such as dilation/contraction, cell adhesion, and transmission of substances between tissues and the blood stream. Dr. Lamb said that postmenopausal women who successfully underwent therapy to reduce high blood

pressure were twice as likely to suffer a subsequent cardiovascular event if endothelial function had not been restored.<sup>41</sup> Endothelial function is dependent upon the generation of nitric oxide (NO). Although NO is usually produced by endothelial cells, diet can influence NO availability.

Concerning diabetes treatment, Dr. Lamb cited a study which found that metformin reduced the incidence of type II diabetes by **31%**, but weight loss through diet and exercise reduced the incidence by **58%**.<sup>42</sup> A Mediterranean-style, low glycemic diet for 12 weeks was shown to reduce plasma oxidized LDL by **12%**.<sup>43</sup> Niacin not only raises beneficial HDL cholesterol, it reduces the production of inflammatory proteins<sup>44</sup> and improves endothelial function.<sup>45</sup> Dr. Lamb added that Coenzyme Q<sub>10</sub> can improve endothelial function in diabetes patients taking statins.<sup>46</sup>

(Many nutrients (such as pomegranate) used by Life Extension members protect against endothelial dysfunction.)<sup>47</sup>

## Symposium Quality and Attendees

Although most of the conferences I attend have presenters describing their own research, I got more value than I was expecting from hearing subject overviews by physicians who have been studying the latest developments in their fields.

In my efforts to meet as many of the attendees as I could, I discovered that many had come from Europe. Many of those who had come from Middle Eastern countries seemed particularly enthusiastic about the concept that something can be done about aging—apparently a new concept to them. ●

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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**Restore  
Cellular  
Energy  
with...**

# NEXT-GENERATION CoQ10

## **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™**

Since **Life Extension®** introduced CoQ10 in **1983**, our scientists have continued to develop increased potency and absorbability.

**Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** contains **PrimaVie® shilajit** that **doubles** levels of CoQ10 in the mitochondria.<sup>1</sup>

Combining CoQ10 and **shilajit** produced a **56%** increase in energy production in the **brain**, and in muscle there was a **144%** increase in energy production.<sup>2</sup>

The primary reason people take CoQ10 supplements is to help **restore** youthful energy levels.

**Shilajit** boosts CoQ10's beneficial effects by stabilizing CoQ10 in the superior **ubiquinol** form, which *prolongs* its action at the cellular level.<sup>3,4</sup> Additionally, **shilajit** facilitates the more efficient *delivery* of CoQ10 into the mitochondria, which results in enhanced cellular energy.<sup>5-9</sup>

Shilajit helps the mitochondria convert fats and sugars into the body's main source of energy, ATP (adenosine triphosphate).<sup>5-9</sup>

Combining **ubiquinol CoQ10** with **shilajit** generates a powerful **synergy** that supports more youthful cellular energy production than CoQ10 alone.<sup>2,4,5</sup>



The retail price for 60 100 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is \$62. If a member buys four bottles, the price is reduced to \$42 per bottle.

**Item # 01426**



The retail price for 100 50 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is \$58. If a member buys four bottles, the price is reduced to \$39.75 per bottle.

**Item # 01425**



The retail price for 30 200 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is \$62. If a member buys four bottles, the price is reduced to \$42 per bottle.

**Item # 01431**

**To order Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

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PrimaVie® is a registered trademark of Natreon, Inc. Kaneka QH® is a registered trademark of Kaneka Corporation.



Ratings based on results of the 2012 ConsumerLab.com Survey of Supplement Users. More information at [www.consumerlab.com](http://www.consumerlab.com).

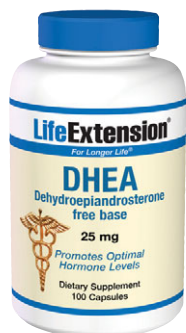
These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.





# Most Popular DHEA Dosages

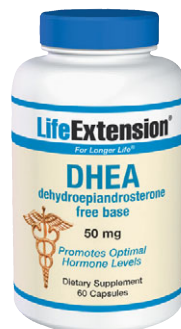
*DHEA is a critically important hormone, but its production declines sharply as we age. Scientists are discovering numerous health benefits when aging people restore their DHEA to youthful ranges. Life Extension offers a wide range of DHEA supplements to satisfy individual needs.*



Item #00335

#### **DHEA 25 mg • 100 Capsules**

The minimum dose of DHEA for most healthy aging people is 25 mg a day, though optimal doses are often higher in men. These 25 mg capsules are a popular way to consume the precise amount of DHEA your body may need. A bottle containing 100 **25 mg** capsules of **DHEA** retails for \$18; if a member orders four bottles, the price is reduced to **\$11.25 per bottle**.  
Contains rice.



Item #00882

#### **DHEA 50 mg • 60 Capsules**

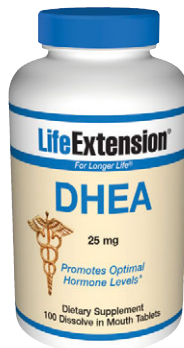
The optimal daily dose of DHEA for most people is 50 mg. These economical 50 mg capsules enable most people to conveniently consume the optimal dose of DHEA in just one capsule. A bottle containing 60 **50 mg** capsules of **DHEA** retails for \$19; if a member orders four bottles, the price is reduced to **\$12.75 per bottle**.  
Contains rice.



Item #00454

#### **DHEA 15 mg • 100 Capsules**

While published studies show the greatest benefit occurs when 50-75 mg of DHEA is consumed each day, some women only need a low dose of DHEA. Just one of these 15 mg capsules a day is all some women need to bring DHEA levels back to youthful levels. A bottle containing 100 **15 mg** capsules of **DHEA** retails for \$14; if a member orders four bottles, the price is reduced to **\$9 per bottle**.



Item #00607

#### **DHEA 25 mg • 100 Dissolve-in-Mouth Tablets**

A bottle containing 100 **25 mg dissolve-in-mouth** tablets of **DHEA** retails for \$14; if a member orders four bottles, the price is reduced to **\$8.81 per bottle**.  
Some people want to take DHEA in sublingual tablet form to avoid first pass through the liver, though published studies show that swallowing DHEA capsules consistently boosts blood DHEA levels already within normal range.

**CAUTION:** Do not use DHEA if you are at risk for or have been diagnosed as having any type of hormonal cancer, such as prostate or breast cancer.

To order the DHEA supplement that's right for you,  
call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.



## WELLNESS PROFILE

BY JON FINKEL

# David Justin **ROSS**

*Living Life to the Fullest*



David Justin Ross

Brains and brawn have always been considered traits that have to exist separately from each other. Visions of muscled-up oafs and scrawny scientists are practically embedded into our mainstream culture. Jocks are dumb. Nerds are weak. This narrative is, like most narratives, largely untrue. A genius can be in great shape. An athlete can be highly intelligent. Rarely, however, does an elite level of smarts meld with a high performance athlete to the extent that we are impressed by accomplishments in both fields. If you add in that this dual level of distinction happens to be found in a 63-year-old man, well, you're in for one heck of a story. >



This story is about David Ross. You've likely never heard of Ross, but you have no doubt been affected in some small way by his work in pattern recognition and information management solutions. He holds a degree in Physics from Yale University and an advanced degree in Aeronautical and Astronautical Sciences from Stanford University. He is also the chief architect of the US Treasury Department's Pay.gov Verification System and a former applied mathematician for public- and private-sector aerospace initiatives. He has held senior engineering positions at Ford Aerospace and NASA's Jet Propulsion Laboratory and he has consulted for the US Post Office.

Of course, there is one way that you may have heard of him; you could be one of the 850,000 plus viewers who have checked out the impressive photo that his son posted of his physique on Reddit.

"That photo is kind of what started my interest in talking to Life Extension®," Ross says. "I am 63 years old, I've run 36 marathons in seven years and I look how I do without any chemical additions. I have no joint pain. All I do is exercise, eat well, and take Life Extension products."

## Discovering Life Extension

"I first heard about Life Extension many years ago from Dr. Greg Fahy," Ross says. "He presented the whole idea about how you don't just target for inefficiencies, but you supplement to retain your youthful vigor. At that point I started reading the magazine and doing my own research about some of the recommendations."

Ross says that he was always reasonably athletic and that he

was a varsity soccer player in high school. His favorite exercise for most of his life has been hiking and in 2005 he decided to hike across the Olympic Mountains in Washington State. With a peak elevation of over 7,000 feet and distance of 44 miles, hiking along the entire range is not something most people would tackle in a single day, but Ross isn't most people.

"It's a spectacularly beautiful hike," Ross says. "I was hiking with a friend and one day one of us suggested that we try to do the whole hike, but in one day. We started training and that involved longer and longer hikes and walks. The first time I was walking and I got to 26.2 miles, I realized that was a marathon distance. It occurred to me that I could complete that distance and it was encouraging."

Right after Ross' day-long hike of the mountains, an old college roommate of his called and asked if he was up for a crazy challenge.

"My old roommate wanted to know if I was interested in running a marathon...in Antarctica," Ross says. "I thought, 'why not?'"

As one can imagine, running 26 yards in the South Pole would be challenging enough, but running 26.2 miles is borderline insane.

"It's minus nine degrees out and you're running in snow shoes," Ross explains. "The course changes because the ice isn't static. My son, who ran with me, describes it as running 1,600 meters in the Sugar Bowl in snow shoes and then doing it over and over again. Since the ice moves, one lap around the course there could be a hill, the next time, not. The entire run took twelve hours."

## The Challenge Continues

Ross' goal these days is to do a marathon in all fifty states and Washington, DC, as well as run one on every continent. As we said in the opening of the story, he has 36 down, so he's well on his way.

"After about my 20<sup>th</sup> marathon I decided that I'm not a great marathoner and that I just complete them," he says. "I concluded that

### David Ross' Supplement List

Super MiraForte  
Resveratrol  
Life Extension Mix  
Whey Protein  
Creatine  
Fast Acting Joint Formula  
CoQ10



I needed more core work, so about four years ago I gave myself the Christmas present of a trainer. I work out with him twice a week and on my own three times a week.”

During the winter, Ross says he’s in the gym six days a week. When

## Inspiring Words

By David Ross

I have been an enthusiastic member of Life Extension for twenty-three years and often attribute my continuing joy in life, good health, and strong sense of adventure to, in part, Life Extension. Too many people my age and younger have given up on life, thinking it is over for them. My motto has always been that from Robert Heinlein’s *Glory Road*: *Dum Vivimus Vivamus* - while we live, let us LIVE. With longer lives and greater health, we will have many careers (as my eclecticism shows, I practice what I preach!). We don’t have to wait or let those benefits go to future generations. There are things, like Life Extension, we can do now.

Whether Life Extension gives me longer life, I cannot say. I am blessed to come from a relatively long-lived family (who manages to do that while eating the East Texas fried, fried, and gravy diet). Still, I strongly believe that the supplementation I have used from Life Extension and the added enthusiasm and ability for life that has given me has put a great deal more LIFE in my life than I would have had without it.

the weather is nicer, he only spends four days inside and the rest he’s outside, hiking and running. He says he doesn’t lift weights to try to be healthy, rather, he lifts weights because he can and he enjoys the feedback he gets on his muscular physique.

“I’ve been very pleased with my weight training,” he says. “I’ve actually lost weight doing it. I am careful with the leg work that I do because I still train for running. I think it’s important for people to know that if you’ve taken care of yourself and you take the right supplements, you can do these things if you want to. I see people that I haven’t seen in years and they say, ‘My God, you look excellent.’ I take no hormones. I take no chemicals. People my age need to know this is possible.”

## The Supplements

“My testosterone levels have always been within the ‘normal’ range,” Ross says. “But I started taking Super MiraForte and about six weeks afterwards, my trainer stops me and says, ‘What’s different?’ He stopped me because I was lifting weights that I had never lifted before. I thought, maybe it’s the Super MiraForte and the higher level of free testosterone. I went to have my testosterone checked and it hadn’t changed, but my performance had.”

On a regular basis, Ross takes the Life Extension Mix, resveratrol, whey protein, and CoQ10. When he’s in training he takes creatine to help increase his muscle mass and to reduce muscle pain.

“Creatine dramatically reduces my muscle soreness,” he says. “I’ll take it three to four times a week after my loading phase. I’ll also take Fast Acting Joint Formula occasionally when I run to help my cartilage.”

Ross’ diet is comprised of a high intake of protein and vegetables with an avoidance of refined sugars.

“I don’t worry about carbohydrates because I get plenty of complex carbs from the vegetables,” he says.

He realizes that people may be skeptical about his accomplishments, but he has a very simple answer for that.

“I’m sixty-three. I’m doing more now than I was ever doing at forty and I do it without chemicals,” he says. “Right now, I weigh almost exactly what I weighed when I graduated college. I used to take medications for reflux and high cholesterol and now I don’t take any. Those facts speak for themselves.” ●

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







Restore Restful Sleep and  
Youthful Radiance with

# Enhanced Natural Sleep®

The consequences of **sleep deprivation** go far beyond the miseries of fatigue and diminished performance.

Decades of clinical research document that a good night's rest supports nearly all systems of the body, including:

- Skin health and youthful appearance<sup>1-4</sup>
- Healthy collagen formation<sup>5-8</sup>
- Insulin levels already within normal range<sup>9-11</sup>
- Healthy body weight<sup>12,13</sup>
- Glucose levels already within normal range<sup>14,15</sup>
- Blood pressure already within normal range<sup>16,17</sup>
- Healthy cell division<sup>18-20</sup>
- Cardiovascular health<sup>21-24</sup>
- Good mood<sup>25-27</sup>

Scientists attribute sleep-related difficulties to the unprecedented levels of *stress* most of us endure in today's fast-paced world.

To add insult to injury, sleep quality and duration decline as we grow older—at a time when we need the health benefits of a good night's rest more than ever.

## Three Proven Ways to Restore Relaxation and Restful Sleep

To combat the profound impact of sleep debt on health and youthful appearance, Life Extension® now offers **Enhanced Natural Sleep® with Dual-Action Melatonin**.

This new formula brings together three clinically validated, natural compounds that have been shown to support **healthy, restful sleep**, and promote **healthy response to stress**, while targeting sleep debt-related factors associated with **skin aging**. The three ingredients are:

**1. Bioactive Milk Peptides** (Lactium®), a cutting-edge nutrient complex consisting of patented **bioactive peptides** found naturally in milk. Used widely in **Europe** to promote sustained and restful sleep patterns, published studies reveal that these **bioactive milk peptides** also promote relaxation, help with stress, and support daytime cognition.

A group of 60 women reporting a variety of sleep-related difficulties experienced as much as **65.6%** improvement in their symptoms with **150 mg** per day of these **bioactive milk peptides**.<sup>28</sup> In another study, the same **150 mg** dose induced substantial improvements across **27 markers of sleep quality** and **stress response** in 165 healthy adults.<sup>29</sup> And in a third study, a group of healthy men and women taking 150 mg per day of these **bioactive milk peptides** for one month experienced a **50%** improvement in **sleep quality** after two weeks and needed **30%** less time to *fall* asleep after 4 weeks.<sup>30</sup>

**2. Melatonin** (very low dose). Melatonin levels naturally *decline* with age and adversely affect sleep patterns in many people. Both **immediate** and **time-release** melatonin has been shown to support restful sleep. So much so that time-release melatonin has been licensed since **June 2007** in Europe and other countries for the short-term treatment of **sleep disorders**.<sup>31</sup>

**3. Sendara™**. A proprietary nutrient complex consisting of **ashwagandha** and **Indian gooseberry** extracts. Prized in traditional cultures for their ability to promote healthy skin function and appearance, these plant-based compounds have since gained substantial *clinical* validation. Indian gooseberry provides broad-spectrum antioxidant support and has been used to preserve youthful skin health and appearance in many skin care products.<sup>32-35</sup> Ashwagandha promotes a healthy response to stress, yielding **62% relaxation support** compared to placebo with just **125 mg** per day in one clinical study.<sup>36</sup>

### Customized Formulas for Optimal Sleep and Stress Support

**Enhanced Natural Sleep® with Dual-Action Melatonin** should be taken 30-60 minutes before bedtime to help with sleep. The suggested daily serving size of just one capsule supplies:

Bioactive milk peptides (Lactium®)	150 mg
Melatonin (immediate release)	750 mcg
Melatonin (time-release)	750 mcg
Sendara™	200 mg

A bottle containing 30 capsules of **Enhanced Natural Sleep® with Dual-Action Melatonin** retails for \$22. If a member buys four bottles, the price is reduced to just **\$15** per bottle.



Item #01507

**To order any of these ADVANCED SLEEP and STRESS RELIEF FORMULAS, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

If you find you don't sleep well with melatonin—or are already taking one of **Life Extension®**'s standalone melatonin formulas at a different dose that works for you—we also offer **Enhanced Natural Sleep® without Melatonin**.

The suggested daily serving of one capsule supplies:

Bioactive milk peptides (Lactium®)	150 mg
Sendara™	200 mg

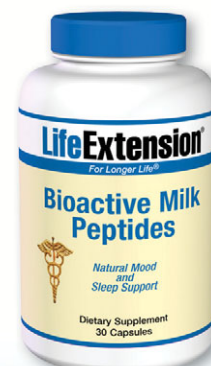
A bottle containing 30 capsules of **Enhanced Natural Sleep® without Melatonin** retails for \$20. If a member buys four bottles, the price is only **\$13.50** per bottle.



Item #01511

To help you deal with the stress of everyday life, you may also choose **Bioactive Milk Peptides** in standalone form, for daytime use to help with stress or before bedtime to support relaxation. Each capsule contains **150 mg** of the same patented formula Europeans have used for years to help with sleep and stress-related issues.

A bottle containing 30 capsules of **Bioactive Milk Peptides** retails for \$18. If a member buys four bottles, the price is only **\$12** per bottle.



Item #01512

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**Contains milk.**

**Lactium®** is used under license. **Sendara™** is a trademark of Nutragenesis, LLC.

**Caution:** Consult your healthcare provider before taking this product if you are being treated for a medical condition (especially autoimmune or depressive disorders). Use caution if combining with alcohol. This product is not intended for children, pregnant or lactating women, or women trying to become pregnant. Do not attempt to drive or operate heavy machinery after taking this product.



# COMPREHENSIVE VITAMIN K FORMULA



Item # 01724

**Super K formula provides in just one daily softgel:**

<b>Vitamin K2 (MK-7)</b>	<b>200 mcg</b>
<b>Vitamin K2 (MK-4)</b>	<b>1000 mcg</b>
<b>Vitamin K1</b>	<b>1000 mcg</b>

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

**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.<sup>9</sup>

**To order  
Super K with Advanced K2 Complex  
or Super Booster, call 1-800-544-4440 or  
visit [www.LifeExtension.com](http://www.LifeExtension.com)**

Each bottle of **Super K** lasts **90 days**, so members pay as little as **\$6.75 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 \$30. If a member buys four bottles, the price is reduced to **\$20.25 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**.)

#### 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 drugs like warfarin could benefit from a consistent low 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.

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## AUTHOR INTERVIEW

# The Blood Sugar Solution:

The UltraHealthy Program  
for Losing Weight, Preventing  
Disease, and Feeling Great Now



*The Blood Sugar Solution: The Ultra-Healthy Program for Losing Weight, Preventing Disease, and Feeling Great Now*, by Mark Hyman, MD, is a bestselling book that tackles a wide range of the most pressing health issues Americans face today, including obesity, diabetes, heart disease, stroke, dementia, and cancer. Dr. Hyman's unique approach to eliminating these illnesses is focused on the regulation of insulin levels through nutrition, balancing hormones, reducing inflammation, optimizing digestion, promoting detoxification, providing high quality supplementation, and implementing stress reduction techniques. The book is getting praise from some of the finest minds in medicine, including Dr. Mehmet Oz of *The Dr. Oz Show*, who writes the following in an endorsement for the book:

*"Dr. Hyman has done it again with a lucid description of the causes of the diabetes epidemic and a powerful treatment program. The Blood Sugar Solution is a must-read for anyone anywhere on the spectrum between mild insulin resistance and full-blown type II diabetes—a groundbreaking, science-based, easy-to-follow prescription. Start your journey to healing now."*

The following is an exclusive interview with Dr. Hyman for *Life Extension*®.



**LE:** You dedicate your most recent book with the following statement: “For the first generation of children in history that will live sicker and die younger than their parents. For their sakes and ours may we all work together to take back our health.” How dire are the public health circumstances from a numbers perspective?

**MH:** The prevalence of type II diabetes in America has tripled since the 1980s. There are now 27 million Americans with diabetes and 67 million with pre-diabetes. Within eight years one in two Americans will either have pre-diabetes or type II diabetes. The biggest tragedy is the global spread of childhood obesity and “adult” onset or type II diabetes in little children. From 1983 to 2008, the number of people in the world with diabetes increased sevenfold, from 35 to 240 million. In just three years, from 2008 to 2011, we added another 110 million diabetics to our global population.

**LE:** In short, what is “diabetesity”?

**MH:** Diabetesity is a comprehensive term to describe the continuum from optimal blood sugar

balance toward insulin resistance and full-blown diabetes. It is one of the leading causes of heart disease, dementia, cancer, and premature death in the world and is almost entirely caused by environmental and lifestyle factors.

**LE:** How is lack of physician knowledge on the topic of diabetes hindering the efforts to stop this epidemic?

**MH:** As physicians, we are trained to offer medication or surgery to solve diabetes (and disease in general), when the real causes include poor quality diet, nutritional deficiencies, hormonal imbalances, allergens, microbes, digestive imbalances, toxins, cellular energy problems, and stress. We think that treating the risk factors, such as high blood sugar, cholesterol, and blood pressure, with medications will help. But we don’t learn how to identify and treat the real causes of the disease. In truth, diabetes and elevated blood sugar, blood pressure, and cholesterol are simply symptoms that result from problems with diet, lifestyle, and environmental toxins interacting with our unique genetic susceptibilities.

**LE:** You mention that insulin resistance is the real cause of diabetesity. How so?

**MH:** Contrary to what most people think, type II diabetes and diabetesity are diseases of too much, not too little, insulin. Insulin is the real driver of problems with diabetesity. When your diet is full of empty calories and refined carbohydrates, your cells become resistant or numb to the effects of insulin. A higher insulin level is the first sign of a problem.

**LE:** And you say that few doctors order tests to find out the proper levels.

**MH:** Unfortunately, most doctors never test this. The higher your insulin levels are, the worse your insulin resistance. As the problem worsens, your body starts to lose muscle, gain fat, become inflamed, and you rapidly age and deteriorate.

**LE:** How else can insulin be deadly to our bodies?

**MH:** Too much insulin, the fat storage hormone, also drives more inflammation and oxidative stress, and produces a myriad of downstream effects including high blood pressure, high cholesterol, low HDL, high triglycerides, poor sex drive, infertility, thickening of the blood, and increased risk of cancer, Alzheimer’s, and depression.

**LE:** In your book, you tackle several myths about obesity and diabetes, one being that they are genetic conditions inherited through genes. Is this true?

**MH:** Your genes provide the instruction book for all the proteins in your body, which control your physiology and biology. You may have a genetic predisposition to diabetes or obesity, but you are not predestined. Every moment,



you have the power to transform your gene expression and reverse disease by changing the messages and instructions you send to your DNA. You can “turn off” the genes your grandmother “turned on” generations ago.

**LE:** How is the initial use of insulin for treatment of diabetes a “slippery slope” as you call it?

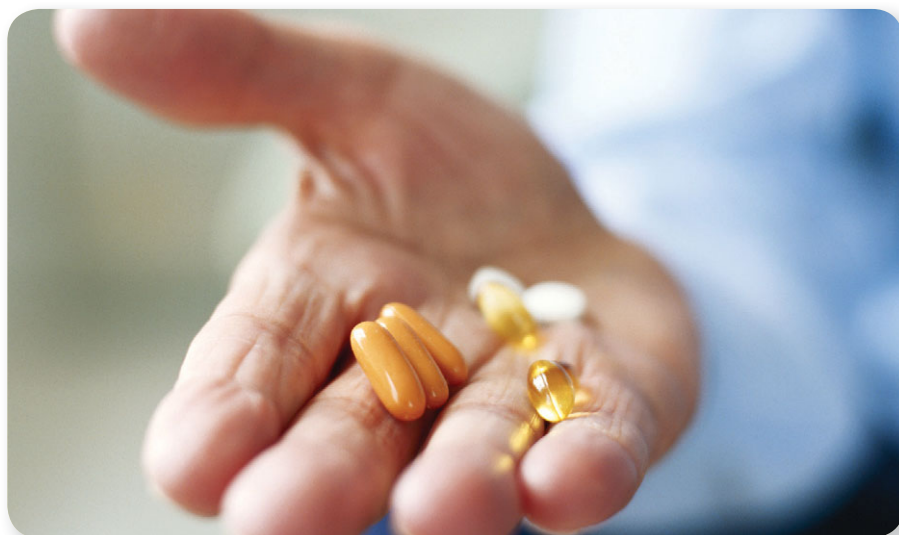
**MH:** Increased insulin dosage often leads to increased weight gain, higher blood pressure, and elevated cholesterol. Blood sugar improves, but overall risk of heart disease does not. That is why insulin should be the last resort.

**LE:** Explain the concept of the “toxic triad” that profits off the sickness of Americans. This is a powerful and sad truth in our society.

**MH:** One of the leading products of the American food industry has become patients for the American health care industry. The toxic triad of Big Farming, Big Food, and Big Pharma profits from a nation of sick and fat citizens. The government essentially stands in line next to you in fast-food chains helping you buy cheeseburgers, fries, and cola. Our nationwide food stamp program pays for \$4 billion in soft drinks for the poor every day. That is about 29 million servings a day!

**LE:** And then we go to our doctors and they may tell us that we have normal blood sugar levels, but we still might have pre-diabetes for other reasons.

**MH:** Most doctors would guarantee **100%** that you don’t have pre-diabetes if you have normal blood sugar (under **100 mg/dL**) or a normal glucose tolerance test (when your blood sugar is measured 2 hours after a sugary drink). Unfortunately, they’d be **100%** wrong. Many of my patients have



perfectly normal blood sugars but sky high insulin levels and every other metabolic breakdown that goes with pre-diabetes.

**LE:** In addition to the metabolic breakdown, chronic stress can play a crucial role in diabetes development as well.

**MH:** Chronic stress increases the production of cortisol, the main stress hormone. Chronically elevated cortisol causes increased blood sugar, elevated cholesterol levels, depression, and even dementia, and promotes the accumulation of belly fat that we so commonly see in patients with insulin resistance or diabetes.

**LE:** You offer several stress reducing techniques in your book that people can learn about, but you also talk about how important reducing inflammation is.

**MH:** Anything that causes inflammation, will, in turn, cause insulin resistance. And anything that causes insulin resistance will cause inflammation. This dangerous spiral is at the root of so many of our twenty-first century maladies. The inflammation that drives obesity and chronic disease is invisible and doesn’t hurt. It is

a hidden, smoldering fire created by your immune system as it tries to fight off bad food, stress, toxins, food allergens, an overgrowth of bad bugs in your gut, and even low-grade infections.

**LE:** Once a person has a diagnosis, lifestyle and diet changes are a must. In addition, you recommend several nutritional supplement strategies to implement as well. Why is that?

**MH:** Nutritional supplements are an essential and effective part of diabetes treatment. Mild diabetes requires moderate nutritional support; more advanced cases, including diabetes, require intensive nutrition therapy. Large-scale deficiencies of nutrients in our population, including omega-3 fats, vitamin D, folate, zinc, and magnesium, have been well documented. It may seem like a paradox, but obesity and malnutrition often go hand in hand.

**LE:** What supplements do you recommend?

**MH:** Everyone needs a good, high-quality, high-potency, complete multivitamin, fish oil, and vitamin D. I also recommend probiotics because modern life, diet,



as well as antibiotics and other drugs damage our gut ecosystem, which is important to keeping us healthy and thin.

**LE:** How do herbs like green tea and cinnamon help in the fight against diabetes?

**MH:** Cinnamon and catechins from green tea are helpful in controlling blood sugar and improving insulin sensitivity. Green tea can even increase fat burning and metabolism.

**LE:** While you are on the cutting edge of supplement usage, far too many doctors still reach for a prescription drug first for their patients. What are your thoughts on the use of medication for controlling/fighting diabetes?

**MH:** One of the most important studies in medicine, the Diabetes Prevention Program, found that medication did not work nearly as well as lifestyle changes, and this effect lasted even ten years after the study. The only medication that I sometimes find helpful is metformin. It is well tolerated, has been around a long time, and has been well studied. Most of the other medications cause serious complications or make things worse by boosting insulin levels and increasing the risk of death and heart attacks.

**LE:** From Big Pharma to Big Agriculture to general physician apathy, it seems that it is becoming increasingly important for people to take responsibility for their own health, rather than to listen to what the government or large corporations tell them. You touch upon this in your 'take back our health' movement.

**MH:** Our food choices are influenced by government subsidies for agricultural mass production

of poor-quality fats and sugars. The government food pyramid reflects industry interests, not science, although the 2010 Dietary Guidelines for Americans report and the new "MyPlate" initiative are a step in the right direction.

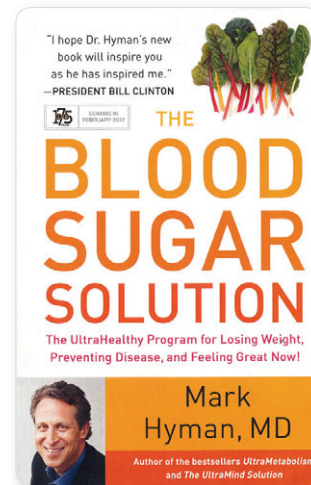
**LE:** You made several suggestions during the health care debate that were not implemented due to politics. What were they?

**MH:** During the health reform process, Dr. Dean Ornish, founder of the Preventive Medicine Research Institute; Dr. Michael Roizen, Chief Wellness Officer of the Cleveland Clinic; and I helped Senators Harkin, Wyden, and Cornyn introduce the *Take Back Your Health Act of 2009*, designed to reimburse patients with heart disease, diabetes, and prediabetes for intensive lifestyle treatment. Net savings in direct health care costs were estimated at \$930 billion over 10 years. The bill was left on the cutting room floor of the senate in last-minute horse trading. Afterward, in a two-hour meeting with Senator Harkin, I implored that our only goal was to have policy reflect science. He paused for a moment and remarked, "That would make too much sense."

**LE:** That is infuriating. What are some policies you'd like to see implemented to help us have a healthier nation?

**MH:** In no particular order, here is a sampling of what I mention in my book: subsidizing the production of fruits and vegetables, incentivizing supermarkets to open in poor communities, taxing sugar, fix perverse financial incentives in health care reimbursement, and end the irresponsible relationships between medicine and industry. There are many more. ●

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



Mark Hyman, MD, was co-medical director of Canyon Ranch for ten years and is now the chairman of the Institute for Functional Medicine and founder and medical director of the UltraWellness Center. He is the *New York Times* bestselling author of *UltraMetabolism*, *The UltraMind Solution*, and *The UltraSimple Diet*. For more information on Dr. Mark Hyman visit [www.drhyman.com](http://www.drhyman.com).

To order ***The Blood Sugar Solution: The UltraHealthy Program for Losing Weight, Preventing Disease, and Feeling Great Now***, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com).

Item # 33859  
Retail price \$27.99  
Member price \$20.99

# Top Off Your TESTOSTERONE *Naturally*

Low Testosterone Levels May Lead to:

**Reduced Sex Drive • Less Energy**  
**Cloudy Thinking • Weight Gain**  
**Cardiovascular Issues**

Maintaining healthy testosterone levels is one of the most important steps you can take to regain your health and improve your performance. With research showing that by the time a man is 60 years old, he may produce 60% less testosterone than he did in his 20s, the time is now to add Life Extension®'s Super MiraForte with Standardized Lignans to your supplement regimen.

Each daily dose of Super MiraForte with Standardized Lignans contains the following testosterone supporting ingredients:

1500 mg	Chrysin
15 mg	Bioperine®
850 mg	Muira puama
282 mg	Nettle root
15 mg	Chelated elemental zinc
320 mg	Maca
33.4 mg	HMRlignan™
	Norway Spruce lignan extract



Item # 01698

The retail price for a bottle of 120 capsules of **Super MiraForte with Standardized Lignans** is **\$62**. If a member buys four bottles, the price is reduced to **\$42** per bottle.

**To order Super MiraForte with Standardized Lignans**  
**call 1-800-544-4440**  
**or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

**Super Health. Super Libido.**  
*Super MiraForte.*

Caution: If you are taking any medication, use only under physician supervision. Men with existing prostate cancer may not be able to use this product. Elevations in free testosterone can unmask an occult (hidden) prostate cancer. Anyone with this concern should have a baseline PSA prior to using this product and a follow-up PSA test 60 days later. If a significant elevation of PSA is found, discontinue this product and advise physician. Do not take more than 15 mg per day of Bioperine®.

Bioperine® is a registered trademark of Sabinsa Corp. HMRlignan™ is a registered trademark used under sublicense from Linnea S.A.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



# IS IT LOW T?

TAKE  
THE TEST  
←

PLEASE ANSWER YES OR NO

- |  | YES | NO |
|--|-----|----|
| 1. DO YOU HAVE A DECREASE IN LIBIDO (SEX DRIVE)?                           |     |    |
| 2. DO YOU HAVE A LACK OF ENERGY?   |     |    |
| 3. DO YOU HAVE A DECREASE IN STRENGTH AND/OR ENDURANCE?                    |     |    |
| 4. HAVE YOU LOST HEIGHT?   |     |    |
| 5. HAVE YOU NOTICED A DECREASED "ENJOYMENT OF LIFE?"                       |     |    |
| 6. ARE YOU SAD AND/OR GRUMPY?  |     |    |
| 7. ARE YOUR ERECTIONS LESS STRONG?   |     |    |
| 8. HAVE YOU NOTICED A RECENT DETERIORATION IN YOUR ABILITY TO PLAY SPORTS? |     |    |
| 9. ARE YOU FALLING ASLEEP AFTER DINNER?                                    |     |    |
| 10. HAS THERE BEEN A RECENT DETERIORATION IN YOUR WORK PERFORMANCE?        |     |    |

The above ADAM® questionnaire was developed by John E. Moley, M.D., B.Ch.  
It is to be used solely as a screening tool to assist a physician in diagnosing  
androgen (testosterone) deficiency. \*Androgen Deficiency in the Aging Male.

IF YOU HAVE ANSWERED YES TO #1, #7, OR ANY THREE OTHERS, YOU  
MAY HAVE SYMPTOMS ASSOCIATED WITH LOW TESTOSTERONE.

**CALL AAG HEALTH**  
**1.888.387.0999**  
**TO DISCUSS TREATMENT OPTIONS**

THE LEADING HORMONE  
REPLACEMENT SPECIALISTS  
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**CALL FOR A COMPLEMENTARY  
GUIDE TO HORMONE THERAPY**

OVER 20 LOCATIONS  
NATIONWIDE



## Enhanced Night Vision!

# EYE PROTECTION FORMULA

### 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 and meso-zeaxanthin** to help maintain macular density.

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

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

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

### Comprehensive Ocular Protection in One Daily Softgel

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

<b>OptiLut®, Lutein Plus® and MZ®</b>	<b>38 mg</b>
Marigold ( <i>Tagetes erecta</i> ) extract (flower) [free lutein equivalent 10 mg]	
<b>Zeaxanthin &amp; Meso-zeaxanthin blend</b>	<b>3.75 mg</b>
[Paprika ( <i>capsicum annum</i> ) extract (fruit), <b>OptiLut®, Lutein Plus®</b> and <b>MZ®</b> Marigold Extract (flower)]	
<b>C3G</b> (Cyanidin-3-glucoside)	<b>2.2 mg</b>
[from European black currant ( <i>Ribes nigrum</i> ) extract (fruit)]	

The retail price for a bottle containing 60 softgels of **Super Zeaxanthin with Lutein, Meso-Zeaxanthin and C3G** is \$22. If a member buys four bottles, the price is reduced to **\$14.85** per bottle.



Item # 01685

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LuteinPlus® and MZ® are registered trademarks of Nutriproducts Ltd., 7  
Marfleet, CB22 5LA, UK, licensed under US Patents 6,218,436 & 6,329,432.

#### References

1. Available at: <http://www.aafp.org/afp/20000401/2159.html>. Accessed August 10, 2010.
2. *Alt Med Rev.* 2000;5(6):553-62.

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





For the past 30 years, the Life Extension Foundation® has stated that the most important step one can take to prevent disease cannot be found in a bottle of pills. The true cornerstone of any preventive health care program is annual blood screening. Proactive blood screening can help you greatly reduce your risk of disorders such as heart and kidney disease, stroke, liver conditions, anemia, and diabetes. Plus it's particularly valuable in helping you prevent and treat symptoms associated with hormone imbalance, such as fatigue, memory impairment, bone loss, weight gain, and depression. Blood testing remains one of the most important things you can do for yourself and your loved ones. More than any other measure, annual blood testing holds tremendous potential to protect both yourself and your loved ones.

#### Five Easy Steps:

1. Call **1-800-208-3444** to discuss and place your order with one of our knowledgeable health advisors. (This order form can also be faxed to 1-866-728-1050 or mailed.) Online orders can also be placed at **www.lef.org/blood**
2. After your order is placed, you will be mailed either a requisition form to take to your local LabCorp Patient Service Center or a Blood Draw Kit, whichever is applicable. (Please note: If a blood draw kit is used, an additional local draw fee may be incurred.)
3. Have your blood drawn.
4. Your blood test results will be mailed, emailed, or faxed directly to you by Life Extension.
5. Take the opportunity to discuss the results with one of our knowledgeable health advisors by calling 1-800-226-2370; or review the results with your personal physician.

It's that simple! Don't delay—call today!

#### For Our Local Members:

For those residing in the Ft. Lauderdale, Florida area, blood-draws are also performed at the Life Extension Nutrition Center from 9:00 am to 2:00 pm Monday through Saturday. Simply purchase the blood test and have it drawn with no wait! Our address is 5990 North Federal Highway, Ft. Lauderdale, FL, 33308-2633.

ANNUAL

# Blood Test

April 1-June 3, 2013 **SUPER SALE**

## LIFE EXTENSION'S SUGGESTIONS FOR ANNUAL SCREENING (Member Prices\*)

### MEN'S ANNUAL BLOOD TESTING

	(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE
<input type="radio"/> <b>MALE LIFE EXTENSION PANEL (LC322582)</b> CBC/Chemistry Profile (description on next page) DHEA-S PSA (prostate-specific antigen) Homocysteine C-Reactive Protein (high-sensitivity) Free Testosterone Total Testosterone Estradiol TSH for thyroid function Vitamin D (25-hydroxyvitamin D) Hemoglobin A1c	\$400	\$199
<div>NEW &amp; IMPROVED NOW INCLUDES HbA1c</div>		
<input type="radio"/> <b>MALE HORMONE ADD-ON PANEL† (LCADDM)</b> Pregnenolone and Dihydrotestosterone (DHT) To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel. This panel provides information about a testosterone metabolite that can affect the prostate; and the hormone pregnenolone that acts as a precursor to all other steroid hormones.	\$206.75	\$116.25
<input type="radio"/> <b>THYROID ADD-ON PANEL (LCTHYROID)</b> Free T3 & Free T4.	\$73.33	\$36
<input type="radio"/> <b>OMEGA SCORE™*** (LCOMEGA)</b> Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.	\$175	\$99
<input type="radio"/> <b>COENZYME Q10† (LC120251)</b> Research is revealing that maintaining higher blood levels of CoQ10 may offer greater health benefits. This test measures blood levels of CoQ10.	\$132	\$74.25
<input type="radio"/> <b>VAP™ TEST (LC804500)</b> The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. This test includes measurements of LDL particle size and lipoprotein subclasses.	\$120	\$67.50
<input type="radio"/> <b>FOOD SAFE ALLERGY TEST** (LCM73001)</b> This test measures delayed (IgG) food allergies for 95 common foods.	\$264	\$148.50

### WOMEN'S ANNUAL BLOOD TESTING

	(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE
<input type="radio"/> <b>FEMALE LIFE EXTENSION PANEL (LC322535)</b> CBC/Chemistry Profile (description on next page) DHEA-S Estradiol Homocysteine C-Reactive Protein (high-sensitivity) Progesterone Free Testosterone Total Testosterone TSH for thyroid function Vitamin D (25-hydroxyvitamin D) Hemoglobin A1c	\$400	\$199
<div>NEW &amp; IMPROVED NOW INCLUDES HbA1c</div>		
<input type="radio"/> <b>FEMALE HORMONE ADD-ON PANEL† (LCADDF)</b> Pregnenolone and Total Estrogen To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides information about total estrogen status; and the hormone pregnenolone that acts as a precursor to all other steroid hormones.	\$166.75	\$93.75
<input type="radio"/> <b>THYROID ADD-ON PANEL (LCTHYROID)</b> Free T3 & Free T4.	\$73.33	\$36
<input type="radio"/> <b>OMEGA SCORE™*** (LCOMEGA)</b> Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.	\$175	\$99
<input type="radio"/> <b>COENZYME Q10† (LC120251)</b> Research is revealing that maintaining higher blood levels of CoQ10 may offer greater health benefits. This test measures blood levels of CoQ10.	\$132	\$74.25
<input type="radio"/> <b>VAP™ TEST (LC804500) (UPDATED)</b> The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. This test includes measurements of LDL particle size and lipoprotein subclasses.	\$120	\$67.50
<input type="radio"/> <b>FOOD SAFE ALLERGY TEST** (LCM73001)</b> This test measures delayed (IgG) food allergies for 95 common foods.	\$264	\$148.50

### SUGGESTED ADDITIONS TO ANNUAL BLOOD TESTING

<input type="radio"/> <b>INSULIN (LC004333)</b> Helpful to assess insulin resistance.	\$33.33	\$23.25
<input type="radio"/> <b>CORTISOL (LC004051)</b> This test is used to help assess adrenal function.	\$52	\$29.25
<input type="radio"/> <b>LP-PLA2 (PLAC® TEST) (LC123240)</b> 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.	\$175	\$93.75
<input type="radio"/> <b>HEAVY METALS PANEL (BLOOD) (LC100003)</b> This panel contains mercury, arsenic, and aluminum.	\$265.33	\$149.25
<input type="radio"/> <b>FERRITIN (LC004598)</b> Used to evaluate iron stores in the body and to determine iron deficiency anemia.	\$37	\$21
<input type="radio"/> <b>VITAMIN B12/FOLATE (LC000810)</b> This test measures the amount of vitamin B12 and folate in the blood.	\$44	\$24.75

\* For non-member pricing call **1-800-208-3444**.

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



## OTHER POPULAR PANELS

	(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE
<input type="radio"/> <b>CBC/CHEMISTRY PROFILE (LC381822)</b>	\$47	\$26
<b>Note: This CBC/Chemistry Profile is included in many Life Extension Panels. Please note panel descriptions.</b>		
<b>CARDIOVASCULAR RISK PROFILE</b>		
Total Cholesterol	Cholesterol/HDL Ratio	
HDL Cholesterol	Estimated CHD Risk	
LDL Cholesterol	Glucose	
Triglycerides		
<b>LIVER FUNCTION PANEL</b>		
AST (SGOT)	Total Bilirubin	
ALT (SGPT)	Alkaline phosphatase	
LDH		
<b>KIDNEY FUNCTION PANEL</b>		
BUN	BUN/Creatinine Ratio	
Creatinine	Uric Acid	
<b>BLOOD PROTEIN LEVELS</b>		
Total Protein	Globulin	
Albumin	Albumin/Globulin Ratio	
<b>BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE</b>		
Red Blood Cell Count	Monocytes	
White Blood Cell Count	Lymphocytes	
Eosinophils	Platelet Count	
Basophils	Hemoglobin	
Neutrophils (Absolute)	Hematocrit	
Lymphs (Absolute)	MCV	
Monocytes (Absolute)	MCH	
Eos (Absolute)	MCHC	
Baso (Absolute)	Neutrophils	
RDW		
<b>BLOOD MINERAL PANEL</b>		
Calcium	Sodium	
Potassium	Chloride	
Phosphorus	Iron	
<input type="radio"/> <b>FEMALE WEIGHT LOSS PANEL (LCWLF)</b>	\$398.67	\$224.25
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, C-Reactive Protein (high-sensitivity), Progesterone, free and total Testosterone, TSH, SHBG, Free T3, Free T4, Insulin.		
<input type="radio"/> <b>MALE WEIGHT LOSS PANEL (LCWLM)</b>	\$398.67	\$224.25
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, C-Reactive Protein (high-sensitivity), PSA, free and total Testosterone, TSH, SHBG, Free T3, Free T4, Insulin.		
<input type="radio"/> <b>COMPREHENSIVE THYROID PANEL (LC100018)</b>	\$265.33	<b>NEW</b> \$149.25
TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA.		
<input type="radio"/> <b>LIFE EXTENSION THYROID PANEL (LC304131)</b>	\$100	\$56.25
TSH, T4, Free T3, Free T4.		
<input type="radio"/> <b>FEMALE COMPREHENSIVE HORMONE PANEL† (LC100011)</b>	\$398.66	\$224.25
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		
<input type="radio"/> <b>MALE COMPREHENSIVE HORMONE PANEL† (LC100010)</b>	\$398.66	\$224.25
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		
<input type="radio"/> <b>MALE BASIC HORMONE PANEL (LC100012)</b>	\$100	\$56.25
DHEA-S, Estradiol, Total and Free Testosterone, PSA.		
<input type="radio"/> <b>FEMALE BASIC HORMONE PANEL (LC100013)</b>	\$100	\$56.25
DHEA-S, Estradiol, Total and Free Testosterone, Progesterone.		

	(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE
<input type="radio"/> <b>ENERGY PROFILE (LC100005)</b>	\$500	\$281.25
CBC/Chemistry Profile (see description), Epstein-Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferritin, Total and Free Testosterone, DHEA-S, Free T3, Free T4, Cortisol, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Insulin.		
<input type="radio"/> <b>ANEMIA PANEL (LC100006)</b>	\$114.66	\$64.50
CBC/Chemistry Profile (see description), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.		
<input type="radio"/> <b>INFLAMMATION PANEL (LC100007)</b>	\$180	\$101.25
CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.		
<input type="radio"/> <b>CARDIAC PLUS† (LC100008)</b>	\$193.33	\$108.75
CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine.		
<input type="radio"/> <b>VAP™ PLUS† (LC100009)</b>	\$440	\$247.50
VAP™, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.		
<input type="radio"/> <b>THYROID ANTIBODY PROFILE (LC100004)</b>	\$132	\$74.25
Thyroid Antithyroglobulin Antibody (ATA) and Thyroid Peroxidase Antibody (TPO).		
<input type="radio"/> <b>DIABESITY PANEL (LC100019)</b>	\$212	<b>NEW</b> \$119.25
Glucose, Insulin, HbA1c, VAP™, Cortisol, C-Reactive Protein.		
<b>SINGLE TESTS</b>		
<input type="radio"/> <b>ASPIRINWORKS™† (LC501620)</b>	\$198.66	\$111.75
Taking aspirin to prevent heart attack? Is it working? This is a random urine test used to measure your resistance to aspirin.		
<input type="radio"/> <b>INFLAMMATORY BOWEL SCREEN (LC164830)</b>	\$320	<b>NEW</b> \$180
pANCA, <i>Saccharomyces cerevisiae</i> IgA and IgG.		
<input type="radio"/> <b>VITAMIN D-25 HYDROXY (LC081950)</b>	\$62.67	\$30 <b>NEW LOW PRICE</b>
Add this test to any order for a <b>Super Sale Low Price of only \$30.</b>		

†Certain tests need to be shipped to the lab on dry ice for customers using a blood draw kit, and incur an additional \$35 charge. If you are going to LabCorp, this charge **does not** apply.

Blood Tests available only in the continental United States. Not available in Maryland.

This is NOT a complete listing of LE blood test services. Call 1-800-208-3444 for additional information.

## ORDER LIFESAVING BLOOD TESTS FROM VIRTUALLY ANYWHERE IN THE US!

### TERMS AND CONDITIONS

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.

Signature of Life Extension Member

X

Life Extension Foundation Members only

MEMBER NO.

☐ Male ☐ Female

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Date of Birth  
(required) / /

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State

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Mail your order form to:

**LifeExtension**  
NATIONAL DIAGNOSTICS, INC.

3600 West Commercial Boulevard  
Fort Lauderdale, FL 33309

Phone your order to: 1-800-208-3444

Fax your order to: 1-866-728-1050



# PRODUCTS

## AMINO ACIDS

Acetyl-L-Carnitine  
Acetyl-L-Carnitine-Arginate  
Branched Chain Amino Acids  
D, L-Phenylalanine Capsules  
Glycine Capsules  
L-Arginine Capsules  
Arginine/L-Ornithine Capsules  
L-Carnitine Capsules  
L-Carnitine Powder Natural Lemon Flavor  
L-Glutathione, L-Cysteine & C  
L-Glutamine Capsules  
L-Glutamine Powder  
L-Lysine Capsules  
L-Tyrosine Tablets  
Mega L-Glutathione Capsules  
N-Acetyl-L-Cysteine Capsules  
Optimized Carnitine with GlycoCarn®  
PharmaGABA  
Super Carnosine Capsules  
Taurine Capsules

## BONE & JOINT HEALTH

ArthroMax™ with Theaflavins and AprèsFlex™  
ArthroMax™ Advanced with UC-II® and  
AprèsFlex™  
Bone-Up™  
Bone Restore  
Bone Restore w/Vitamin K2  
Bone Strength Formula w/KoAct™  
Chondrox  
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  
Methylcobalamin Lozenges  
Neuro-Mag™ Magnesium L-Threonate  
Optimized Ashwagandha Extract  
Phosphatidylserine Capsules  
Rhodiola Extract  
Super Ginkgo Extract  
Vinpocetine

## DIGESTIVE

Bifido GI Balance  
Carnosoothe w/PicroProtect  
Digest RC™  
Enhanced Super Digestive Enzymes  
Extraordinary Enzymes  
Life Flora™  
Natural EsophaGuard  
Pancreatin  
Probiotic All-Flora®  
Probiotic Anti-Aging  
Regimint  
Theralac Probiotics

## DURK AND SANDY PRODUCTS

Blast™  
Dual-C  
Inner Power™  
Memory Upgrade™

## EYE CARE

Bilberry Extract  
Brite Eyes III  
Eye Pressure Support with Mirtogenol®  
Overxcast Polarized Sunglasses  
Solarshield Sunglasses

Super Zeaxanthin with Lutein &  
Meso-Zeaxanthin Plus Astaxanthin and C3G  
Super Zeaxanthin with Lutein &  
Meso-Zeaxanthin and C3G

## FIBER

AppleWise Polyphenol  
Fiber Food  
TruFiber®  
WellBetX PGX® Soluble Fiber Blend

## FOOD

Rich Rewards™ Black Bean Vegetable Soup  
Rich Rewards™ Spicy Cruciferous Vegetable Soup  
Rich Rewards™ Cruciferous Vegetable Soup  
Rich Rewards™ Lentil Soup  
Rich Rewards™ Coffee

## HAIR CARE

Dr. Proctor's Advanced Hair Formula  
Dr. Proctor's Shampoo  
Super-Absorbable Tocotrienols

## HEART HEALTH

AppleWise Polyphenol  
Advanced Lipid Control  
Aspirin (Enteric Coated)  
Cardio Peak™ w/Standardized Hawthorn and Arjuna  
Cho-Less™  
D-Ribose Capsules  
D-Ribose Powder  
Endothelial Defense™ with  
Full-Spectrum Pomegranate™  
Fibrinogen Resist  
Forskolin  
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  
Bio-Enhanced Astaxanthin w/Phospholipids  
Blueberry Extract  
Blueberry Extract w/Pomegranate  
Butterbur Extract w/Standardized  
Rosmarinic Acid  
Calcium D-Glucarate  
Enhanced Berry Complete with RZD™ Acai  
Full-Spectrum Pomegranate™  
Grapeseed Extract with Resveratrol &  
Pterostilbene  
Huperzine A  
Kyolic® Garlic Formula 102 + 105  
Kyolic® Reserve  
Mega Green Tea Extract  
Mega Green Tea Extract (Decaffeinated)  
(also w/CoffeeGenic™ Green Coffee Extract)  
Mega Lycopene Extract  
Optimized Ashwagandha Extract  
Optimized Garlic  
Pomegranate Extract  
Pomegranate Juice Concentrate  
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® 50+  
7-Keto® DHEA  
DHEA  
DHEA Complete  
GH Pituitary Support Day Formula  
GH Pituitary Support Night Formula  
Melatonin  
Melatonin Timed Release  
Natural Estrogen with Pomegranate Extract  
Pregnenolone  
ProgestaCare for Women  
Pure IGF  
Super Miraforte with Standardized Lignans

## IMMUNE ENHANCEMENT

AHCC® (Active Hexose Correlated Compound)  
Black Cumin Seed Oil  
Black Cumin Seed Oil w/Bio-Curcumin®  
Buffered Vitamin C Powder  
Echinacea Extract  
Enhanced Life Extension Whey Protein  
i26 Hyperimmune Egg  
Immune Modulator w/Proprietary Tinofend®  
Immune Protect with PARACTIN®  
Lactoferrin  
Norwegian Shark Liver Oil  
Optimized Fucoidan w/Maritech® 926  
ProBoost™ Thymic Protein A  
Pure Gar™  
Reishi Extract Mushroom Complex  
Vitamin C with Dihydroquercetin  
Zinc Lozenges with Vitamin C

## INFLAMMATORY REACTIONS

Arthro-Immune Joint Support  
ArthroMax™ with Theaflavins  
Boswella  
Bromelain (Specially-coated)  
DHA (Vegetarian Sourced)  
Fast Acting Joint Formula  
Ginger Force  
Krill Oil  
5-LOX Inhibitor w/AprèsFlex™  
Mega EPA/DHA  
Mega GLA with Sesame Lignans  
MSM  
Natural Relief 1222™ Cream  
Omega-3 Whirl  
Serraflazyme  
SODzyme™ with GliSODin® and Wolfberry  
Super Omega-3 EPA/DHA with Sesame  
Lignans & Olive Fruit Extract  
Tart Cherry  
Zyflamend® Whole Body

## LIVER HEALTH

Branch Chain Amino Acids  
N-Acetyl Cysteine  
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  
Iodoral  
Iron Protein Plus  
Magnesium  
Magnesium Citrate  
Only Trace Minerals  
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

## 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  
L-Theanine  
5 HTP  
Enhanced Natural Sleep® w/ Melatonin  
Enhanced Natural Sleep® w/o Melatonin  
Natural Stress Relief  
SAME  
St. John's Wort Extract  
L-Tryptophan  
Optimized Tryptophan Plus

## MOUTH CARE

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

## MULTIVITAMIN

Children's Formula Life Extension Mix  
Comprehensive Nutrient Packs Basic  
Comprehensive Nutrient Packs Advanced  
Life Extension Booster  
Life Extension Mix™ Capsules  
Life Extension Mix™ Powder  
Life Extension Mix™ Tablets  
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

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®  
Bioflavonoid Cream  
Broccoli Sprout  
Corrective Clearing Mask  
DNA Repair Cream  
Dual-Action MicroDermAbrasion  
Essential Plant Lipids Reparative Serum  
Face Master® Platinum  
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®  
Lifting & Tightening Complex  
Lycopene Cream  
Melatonin Cream  
Mild Facial Cleanser  
Neck Rejuvenating Antioxidant Cream  
Peel Off Cleansing Mask  
Pigment Correcting Cream  
(Ultra) Rejuvenex®  
Rejuvenex® Body Lotion  
Rejuvenex® Factor  
Rejuvenex® Factor Firming Serum  
Rejuvenating Serum  
Resveratrol Anti-Oxidant Serum  
Skin Lightening Serum  
Skin Restoring Phytoceramides w/Lipowheat™  
Skin Stem Cell Serum  
Stem Cell Cream w/Alpine Rose  
Supercritical Omega 7™  
Total Sun Protection Cream  
Ultra Rejuvenex®  
Ultra RejuveNight® w/o Progesterone  
Ultra Lip Plumper  
Ultra Wrinkle Relaxer  
Under Eye Refining Serum  
Under Eye Rescue Cream  
Vitamin C Serum  
Vitamin D Lotion  
Vitamin E-ssential Cream  
Vitamin K Healing Cream

## SOY

Natural Estrogen w/Pomegranate  
Super Absorbable Soy Isoflavones

## SPECIAL PURPOSE FORMULA

Anti-Alcohol Antioxidants w/HepatoProtection Complex  
Benfotiamine w/Thiamine  
Breast Health Formula  
Butterbur Extract w/Standardized Rosmarinic Acid  
Chlorella  
Chlorophyllin w/Zinc  
Green Coffee Extract CoffeeGenic™ (also w/Glucose control)  
Coriolus Super Strength  
CR Mimetic Longevity Formula  
Cinsulin® w/InSea2® and Crominex® 3+  
European Leg Solution Diosmin 95  
Fem Dophilus  
Femmenessence MacaPause®  
Hearos™ Ear Plugs  
Migra-eeze™

Natural Female Support  
Organic Total Body Cleanse  
Pecta-Sol®  
Potassium Iodide  
PQQ Caps w/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  
Enhanced Life Extension Protein  
DMG (N, N-dimethylglycine)  
L-Glutamine Capsules  
L-Glutamine Powder

## VITAMINS

Ascorbyl Palmitate Capsules  
B2  
B12  
Beta-Carotene  
Biotin Capsules  
Buffered Vitamin C Powder  
Complete B Complex  
Fast-C  
Folic Acid + B12  
Gamma E Tocopherol w/Sesame Lignans  
Gamma E Tocopherol/Tocotrienols  
Inositol Capsules  
Mega Lycopene Extract  
Methylcobalamin  
MK-7  
No-Flush Niacin  
Optimized Folate  
Super Ascorbate C Capsules  
Super Ascorbate C Powder  
Super K w/Advanced K2 Complex  
Tocotrienols w/Sesame Lignans  
Vitamin B3 (Niacin) Capsules  
Vitamin B6  
Vitamin B12 Tablets  
Vitamin C  
Vitamin D  
Vitamin D3  
Vitamin D3 w/Sea-Iodine™  
Vitamins D and K w/Sea-Iodine™  
Vitamin E  
Vitamin K1

## WEIGHT MANAGEMENT

Alli® Refill Pack  
Advanced Anti-Adipocyte Formula w/AdipoStat & Integra Lean®  
Calorie Control Weight Management™ Formula w/CoffeeGenic™ Green Coffee Extract  
CoffeeGenic™ Weight Management™ with 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  
Super CLA Blend w/Guarana and Sesame Lignans  
Super CLA Blend w/Sesame Lignans  
WellBetX PGX® Soluble Fiber Blend



# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
<b>A</b>					
01524	<b>ACETYL-L-CARNITINE</b> - 500 mg, 100 veg. caps	\$34.00	\$25.50		
	Buy 4 bottles, price each	30.00	22.50		
01525	<b>ACETYL-L-CARNITINE ARGINATE</b> - 100 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	50.99	38.24		
01628	<b>ADRENAL ENERGY FORMULA</b> - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01630	<b>ADRENAL ENERGY FORMULA</b> - 120 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	42.00	31.50		
01308	<b>ADVANCED LIPID CONTROL</b> - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01521	<b>ADVANCED ORAL HYGIENE</b> - 60 veg. mint lozenges	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00681	<b>AHCC</b> - 500 mg, 30 caps	59.98	44.99		
	Buy 4 bottles, price each	53.33	40.00		
*46925	<b>ALLI® REFILL PACK</b> - 120 caps	69.95	58.00		
00457	<b>ALPHA-LIPOIC ACID w/BIOTIN (SUPER)</b> - 250 mg, 60 caps	37.00	27.75		
	Buy 4 bottles, price each	32.00	24.00		
01440	<b>ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO</b> - 100 caps	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01509	<b>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT &amp; INTEGRA LEAN®(ADVANCED)</b> - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01625	<b>APPLEWISE POLYPHENOL EXTRACT</b> - 600 mg, 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	19.00	14.25		
01039	<b>ARGININE/ORNITHINE</b> - 500/250, 100 caps	16.00	12.00		
	Buy 4 bottles, price each	14.50	10.88		
00038	<b>ARGININE/ORNITHINE POWDER</b> - 150 grams	22.95	17.21		
	Buy 4 bottles, price each	19.00	14.25		
01624	<b>(L)-ARGININE CAPS</b> - 700 mg, 200 veg. caps	26.50	19.88		
	Buy 4 bottles, price each	23.25	17.44		
01617	<b>ARTHRONMAX™ w/THEAFLAVINS &amp; APRESFLEX™</b> - 120 veg. caps	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01618	<b>ARTHRONMAX™ ADVANCED w/UC-II® &amp; APRESFLEX™</b> - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01404	<b>ARTHRO-IMMUNE JOINT SUPPORT</b> - 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
00919	<b>ARTICHOKE LEAF EXTRACT</b> - 500 mg, 180 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.38	19.04		
01533	<b>ASCORBYL PALMITATE</b> - 500 mg, 100 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
00888	<b>ASHWAGANDHA EXTRACT (OPTIMIZED)</b> - 60 veg. caps	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
01066	<b>ASPIRIN</b> - 81 mg, 300 enteric coated tablets	6.00	4.50		
	Buy 4 bottles, price each	5.33	4.00		
00708	<b>ASTAXANTHIN</b> - 2 mg, 30 softgels	10.25	7.69		
01720	<b>ASTAXANTHIN WITH PHOSPHOLIPIDS (BIO-ENHANCED)</b> - 4 mg, 30 softgels	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		

**SUB-TOTAL OF COLUMN 1**

No.		Retail Each	Member Each	Qty	Total
<b>B</b>					
00920	<b>BENFOTIAMINE w/ THIAMINE</b> - 100 mg, 120 veg. caps	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.60	13.95		
00925	<b>BENFOTIAMINE (MEGA)</b> - 250 mg, 120 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01206	<b>BERRY COMPLETE</b> - 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	18.67	14.00		
01406	<b>BERRY COMPLETE w/RZD™ ACAI (ENHANCED)</b> - 60 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.00	19.50		
00664	<b>BETA-CAROTENE</b> - 25,000 IU, 100 softgels	11.25	8.44		
	Buy 4 bottles, price each	10.13	7.60		
01622	<b>BIFIDO GI BALANCE</b> - 60 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01073	<b>BILBERRY EXTRACT</b> - 100 mg, 100 veg. caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01512	<b>BIOACTIVE MILK PEPTIDES</b> - 30 caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01631	<b>BIO-COLLAGEN w/PATENTED UC-II®</b> - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
*01006	<b>BIOSIL™</b> - 5 mg, 30 veg. caps	18.95	15.16		
*01007	<b>BIOSIL™</b> - 1 fl oz	29.99	23.99		
00102	<b>BIOTIN</b> - 600 mcg, 100 caps	7.50	5.63		
	Buy 4 bottles, price each	6.50	4.88		
01709	<b>BLACK CUMIN SEED OIL</b> - 60 softgels	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01710	<b>BLACK CUMIN SEED OIL w/BIO-CURCUMIN®</b> - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	30.00	22.50		
01008	<b>BLAST™</b> - 600 grams of powder	26.95	20.21		
51526	<b>BLENDER</b> - 28 oz bottle	8.99	6.74		
70000	<b>BLOOD PRESSURE MONITOR</b> - ARM CUFF (medium)	99.95	64.97		
70004	<b>BLOOD PRESSURE MONITOR</b> - WRIST (travel size)	69.95	52.46		
01214	<b>BLUEBERRY EXTRACT</b> - 60 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
01438	<b>BLUEBERRY EXTRACT w/ POMEGRANATE</b> - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01611	<b>BONE RESTORE</b> - 150 caps	22.50	16.88		
	Buy 4 bottles, price each	19.50	14.63		
01711	<b>BONE RESTORE w/VITAMIN K2</b> - 150 caps	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01211	<b>BONE STRENGTH FORMULA w/KOACT®</b> - 120 caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
00313	<b>BONE-UP®</b> - 240 caps	28.95	21.71		
	Buy 4 bottles, price each	27.21	20.41		
01379	<b>BOOSTER</b> - 60 softgels	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01680	<b>BOOSTER w/ADVANCED K2 COMPLEX (SUPER)</b> - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01661	<b>BORON</b> - 3 mg, 100 veg. caps	5.95	4.46		
	Buy 4 bottles, price each	5.25	3.94		
00202	<b>BOSWELLA</b> - 100 caps	38.00	28.50		
	Buy 4 bottles, price each	30.00	22.50		

**SUB-TOTAL OF COLUMN 2**

No.		Retail Each	Member Each	Qty	Total
01253	<b>BRANCHED CHAIN AMINO ACIDS</b> - 90 veg. caps Buy 4 bottles, price each	\$19.50 17.00	\$14.63 12.75		
01699	<b>BREAST HEALTH FORMULA</b> - 60 veg. caps Buy 4 bottles, price each	34.00 30.00	25.50 22.50		
00893	<b>BRITE EYES III</b> - 2 vials, 5 ml each Buy 4 boxes, price each	34.00 32.00	25.50 24.00		
01203	<b>BROMELAIN (SPECIALLY-COATED)</b> - 500 mg, 60 enteric coated tablets Buy 4 bottles, price each	21.00 19.00	15.75 14.25		
00884	<b>BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID</b> - 60 softgels Buy 4 bottles, price each	44.00 39.60	33.00 29.70		
<b>C</b>					
01653	<b>CALCIUM CITRATE w/VITAMIN D</b> - 300 veg. caps Buy 4 bottles, price each	\$24.00 21.25	\$18.00 15.94		
01651	<b>CALCIUM D-GLUCARATE</b> - 200 mg, 60 veg. caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
01693	<b>CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR</b> - 414 grams powder Buy 4 jars, price each Buy 8 jars, price each	60.00 54.00 50.00	45.00 40.50 37.50		
01694	<b>CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR</b> - 60 individual packs Buy 4 boxes, price each Buy 8 boxes, price each	64.00 60.00 56.00	48.00 45.00 42.00		
01700	<b>CARDIO PEAK™ w/STANDARDIZED HAWTHORN &amp; ARJUNA</b> - 120 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00916	<b>CARNITINE w/GLYCOCARN® (OPTIMIZED)</b> - 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01532	<b>L-CARNITINE</b> - 500 mg, 30 veg. caps Buy 4 bottles, price each	15.00 13.20	11.25 9.90		
01719	<b>L-CARNITINE POWDER NATURAL LEMON FLAVOR</b> - 114 grams Buy 4 jars, price each	28.00 24.00	21.00 18.00		
01258	<b>CARNOSOOTHIE w/PICROPROTECT™</b> - 60 veg. caps Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
01687	<b>CARNOSINE (SUPER)</b> - 500 mg, 90 veg. caps Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01003	<b>CAT MIX</b> - 100 grams powder Buy 4 jars, price each	15.00 12.00	11.25 9.00		
01659	<b>CDP CHOLINE CAPS</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
00998	<b>CELL SENSOR-EMF DETECTION METER</b>	39.95	29.95		
01370	<b>CHILDREN'S FORMULA LIFE EXTENSION MIX™</b> - 100 chewable tablets Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00550	<b>CHLORELLA</b> - 500 mg, 200 tablets Buy 4 bottles, price each	23.50 21.00	17.63 15.75		
01571	<b>CHLOROPHYLLIN w/ZINC</b> - 100 mg, 100 veg. caps Buy 4 bottles, price each	24.00 20.00	18.00 15.00		
01359	<b>CHO-LESS™</b> - 90 capsules	32.50	24.38		
01477	<b>CHROMIUM ULTRA</b> - 100 veg. caps Buy 4 bottles, price each	24.00 21.00	18.00 15.75		
01504	<b>CHROMIUM W/CROMINEX® 3+ (OPTIMIZED)</b> - 500 mcg, 60 veg. caps Buy 4 bottles, price each	9.00 8.00	6.75 6.00		

**SUB-TOTAL OF COLUMN 3**

No.		Retail Each	Member Each	Qty	Total
01503	<b>CINSULIN® W/INSEA® AND CROMINEX® 3+</b> - 90 veg. caps Buy 4 bottles, price each	\$38.00 34.00	\$28.50 25.50		
00818	<b>CLA BLEND w/SESAME LIGNANS (SUPER)</b> - 1000 mg, 120 softgels Buy 4 bottles, price each Buy 10 bottles, price each	36.00 33.00 26.33	27.00 24.75 19.75		
00819	<b>CLA BLEND w/GUARANA &amp; SESAME (SUPER)</b> -1000 mg, 120 softgels Buy 4 bottles, price each	42.00 38.33	31.50 28.75		
01707	<b>COFFEEGENIC™ WEIGHT MANAGEMENT™ w/GREEN COFFEE EXTRACT</b> - 90 veg. caps Buy 4 bottles, price each	48.00 42.00	36.00 31.50		
01697	<b>COGNITEX® w/PREGNENOLONE &amp; NEUROPROTECTION COMPLEX</b> - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	74.00 66.60 58.89	55.50 49.95 44.17		
01696	<b>COGNITEX® w/o PREGNENOLONE w/NEUROPROTECTION COMPLEX</b> - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	72.00 64.00 56.96	54.00 48.00 42.72		
01421	<b>COGNITEX® BASICS</b> - 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	38.00 35.00 32.00	28.50 26.25 24.00		
01542	<b>COMPLETE B-COMPLEX</b> - 60 veg. caps Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
01795	<b>COMPREHENSIVE NUTRIENT PACKS BASIC</b> - 30 packs Buy 4 boxes, price each	48.00 44.00	36.00 33.00		
01796	<b>COMPREHENSIVE NUTRIENT PACKS ADVANCED</b> - 30 packs Buy 4 boxes, price each	90.00 82.00	67.50 61.50		
00119	<b>COPPER CAPSULES</b> - 2 mg, 100 caps Buy 4 bottles, price each	9.91 8.96	7.43 6.72		
00949	<b>COQ10™ w/ #LIMONENE (SUPER ABSORBABLE)</b> - 50 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	25.00 22.00 20.00	18.75 16.50 15.00		
00950	<b>COQ10™ w/ #LIMONENE (SUPER ABSORBABLE)</b> - 100 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	66.00 60.00 56.00	49.50 45.00 42.00		
01226	<b>COQ10 (SUPER UBIQUINOL)</b> - 100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	56.00 52.00 48.00	42.00 39.00 36.00		
01426	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	62.00 56.00 52.00	46.50 42.00 39.00		
01425	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -50 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	58.00 53.00 50.00	43.50 39.75 37.50		
01427	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -50 mg, 30 softgels Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01431	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -200 mg, 30 softgels Buy 4 bottles, price each Buy 10 bottles, price each	62.00 56.00 52.00	46.50 42.00 39.00		
01053	<b>CORIOLUS SUPER STRENGTH</b> - 600 mg, 150 veg. caps	99.95	74.96		

**SUB-TOTAL OF COLUMN 4**



# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
<b>C CONTINUED</b>					
80140	<b>COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS</b> - .33 oz	\$49.00	\$36.75		
	Buy 2 bottles, price each	42.00	31.50		
80139	<b>COSMESIS AMBER SELF MICRODERMABRASION</b> - 2 oz	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80118	<b>COSMESIS ANTI-AGING MASK</b> - 2 oz	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
80134	<b>COSMESIS ANTI-GLYCATION SERUM</b> - 1 oz	33.00	24.75		
	<b>W/BLEUBERRY &amp; POMEGRANATE EXTRACTS</b>				
	Buy 2 bottles, price each	31.35	23.51		
80133	<b>COSMESIS ANTIOXIDANT FACIAL MIST</b> - 2 oz	32.00	24.00		
	Buy 2 bottles, price each	30.40	22.80		
80127	<b>COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM</b> - 2 oz	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		
80128	<b>COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB</b> - 2 oz	59.00	44.25		
	Buy 2 jars, price each	51.92	38.94		
80117	<b>COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM</b> - 2 oz	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
80121	<b>COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB</b> - 2 oz	58.00	43.50		
	Buy 2 jars, price each	51.04	38.28		
80105	<b>COSMESIS ANTI-REDNESS &amp; BLEMISH LOTION</b> - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80147	<b>COSMESIS BIOFLAVONOID CREAM</b> - 1 oz jar	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80144	<b>COSMESIS BROCCOLI SPROUT CREAM</b> - 1 oz	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80120	<b>COSMESIS CORRECTIVE CLEARING MASK</b> - 2 oz	64.50	48.38		
	Buy 2 jars, price each	56.76	42.57		
80141	<b>COSMESIS DNA REPAIR CREAM</b> - 1 oz jar	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80108	<b>COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM</b> - 1 oz	74.95	56.21		
	Buy 2 bottles, price each	65.95	49.46		
80123	<b>COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM</b> - 2 oz	69.50	52.13		
	Buy 2 jars, price each	61.16	45.87		
80107	<b>COSMESIS FINE LINE-LESS</b> - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80131	<b>COSMESIS HAIR SUPPRESS FORMULA</b> - 4 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80137	<b>COSMESIS HEALING FORMULA ALL-IN-ONE CREAM</b> - 1 oz	53.00	39.75		
	Buy 2 jars, price each	45.43	34.07		
80115	<b>COSMESIS HEALING MASK</b> - 2 oz	64.50	48.38		
	Buy 2 bottles, price each	56.76	42.57		
80102	<b>COSMESIS HEALING VITAMIN K CREAM</b> - 1 oz	79.50	59.63		
	Buy 2 bottles, price each	69.96	52.47		
80109	<b>COSMESIS HYALURONIC FACIAL MOISTURIZER</b> - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80110	<b>COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER</b> - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80138	<b>COSMESIS HYDRATING ANTI-OXIDANT FACE MIST</b> - 4 oz	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50		
80103	<b>COSMESIS LIFTING &amp; TIGHTENING COMPLEX</b> - 1 oz	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
80146	<b>COSMESIS LYCOPENE CREAM</b> - 1 oz jar	\$28.00	\$21.00		
	Buy 2 jars, price each	25.40	19.05		
80135	<b>COSMESIS MELATONIN CREAM</b> - 1 oz	33.00	24.75		
	Buy 2 jars, price each	27.10	20.33		
80114	<b>COSMESIS MILD FACIAL CLEANSER</b> - 8 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80122	<b>COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM</b> - 2 oz	64.00	48.00		
	Buy 2 jars, price each	56.32	42.24		
80111	<b>COSMESIS PIGMENT CORRECTING CREAM</b> - 1/2 oz	74.00	55.50		
	Buy 2 bottles, price each	65.12	48.84		
80106	<b>COSMESIS REJUVENATING SERUM</b> - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80142	<b>COSMESIS RESVERATROL ANTI-OXIDANT SERUM</b> - 1 oz	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
80112	<b>COSMESIS SKIN LIGHTENING SERUM</b> - 1/2 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80130	<b>COSMESIS SKIN STEM CELL SERUM</b> - 1 oz	74.00	55.50		
	Buy 2 bottles, price each	69.00	51.75		
80143	<b>COSMESIS STEM CELL CREAM W/ALPINE ROSE</b> - 1 oz jar	66.00	49.50		
	Buy 2 jars, price each	58.00	43.50		
80148	<b>COSMESIS TIGHTENING &amp; FIRMING NECK CREAM</b> - 2 oz jar	39.00	29.25		
	Buy 2 jars, price each	35.00	26.25		
80116	<b>COSMESIS ULTRA LIP PLUMPER</b> - 1/3 oz	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	<b>COSMESIS ULTRA WRINKLE RELAXER</b> - 1 oz	89.95	67.46		
	Buy 2 bottles, price each	79.76	59.82		
80113	<b>COSMESIS UNDER EYE REFINING SERUM</b> - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80104	<b>COSMESIS UNDER EYE RESCUE CREAM</b> - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80129	<b>COSMESIS VITAMIN C SERUM</b> - 1 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80136	<b>COSMESIS VITAMIN D LOTION</b> - 4 oz	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25		
80145	<b>COSMESIS VITAMIN E-ESSENTIAL CREAM</b> - 1 oz	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
00862	<b>CRAN-MAX®</b> - 500 mg, 60 veg. caps	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
01424	<b>CRAN-MAX® with UTI-ROSE™ (OPTIMIZED)</b> - 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01529	<b>CREATINE CAPSULES</b> - 120 veg. caps	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
01646	<b>CREATINE WHEY GLUTAMINE POWDER</b> - 454 grams (vanilla)	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01429	<b>CR MIMETIC LONGEVITY FORMULA</b> - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
*33840	<b>CRWAY GREAT GLUCOSE CONTROL CD</b>	98.00	82.00		
**CRWAY	<b>CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE</b>	195.00	195.00		
00407	<b>CURCUMIN® (SUPER BIO)</b> - 400 mg, 60 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		

**SUB-TOTAL OF COLUMN 6**

To order online visit: [www.LifeExtension.com](http://www.LifeExtension.com)

No.		Retail Each	Member Each	Qty	Total
<b>D</b>					
00658	<b>7-KETO® DHEA METABOLITE</b> - 25 mg, 100 caps	\$28.00	\$21.00		
	Buy 4 bottles, price each	24.00	18.00		
01479	<b>7-KETO® DHEA METABOLITE</b> - 100 mg, 60 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
01640	<b>DHA (VEGETARIAN SOURCED)</b> - 200 mg, 30 veg. softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00607	<b>DHEA</b> - 25 mg, 100 tablets (dissolve in mouth)	14.00	10.50		
	Buy 4 bottles, price each	11.75	8.81		
01478	<b>DHEA COMPLETE</b> - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	43.20	32.40		
00335	<b>DHEA</b> - 25 mg, 100 caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
00454	<b>DHEA</b> - 15 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	12.00	9.00		
00882	<b>DHEA</b> - 50 mg, 60 caps	19.00	14.25		
	Buy 4 bottles, price each	17.00	12.75		
01689	<b>DHEA</b> - 100 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01358	<b>DIGEST RC</b> - 30 tablets	19.95	14.96		
	Buy 4 boxes, price each	17.00	12.75		
01272	<b>DIGESTIVE ENZYMES (ENHANCED SUPER)</b> - 100 veg. caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01671	<b>D,L-PHENYLALANINE CAPSULES</b> - 500 mg, 100 veg. caps	18.75	14.06		
	Buy 4 bottles, price each	16.00	12.00		
01540	<b>DMAE BITARTRATE</b> - 150 mg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
00059	<b>DMG</b> - 125 mg, 60 tablets	22.80	17.10		
	Buy 4 boxes, price each	21.00	15.75		
01570	<b>DNA PROTECTION FORMULA</b> - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	32.00	24.00		
00544	<b>DOG MIX</b> - 100 grams powder	19.50	14.63		
	Buy 4 jars, price each	16.00	12.00		
00321	<b>DR. PROCTOR'S ADVANCED HAIR FORMULA</b> - 2 oz	39.95	29.96		
	Buy 4 bottles, price each	32.00	24.00		
00320	<b>DR. PROCTOR'S HAIR FORMULA SHAMPOO</b> - 8 oz	24.95	18.71		
	Buy 4 bottles, price each	22.00	16.50		
00899	<b>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE</b> - 2.4 oz	39.95	29.96		
	Buy 4 jars, price each	38.95	29.21		
01672	<b>DUAL-C</b> - 90 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.50	7.88		
<b>E</b>					
01528	<b>ECHINACEA EXTRACT</b> - 250 mg, 60 veg. caps	\$14.35	\$10.76		
	Buy 4 bottles, price each	12.50	9.38		
01498	<b>ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™</b> - 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
00997	<b>ENDOTHELIAL DEFENSE™ w/GLISODIN®</b> - 60 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
00625	<b>EPA/DHA (MEGA)</b> - 120 softgels	19.95	14.96		
	Buy 4 bottles, price each	18.00	13.50		
01042	<b>EUROPEAN LEG SOLUTION DIOSMIN 95</b> - 600 mg, 30 veg. tabs	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		

**SUB-TOTAL OF COLUMN 7**

# Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01706	<b>EXTRAORDINARY ENZYMES</b> - 60 caps	\$26.00	\$19.50		
	Buy 4 bottles, price each	24.00	18.00		
01514	<b>EYE PRESSURE SUPPORT w/MIRTOGENOL®</b> - 30 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
<b>F</b>					
01054	<b>FACE MASTER® PLATINUM</b>	\$199.00	\$199.00		
00965	<b>FAST-ACTING JOINT FORMULA</b> - 30 caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01717	<b>FAST-C w/DIHYDROQUERCETIN</b> - 120 veg. tabs	26.00	19.50		
	Buy 4 bottles, price each	24.00	18.00		
20053	<b>FEM DOPHILUS®</b> - 30 caps	25.95	19.46		
20055	<b>FEM DOPHILUS®</b> - 60 caps	39.95	29.96		
01064	<b>FEMMENESSENCE MACAPAUZE®</b> - 120 veg. caps	34.99	26.24		
01311	<b>FERNBLOCK® w/SENDARA®(ENHANCED)</b> - 30 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	35.00	26.25		
01670	<b>FIBER FOOD CAPS</b> - 200 veg. caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
	Buy 10 bottles, price each	13.00	9.75		
00718	<b>FIBRINOGEN RESIST™</b> - 30 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	44.00	33.00		
01439	<b>FOLATE (OPTIMIZED) (L-METHYL FOLATE)</b> 1000 mcg - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01641	<b>FOLIC ACID + B12 CAPSULES</b> - 200 veg. caps	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
00300	<b>FORSKOLIN</b> - 10 mg, 60 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
01513	<b>FUCOIDAN w/MARITECH® 926 (OPTIMIZED)</b> - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
00993	<b>FUCOXANTHIN-SLIM™</b> - 90 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.00	29.25		
<b>G</b>					
00559	<b>GAMMA E TOCOPHEROL/TOCOTRIENOLS</b> - 60 softgels	\$42.00	\$31.50		
	Buy 4 bottles, price each	37.00	27.75		
00759	<b>GAMMA E TOCOPHEROL w/SESAME LIGNANS</b> - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01394	<b>(OPTIMIZED) GARLIC</b> - 200 veg. caps	24.95	18.71		
	Buy 4 bottles, price each	21.00	15.75		
01301	<b>GH PITUITARY SUPPORT DAY FORMULA</b> - 120 vegetarian tabs	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01302	<b>GH PITUITARY SUPPORT NIGHT FORMULA</b> - 120 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.50	16.88		
01228	<b>GINGER FORCE</b> - 60 softgels	29.95	22.46		
01658	<b>GINKGO BILOBA CERTIFIED EXTRACT™</b> - 120 mg, 365 veg. caps	46.00	34.50		
	Buy 2 bottles, price each	43.50	32.63		
01648	<b>GINKGO EXTRACT 28/7 (SUPER)</b> - 120 mg, 100 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.50	19.88		
00756	<b>GLA WITH SESAME LIGNANS (MEGA)</b> - 60 softgels	19.50	14.63		
	Buy 4 bottles, price each	18.00	13.50		
00345	<b>(L) GLUTAMINE CAPSULES</b> - 500 mg, 100 caps	14.95	11.21		
	Buy 4 bottles, price each	13.50	10.13		
00141	<b>(L)-GLUTAMINE POWDER</b> - 100 grams	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		

**SUB-TOTAL OF COLUMN 8**

LIFE EXTENSION LEG MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

MAY 2013



# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
<b>G CONTINUED</b>					
00522	<b>GLUCOSAMINE/CHONDROITIN CAPSULES</b> - 100 caps	\$38.00	\$28.50		
	Buy 4 bottles, price each	32.00	24.00		
01541	<b>GLUTATHIONE, CYSTEINE &amp; C</b> - 100 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00314	<b>L-GLUTATHIONE (MEGA)</b> - 250 mg, 60 caps	39.64	29.73		
	Buy 4 bottles, price each	35.68	26.76		
01669	<b>GLYCINE</b> - 1,000 mg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.80	8.10		
01091	<b>GRAPE EXTRACT w/RESVERATROL (WHOLE)</b> - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01411	<b>GRAPE SEED EXTRACT w/RESVERATROL &amp; PTEROSTILBENE</b> - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01604	<b>GREEN COFFEE EXTRACT COFFEEGENIC™</b> - 200 mg, 90 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
01620	<b>GREEN COFFEE EXTRACT COFFEEGENIC™</b> - 400 mg, 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
00953	<b>GREEN TEA EXTRACT (MEGA)</b> - lightly caffeinated - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.50	19.88		
00954	<b>GREEN TEA EXTRACT (MEGA)</b> - decaffeinated - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.50	19.88		
<b>H</b>					
01074	<b>5 HTP</b> - 100 mg, 60 caps	\$27.95	\$20.96		
01675	<b>HCA</b> - 90 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.50	11.63		
01629	<b>HEAROS™ EAR PLUGS</b> - 1 pack - regular size	14.00	10.50		
01393	<b>HEPATOPRO</b> - 900 mg, 60 softgels	50.00	37.50		
	Buy 4 bottles, price each	46.00	34.50		
01435	<b>HOMOCYSTEINE RESIST</b> - 100 caps	24.00	18.00		
	Buy 4 bottles, price each	21.60	16.20		
01527	<b>HUPERZINE A</b> - 200 mcg, 60 veg caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00661	<b>HYDRODERM®</b> - 1 oz	79.95	59.96		
	Buy 2 bottles, price each	65.33	49.00		
<b>I</b>					
*01060	<b>i26® HYPERIMMUNE EGG</b> - 140 grams powder	\$49.99	\$42.00		
01704	<b>IMMUNE MODULATOR W/PROPRIETARY TINOFEND®</b> - 60 veg. caps	17.00	12.75		
	Buy 4 bottles, price each	15.00	11.25		
00955	<b>IMMUNE PROTECT W/PARACTIN®</b> - 30 veg. caps	29.50	22.13		
	Buy 4 bottles, price each	26.55	19.91		
01049	<b>INNERPOWER™</b> - 555 grams powder	42.00	31.50		
01674	<b>INOSITOL CAPSULES</b> - 1000 mg, 360 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		
01292	<b>INTEGRA-LEAN® AFRICAN MANGO IRVINGIA</b> - 150 mg, 60 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01002	<b>IODORAL®</b> - 180 tabs	50.00	37.50		
01677	<b>IRON PROTEIN PLUS</b> - 300 mg, 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
01492	<b>IRVINGIA W/PHASE 3™</b> - 120 veg. caps	56.00	42.00		
	<b>CALORIE CONTROL COMPLEX (OPTIMIZED AFRICAN MANGO)</b>				
	Buy 4 bottles, price each	48.00	36.00		

**SUB-TOTAL OF COLUMN 9**

MAY 2013

No.		Retail Each	Member Each	Qty	Total
<b>J, K</b>					
00056	<b>JARRO-DOPHILUS EPS™</b> - 60 veg. caps	\$22.95	\$17.21		
01387	<b>JARRO-DOPHILUS ORAL PROBIOTIC GUM</b> - Pom-Berry flavor, 8 pieces	4.95	3.71		
01388	<b>JARRO-DOPHILUS ORAL PROBIOTIC LOZENGE</b> - Pom-Berry flavor, 8 pieces	4.95	3.71		
01724	<b>K w/ADVANCED K2 COMPLEX (SUPER)</b> - 90 softgels	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01600	<b>KRILL HEALTHY JOINT FORMULA</b> - 30 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01050	<b>(NKO) KRILL OIL</b> - 60 softgels	33.95	25.46		
00316	<b>KYOLIC® GARLIC FORMULA 102</b> - 200 caps	26.45	19.84		
	Buy 4 bottles, price each	23.00	17.25		
00214	<b>KYOLIC® GARLIC FORMULA 105</b> - 200 caps	27.45	20.59		
	Buy 4 bottles, price each	25.00	18.75		
00789	<b>KYOLIC® RESERVE</b> - 600 mg, 120 caps	27.95	20.96		
	Buy 4 bottles, price each	25.00	18.75		
<b>L</b>					
01681	<b>LACTOFERRIN (APOLACTOFERRIN) CAPS</b> - 60 caps	\$48.00	\$36.00		
	Buy 4 bottles, price each	44.00	33.00		
00020	<b>LECITHIN</b> - 16 oz. granules	15.00	11.25		
	Buy 4 jars, price each	12.50	9.38		
01755	<b>LIFE EXTENSION MIX™</b> - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
01757	<b>LIFE EXTENSION MIX™ W/EXTRA NIACIN</b> - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
01754	<b>LIFE EXTENSION MIX™</b> - 490 caps	110.00	82.50		
	Buy 4 bottles, price each	98.00	73.50		
	Buy 10 bottles, price each	85.00	63.75		
01756	<b>LIFE EXTENSION MIX™ POWDER</b> - 14.81 oz	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	72.00	54.00		
01765	<b>LIFE EXTENSION MIX™</b> - 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		
01767	<b>LIFE EXTENSION MIX™ W/EXTRA NIACIN</b> 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		
01764	<b>LIFE EXTENSION MIX™</b> - 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		
01766	<b>LIFE EXTENSION MIX™ POWDER</b> - 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	<b>LIFE FLORA™</b> - 300 mg, 120 caps	20.50	15.38		
	Buy 4 bottles, price each	18.75	14.06		
01608	<b>LIVER EFFICIENCY FORMULA</b> - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01639	<b>5-LOX INHIBITOR W/APRESFLEX™</b> - 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01678	<b>L-LYSINE</b> - 620 mg, 100 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		

**SUB-TOTAL OF COLUMN 10**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

No.		Retail Each	Member Each	Qty	Total
01470	<b>LURALEAN® CAPS SPECIAL PROPOLMANNAN</b> PARTICLE SIZE - 120 veg. caps Buy 4 bottles, price each	\$28.00 25.00	\$21.00 18.75		
00455	<b>LYCOPENE EXTRACT (MEGA)</b> - 15 mg, 90 softgels Buy 4 bottles, price each	35.00 30.00	26.25 22.50		
<b>M</b>					
01369	<b>MAGNESIUM CAPS</b> - 500 mg, 100 veg. caps Buy 4 bottles, price each	\$10.00 9.00	\$7.50 6.75		
01682	<b>MAGNESIUM CITRATE</b> - 160 mg, 100 veg. caps Buy 4 bottles, price each	9.00 7.50	6.75 5.63		
01668	<b>MELATONIN</b> - 300 mcg, 100 veg. caps Buy 4 bottles, price each	5.75 5.00	4.31 3.75		
01083	<b>MELATONIN</b> - 500 mcg, 200 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00329	<b>MELATONIN</b> - 1 mg, 60 caps Buy 4 bottles, price each	5.00 4.63	3.75 3.47		
00330	<b>MELATONIN</b> - 3 mg, 60 caps Buy 4 bottles, price each	8.00 6.88	6.00 5.16		
01786	<b>MELATONIN</b> - 3 mg, 60 veg. tabs Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
00331	<b>MELATONIN</b> - 10 mg, 60 caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
00332	<b>MELATONIN</b> - 3 mg, 60 veg. lozenges Buy 4 bottles, price each	8.00 6.88	6.00 5.16		
01787	<b>MELATONIN TIME RELEASE</b> - 300 mcg, 100 veg. tabs Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
01788	<b>MELATONIN TIME RELEASE</b> - 750 mcg, 60 veg. tablets Buy 4 bottles, price each	8.00 7.00	6.00 5.25		
01536	<b>METHYLCOBALAMIN</b> - 1 mg, 60 lozenges (vanilla) Buy 4 bottles, price each	9.95 8.00	7.46 6.00		
01537	<b>METHYLCOBALAMIN</b> - 5 mg, 60 lozenges (vanilla) Buy 4 bottles, price each Buy 10 bottles, price each	32.00 25.00 23.00	24.00 18.75 17.25		
00709	<b>MIGRA-EEZE™ (BUTTERBUR)</b> - 60 softgels Buy 4 bottles, price each	29.50 26.33	22.13 19.75		
01522	<b>MILK THISTLE (CERTIFIED EUROPEAN)</b> - 750 mg, 60 veg. caps Buy 4 bottles, price each	34.00 30.00	25.50 22.50		
01517	<b>MILK THISTLE (CERTIFIED EUROPEAN)</b> - 120 veg. caps Buy 4 bottles, price each	52.00 48.00	39.00 36.00		
01698	<b>MIRAFORTE w/STANDARDIZED LIGNANS (SUPER)</b> - 120 caps Buy 4 bottles, price each	62.00 56.00	46.50 42.00		
01569	<b>MITOCHONDRIAL BASICS w/BIOPQQ™</b> - 30 caps Buy 4 bottles, price each	52.00 46.00	39.00 34.50		
01578	<b>MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ™</b> - 120 caps Buy 4 bottles, price each	94.00 84.00	70.50 63.00		
00803	<b>MIST ORAL III w/COQ10</b> - 2 fl oz Buy 4 bottles, price each	28.00 25.33	21.00 19.00		
00065	<b>MK-7</b> - 90 mcg, 60 softgels Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01279	<b>MOUTHWASH w/POMEGRANATE</b> - 16 oz Buy 4 bottles, price each	18.50 17.00	13.88 12.75		
00451	<b>MSM (METHYLSULFONYLMETHANE)</b> - 1000 mg, 100 caps Buy 4 bottles, price each	14.00 11.95	10.50 8.96		

SUB-TOTAL OF COLUMN 11

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

No.		Retail Each	Member Each	Qty	Total
<b>N</b>					
01534	<b>N-ACETYL-L-CYSTEINE</b> - 600 mg, 60 veg. caps Buy 4 bottles, price each	\$14.00 13.50	\$10.50 10.13		
00066	<b>NATTOKINASE</b> - 60 softgels	25.50	19.13		
00891	<b>NATURAL APPETITE CONTROL</b> - 90 softgels Buy 4 bottles, price each	28.00 25.20	21.00 18.90		
00984	<b>NATURAL BP MANAGEMENT</b> - 60 tablets Buy 4 bottles, price each	42.00 37.80	31.50 28.35		
00913	<b>NATURAL ESOPHAGUARD</b> - 10 softgels Buy 2 boxes, price each	19.95 19.00	14.96 14.25		
01692	<b>NATURAL ESTROGEN w/POMEGRANATE EXTRACT</b> - 60 caplets Buy 4 bottles, price each	38.00 33.00	28.50 24.75		
01221	<b>NATURAL FEMALE SUPPORT</b> - 30 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
01471	<b>NATURAL GLUCOSE ABSORPTION CONTROL</b> - 60 veg. caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
00698	<b>NATURAL RELIEF 1222™</b> - 2 oz Buy 4 tubes, price each	28.00 25.00	21.00 18.75		
01626	<b>NATURAL SEX FOR WOMEN® 50+ (ADVANCED)</b> - 90 veg. caps Buy 4 bottles, price each	59.00 45.33	44.25 34.00		
01084	<b>NATURAL SLEEP®</b> - 3 mg, 60 veg. caps Buy 4 bottles, price each	12.99 10.00	9.74 7.50		
01507	<b>NATURAL SLEEP® (ENHANCED) w/ MELATONIN</b> - 30 caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01511	<b>NATURAL SLEEP® (ENHANCED) w/O MELATONIN</b> - 30 caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01085	<b>NATURAL SLEEP MELATONIN®</b> - 5 mg, 60 caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00987	<b>NATURAL STRESS RELIEF</b> - 30 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
01603	<b>NEURO-MAG™ MAGNESIUM L-THREONATE</b> - 90 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
01602	<b>NEURO-MAG™ L-THREONATE w/CALCIUM &amp; VITAMIN D</b> 205 grams - Lemon flavor Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00373	<b>NO-FLUSH NIACIN</b> - 800 mg, 100 caps Buy 4 bottles, price each	19.00 17.00	14.25 12.75		
<b>O</b>					
01623	<b>OLIVE LEAF VASCULAR SUPPORT</b> - 500 mg, 60 veg. caps Buy 4 bottles, price each	\$22.00 20.00	\$16.50 15.00		
01483	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	18.00 16.00 14.00	13.50 12.00 10.50		
01482	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 120 softgels Buy 4 bottles, price each Buy 10 bottles, price each	32.00 28.00 24.90	24.00 21.00 18.68		
01484	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> Buy 4 bottles, price each Buy 10 bottles, price each	34.00 31.00 28.00	25.50 23.25 21.00		

SUB-TOTAL OF COLUMN 12



# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
O CONTINUED					
01485	<b>OMEGA 3 EPA/DHA W/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 60 enteric coated softgels	\$20.00	\$15.00		
	Buy 4 bottles, price each	18.00	13.50		
	Buy 10 bottles, price each	16.00	12.00		
01619	<b>OMEGA 3 EPA/DHA W/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> (SMALL SOFTGEL)	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01632	<b>OMEGA-3 LEMON WHIRL</b> - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01633	<b>OMEGA-3 TROPICAL WHIRL</b> - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01701	<b>ONE-PER-DAY</b> - 60 tablets	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01328	<b>ONLY TRACE MINERALS</b> - 90 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
00915	<b>OPTIZINC®</b> - 30 mg, 90 veg. caps	5.95	4.46		
	Buy 4 bottles, price each	5.00	3.75		
01070	<b>ORGANIC TOTAL BODY CLEANSE™</b> - 14-day supply	34.99	26.24		
P					
00073	<b>PANCREATIN</b> - 500 mg, 50 caps	\$13.22	\$9.92		
	Buy 4 bottles, price each	12.12	9.09		
01323	<b>PEAK ATP® WITH GLYCOCARN®</b> - 60 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	56.00	42.00		
00342	<b>PECTA SOL-C® MODIFIED CITRUS PECTIN</b> - 454 grams powder	99.95	74.96		
	Buy 4 jars, price each	95.70	71.78		
01080	<b>PECTA SOL-C® MODIFIED CITRUS PECTIN</b> - 270 veg. caps	69.95	52.46		
00673	<b>PGX™ SOLUBLE FIBER BLEND (WELLBETX®)</b> -180 caps	34.95	26.21		
00865	<b>PHARMAGABA™</b> - 60 chewable tablets	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
01676	<b>PHOSPHATIDYLSERINE CAPS</b> - 100 mg, 100 veg. caps	54.00	40.50		
	Buy 4 bottles, price each	48.00	36.00		
01390	<b>PHOSPHOMEGA®</b> - 60 softgels	39.95	26.96		
00561	<b>POLICOSANOL</b> - 10 mg, 60 tablets	24.00	18.00		
	Buy 6 bottles, price each	18.00	13.50		
01423	<b>POMEGRANATE™ (FULL-SPECTRUM)</b> - 30 softgels	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
00956	<b>POMEGRANATE EXTRACT</b> - 30 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.55	13.16		
00957	<b>POMEGRANATE JUICE CONCENTRATE</b> - 16 oz. liquid	25.95	19.46		
	Buy 4 bottles, price each	24.00	18.00		
00577	<b>POTASSIUM IODIDE</b> - 1 box, 14 tablets	6.95	5.21		
	Buy 4 boxes, price each	5.25	3.94		
01500	<b>PQQ CAPS W/BIOPQQ™</b> - 10 mg, 30 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01647	<b>PQQ CAPS W/BIOPQQ™</b> - 20 mg, 30 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00302	<b>PREGNENOLONE</b> - 50 mg, 100 caps	26.00	19.50		
	Buy 4 bottles, price each	22.00	16.50		
00700	<b>PREGNENOLONE</b> - 100 mg, 100 caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		

SUB-TOTAL OF COLUMN 13

MAY 2013

No.		Retail Each	Member Each	Qty	Total
***01373	<b>PRELOX® NATURAL SEX FOR MEN®</b> - 60 tablets	\$52.00	\$39.00		
	Buy 4 bottles, price each	48.00	36.00		
01329	<b>PROBIOTIC ALL-FLORA®</b> - 60 veg. caps	25.95	19.46		
01326	<b>PROBIOTIC ANTI-AGING™</b> - 90 veg. caps	30.95	23.21		
00525	<b>PROBOOST THYMIC PROTEIN A™</b> - 4 mcg, 30 packets	59.95	44.96		
01441	<b>PROGESTACARE FOR WOMEN</b> - 4 oz cream	34.95	26.21		
01695	<b>PROSTATE FORMULA W/APRESFLEX™ STAND. LIGNANS (ULTRA NAT)</b> 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
01742	<b>PROTEIN-ISOLATE (WHEY) VANILLA</b> - 1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01743	<b>PROTEIN-ISOLATE (WHEY) CHOCOLATE</b> - 1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01508	<b>PTEROPURE™</b> - 50 mg Pterostilbene 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	30.00	22.50		
01075	<b>PURE PLANT PROTEIN</b> - Natural Vanilla 450 grams powder	36.00	27.00		
	Buy 4 jars, price each	33.00	24.75		
01209	<b>PUMPKIN SEED EXTRACT (WATER-SOLUBLE)</b> - 60 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01210	<b>PUMPKIN SEED EXT w/SOY ISOFLAVONES (WATER-SOLUBLE)</b> - 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01637	<b>PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT</b> -100 mg, 60 veg. caps	64.00	48.00		
	Buy 4 bottles, price each	60.00	45.00		
01217	<b>PYRIDOXAL 5'-PHOSPHATE</b> - 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
Q, R					
01309	<b>QUERCETIN (OPTIMIZED)</b> - 250 mg, 60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
01030	<b>RED YEAST RICE</b> (Bluebonnet)- 600 mg, 60 veg. caps	17.50	13.13		
00979	<b>RED YEAST RICE</b> (Nature's Plus)- 600 mg, 60 veg. caps	23.95	17.96		
00060	<b>RED YEAST RICE EXTENDED RELEASE</b> - 30 veg. tablets	21.50	16.13		
00605	<b>REGIMINT</b> - 60 enteric-coated caps	19.95	14.96		
	Buy 4 bottles, price each	18.67	14.00		
01708	<b>REISHI EXTRACT MUSHROOM COMPLEX</b> - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01448	<b>REJUVENEX® BODY LOTION</b> - 6 oz	24.00	18.00		
	Buy 4 tubes, price each	19.80	14.85		
	Buy 8 tubes, price each	17.00	12.75		
00918	<b>REJUVENEX® FACTOR</b> - 1.7 oz airless pump	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	<b>REJUVENEX® FACTOR FIRMING SERUM</b> - 1.7 oz	65.00	48.75		
	Buy 2 bottles, price each	50.66	38.00		
	Buy 6 bottles, price each	38.52	28.89		
01220	<b>REJUVENEX® (ULTRA)</b> - 2 oz	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	29.95		
00676	<b>REJUVENIGHT® (ULTRA)</b> - 2 oz	39.95	29.96		
	Buy 4 jars, price each	36.00	27.00		
01413	<b>RESVERATROL W/PTEROSTILBENE</b> - 20 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		

SUB-TOTAL OF COLUMN 14

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

To order online visit: [www.LifeExtension.com](http://www.LifeExtension.com)

No.		Retail Each	Member Each	Qty	Total
01410	<b>RESVERATROL W/PTEROSTILBENE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	\$36.00 32.00	\$27.00 24.00		
01430	<b>RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED)</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	46.00 41.33	34.50 31.00		
00889	<b>RHODIOLA EXTRACT</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	11.75 10.58	8.81 7.94		
00972	<b>(D) RIBOSE POWDER</b> - 150 grams Buy 4 jars, price each	27.50 24.75	20.63 18.56		
01473	<b>(D) RIBOSE TABLETS</b> - 100 veg. tabs Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
01609	<b>RICH REWARDS™ BREAKFAST GROUND COFFEE</b> - 12 oz. bag	13.00	9.75		
01610	<b>RICH REWARDS™ DECAFFEINATED ROAST GROUND COFFEE</b> - 12 oz. bag	14.00	10.50		
01712	<b>RICH REWARDS™ BLACK BEAN VEGETABLE SOUP</b> - 32 oz. bottle Buy 6 bottles, price each	13.00 12.25	9.75 9.19		
01530	<b>RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP</b> - 32 oz. bottle Buy 6 bottles, price each	11.95 11.25	8.96 8.44		
01531	<b>RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP</b> - 32 oz. bottle Buy 6 bottles, price each	11.95 11.25	8.96 8.44		
01705	<b>RICH REWARDS™ LENTIL VEGETABLE SOUP</b> - 32 oz. bottle Buy 6 bottles, price each	13.00 12.25	9.75 9.19		
01208	<b>R-LIPOIC ACID (SUPER)</b> - 300 mg, 60 veg. caps Buy 4 bottles, price each	49.00 45.00	36.75 33.75		
00070	<b>RNA CAPSULES</b> - 500 mg, 100 caps Buy 4 bottles, price each	17.95 16.16	13.46 12.12		
00917	<b>ROSMARINIC ACID EXTRACT</b> - 60 veg. caps Buy 4 bottles, price each	59.00 53.00	44.25 39.75		
<b>S</b>					
01432	<b>SAFFRON w/SATIAREAL (OPTIMIZED)</b> - 60 veg. caps Buy 4 bottles, price each	\$36.00 32.00	\$27.00 24.00		
00358	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each	16.00 14.00	12.00 10.50		
00453	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00557	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each	28.00 24.00	21.00 18.00		
01055	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01543	<b>SEA-IODINE™</b> - 1000 mcg, 60 caps Buy 4 bottles, price each	8.00 7.20	6.00 5.40		
00046	<b>SELENIUM</b> - 2 oz dropper bottle Buy 4 bottles, price each	9.95 9.45	7.46 7.09		
01679	<b>SE-METHYL L-SELENOCYSTEINE</b> - 200 mcg, 100 veg. caps Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
00318	<b>SERRAFLAZYME</b> - 100 tablets Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00284	<b>SHARK LIVER OIL (NORWEGIAN)</b> - 1000 mg, 30 softgels Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01684	<b>SILYMARIN</b> - 100 mg, 50 veg. caps Buy 4 bottles, price each	9.25 8.25	6.94 6.19		
01596	<b>SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT™</b> - 30 veg. liquid caps Buy 4 bottles, price each	25.00 23.00	18.75 17.25		

**SUB-TOTAL OF COLUMN 15**

# Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00961	<b>SODZYME® w/GLISODIN® AND WOLFERRY</b> - 90 veg. caps Buy 4 bottles, price each	\$28.00 24.00	\$21.00 18.00		
00657	<b>SOLARSHIELD SUNGLASSES</b> - 1 pair smoke color Buy 2 pairs, price each	12.99 11.50	9.74 8.63		
00432	<b>STEVIA EXTRACT</b> - 100 packets, 1 gram each Buy 4 boxes, price each	9.95 9.00	7.46 6.75		
01396	<b>ST. JOHN'S WORT EXTRACT</b> - 300 mg, 60 veg. caps Buy 4 bottles, price each	10.98 10.00	8.24 7.50		
01476	<b>STRONTIUM</b> - 750 mg, 90 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00747	<b>SUNGLASSES (OVERXCAS POLARIZED)</b> - gray color, large Buy 2 pairs, price each	27.00 21.00	20.25 15.75		
01649	<b>SUPER ABSORBABLE SOY ISOFLAVONES</b> - 60 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01408	<b>SUPER SAW PALMETTO/NETTLE ROOT W/BETA-SITOSTEROL</b> - 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	28.00 26.00 24.00	21.00 19.50 18.00		
01407	<b>SUPER SAW PALMETTO W/BETA-SITOSTEROL</b> - 30 softgels Buy 12 bottles, price each	15.00 12.00	11.25 9.00		
01778	<b>SUPER SELENIUM COMPLEX</b> - 200 mcg, 100 veg. caps Buy 4 bottles, price each Buy 12 bottles, price each	14.00 12.00 11.00	10.50 9.00 8.25		
<b>T</b>					
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01062	<b>TART CHERRY</b> - 600 mg, 60 caps	\$18.95	\$14.21		
00199	<b>TAURINE</b> - 1000 mg, 50 caps Buy 4 bottles, price each	8.95 8.00	6.71 6.00		
00133	<b>TAURINE POWDER</b> - 300 grams Buy 4 bottles, price each	20.00 16.88	15.00 12.66		
01304	<b>THEAFLAVIN STANDARDIZED EXTRACT</b> - 30 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01683	<b>(L) THEANINE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	24.00 20.50	18.00 15.38		
**01038	<b>THERALAC PROBIOTICS</b> - 30 caps	47.95	35.96		
00668	<b>THYROID FORMULA™ (METABOLIC ADVANTAGE)</b> - 100 caps	21.95	16.46		
00349	<b>TMG POWDER</b> - 50 grams Buy 4 bottles, price each	14.00 11.00	10.50 8.25		
01559	<b>TMG</b> - 500 mg, 60 veg. tablets Buy 4 boxes, price each	11.00 10.00	8.25 7.50		
00781	<b>TOCOTRIENOLS WITH SESAME LIGNANS</b> - 60 softgels Buy 4 bottles, price each	38.00 36.00	28.50 27.00		
01400	<b>TOCOTRIENOLS (SUPER-ABSORBABLE)</b> - 60 softgels Buy 4 bottles, price each	30.00 28.00	22.50 21.00		
01278	<b>TOOTHPASTE</b> - 4 oz (Mint) Buy 4 tubes, price each	9.50 8.67	7.13 6.50		
01274	<b>TOTAL SUN PROTECTION CREAM W/BETA GLUCAN</b> - 4 oz Buy 4 tubes, price each	28.00 25.20	21.00 18.90		
01468	<b>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT</b> - 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		

**SUB-TOTAL OF COLUMN 16**



# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
<b>T CONTINUED</b>					
01469	<b>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL</b> - 60 veg. caps	\$32.00	\$24.00		
	Buy 4 bottles, price each	29.60	22.20		
01386	<b>TRUFIBER®</b> - 180 grams	32.95	24.71		
01389	<b>TRUFLOA PROBIOTICS &amp; ENZYMES</b> - 32 veg. caps	42.95	32.21		
01722	<b>L-TRYPTOPHAN</b> - 500 mg, 90 veg. caps	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50		
01721	<b>TRYPTOPHAN PLUS (OPTIMIZED)</b> - 90 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01716	<b>TWO-PER-DAY</b> - 60 tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01715	<b>TWO-PER-DAY</b> - 120 tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01714	<b>TWO-PER-DAY</b> - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	<b>L-TYROSINE</b> - 500 mg, 100 tablets	12.98	9.74		
	Buy 4 bottles, price each	11.81	8.86		
<b>V</b>					
00213	<b>VANADYL SULFATE</b> - 7.5 mg, 100 tablets	\$15.00	\$11.25		
	Buy 4 bottles, price each	12.50	9.38		
00408	<b>VENOTONE</b> - 60 caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01327	<b>VINPOCETINE</b> - 10 mg, 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
01526	<b>VITAMIN B3 NIACIN</b> - 1,000 mg, 100 veg. caps	12.75	9.56		
	Buy 4 bottles, price each	12.00	9.00		
00372	<b>VITAMIN B3 NIACIN</b> - 500 mg, 100 caps	7.65	5.74		
	Buy 4 bottles, price each	6.65	4.99		
00098	<b>VITAMIN B5</b> - 500 mg, 100 caps (Pantothenic Acid)	10.50	7.88		
	Buy 4 bottles, price each	9.38	7.04		
01535	<b>VITAMIN B6</b> - 250 mg, 100 veg. caps	12.50	9.38		
	Buy 4 bottles, price each	11.00	8.25		
00361	<b>VITAMIN B12</b> - 500 mcg, 100 lozenges	8.75	6.56		
	Buy 4 bottles, price each	7.25	5.44		
01634	<b>VITAMIN C w/ DIHYDROQUERCETIN</b> - 1000 mg, 60 tablets	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
00927	<b>VITAMIN C w/ DIHYDROQUERCETIN</b> - 1000 mg, 250 tablets	25.50	19.13		
	Buy 4 bottles, price each	23.25	17.44		
00084	<b>VITAMIN C (BUFFERED) POWDER</b> - 454.6 grams	23.95	17.96		
	Buy 4 bottles, price each	22.00	16.50		
00864	<b>VITAMIN D3</b> - 2000 IU, 1 fl oz	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01753	<b>VITAMIN D3</b> - 1000 IU, 90 softgels	7.00	5.25		
	Buy 4 bottles, price each	6.00	4.50		
01751	<b>VITAMIN D3</b> - 1000 IU, 250 softgels	12.50	9.38		
	Buy 4 bottles, price each	11.25	8.44		
01713	<b>VITAMIN D3</b> - 5000 IU, 60 softgels	11.00	8.25		
	Buy 4 bottles, price each	9.90	7.43		
01718	<b>VITAMIN D3</b> - 7000 IU, 60 softgels	14.00	10.50		
	Buy 4 bottles, price each	12.60	9.45		

**SUB-TOTAL OF COLUMN 17**

MAY 2013

No.		Retail Each	Member Each	Qty	Total
01573	<b>VITAMIN D3 w/SEA-IODINE™</b> - 5000 IU, 60 caps	\$14.00	\$10.50		
	Buy 4 bottles, price each	12.50	9.38		
01572	<b>VITAMINS D AND K w/SEA-IODINE™</b> - 60 caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01663	<b>VITAMIN E (PURE NATURAL)</b> - 400 IU, 100 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	26.00	19.50		
01225	<b>VITAMIN K2 (LOW-DOSE)</b> - 45 mcg, 90 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
<b>Z</b>					
01686	<b>ZEAXANTHIN w/LUTEIN &amp; MESO-ZEAXANTHIN PLUS ASTAXANTHIN AND C3G (SUPER)</b> - 60 softgels	\$42.00	\$31.50		
	Buy 4 bottles, price each	38.00	28.50		
01685	<b>ZEAXANTHIN w/LUTEIN &amp; MESO-ZEAXANTHIN AND C3G (SUPER)</b> - 60 softgels	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
00061	<b>ZINC LOZENGES</b> - 75 lozenges	9.50	7.13		
	Buy 4 bottles, price each	6.75	5.06		
01051	<b>ZYFLAMEND® WHOLE BODY</b> - 120 softgels	60.95	45.71		

\* These products are not 25% off retail price.

\*\* Not eligible for member discount or member renewal product credit.

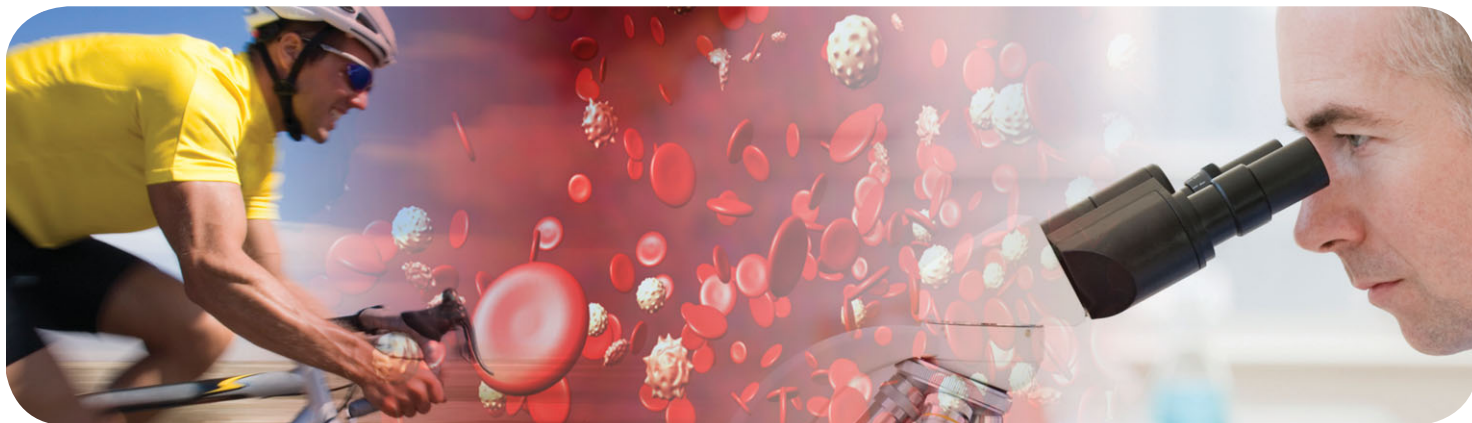
\*\*\* Due to license restrictions, this product is not for sale to customers outside of the USA.

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**SUB-TOTAL OF COLUMN 18**

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When you join the Life Extension Foundation®, we update you on the latest published medical research by sending you FREE books. Our most impressive publication is the 1,666-page *Disease Prevention and Treatment* protocol book that contains novel therapies to treat 133 common diseases of aging. *Disease Prevention and Treatment* is the only book that combines conventional and alternative therapies in order to implement a treatment regimen for fighting the multiple processes involved in degenerative disease.

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City  ST  ZIP

Email  Phone

☐ Check enclosed (payable to Life Extension Foundation®)

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SUB-TOTAL COLUMN 10	
SUB-TOTAL COLUMN 11	
SUB-TOTAL COLUMN 12	
SUB-TOTAL COLUMN 13	
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Shipping	
<small>UPS OVERNIGHT add \$16, UPS 2nd DAY AIR add \$7. For Puerto Rico, US Virgin Islands, Alaska &amp; Hawaii, add \$7. CANADA UPS EXPRESS Flat rate \$17.50, UK Flat rate \$25 USD. ALL OTHER INTERNATIONAL AIR WILL BE ADDED.</small>	
<b>GRAND TOTAL</b> (Must be in U.S. dollars)	

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33855	<b>POWER FOODS FOR THE BRAIN</b> • by Neal D. Barnard, MD	2013	\$26.99	\$20.24		
33854	<b>THE GREAT CHOLESTEROL MYTH</b> • by Jonny Bowden, PhD, CNS and Stephen Sinatra, MD	2012	\$19.99	\$14.99		
33853	<b>SMART, STRONG AND SEXY AT 100</b> • by David Kekich	2012	\$17.95	\$13.46		
33852	<b>THE MAGIC OF CHOLESTEROL NUMBERS</b> • by Dr. Sergey Dzigan	2012	\$29.95	\$22.46		
33848	<b>YOUR BEST INVESTMENT SECRETS TO A HEALTHY BODY AND MIND</b> • by Edwin Lee, MD	2012	\$24.95	\$18.71		
33847	<b>THE FATIGUE SOLUTION</b> • by Dr. Eva Cwynar	2012	\$24.95	\$18.71		
33844	<b>ABUNDANCE: THE FUTURE IS BETTER THAN YOU THINK</b> • by Steven Kotler and Petere Diamandis	2012	\$26.99	\$20.24		
33843	<b>BOMBSHELL</b> • by Suzanne Somers	2012	\$26.00	\$19.50		
33845	<b>DRUG MUGGERS</b> • by R.Ph. Susy Cohen	2012	\$21.99	\$16.49		
33842	<b>HEART ATTACK PROOF</b> • by Michael Ozner, MD	2012	\$19.95	\$14.96		
33839	<b>THE GOLDEN RATIO LIFESTYLE DIET</b> • by Robert Friedman, MD, and Matthew Cross	2012	\$19.95	\$14.96		
33838	<b>YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY</b> • by Gary Goldfaden, MD	2012	\$26.00	\$15.00		
33837	<b>WHEAT BELLY</b> • by William Davis, MD	2011	\$25.99	\$19.49		
33833	<b>THE LIFE PLAN</b> • by Jeffry S. Life, MD, PhD	2011	\$26.00	\$19.50		
33832	<b>YOUR BONES</b> • by Lara Pizzorno, MA, LMT	2011	\$12.00	\$9.00		
33829	<b>THE IMMORTALITY EDGE</b> • by Michael Fossel, MD, PhD, Greta Blackburn, David Woynarowski, MD	2011	\$25.95	\$18.17		
33825	<b>THE EMPOWERED PATIENT</b> • by Elizabeth Cohen	2010	\$15.00	\$10.50		
33824	<b>VITAMIN D SOLUTION</b> • by Michael F. Holick, PhD, MD	2010	\$25.95	\$18.17		
33822	<b>BREAKTHROUGH: EIGHT STEPS TO WELLNESS</b> • by Suzanne Somers (paperback)	2010	\$15.00	\$10.50		
33836	<b>WEIGHT LOSS GUIDE</b> • by Steven V. Joyal, MD and William Faloon (hardcover) (3rd Edition)	2010	\$29.95	\$8.99		
33816	<b>FDA: FAILURE, DECEPTION, ABUSE</b> • by Life Extension Foundation	2010	\$20.00	\$15.00		
33818	<b>STAY YOUNG &amp; SEXY WITH BIO-IDENTICAL HORMONE REPLACEMENT</b> • by Jonathan Wright, MD	2010	\$19.95	\$14.96		
33815	<b>KNOCKOUT</b> • by Suzanne Somers	2009	\$25.99	\$17.00		
33814	<b>CHEATING DEATH</b> • by Sanjay Gupta, MD	2009	\$24.99	\$17.49		
33812	<b>LIFE OVER CANCER</b> • by Keith Block, MD (hardcover)	2009	\$25.00	\$17.50		
33811	<b>THE GREAT AMERICAN HEART HOAX</b> • by Michael Ozner, MD, FACC, FAHA	2009	\$24.95	\$17.47		
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33808	<b>BREAKTHROUGH: EIGHT STEPS TO WELLNESS</b> • by Suzanne Somers	2008	\$25.95	\$18.17		
33599	<b>YOUNGER YOU</b> • by Eric Braverman, MD	—	\$24.95	\$15.75		
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33906	<b>THE MIGRAINE CURE</b> • by Sergey Dzigan, MD, PhD	2006	\$24.00	\$15.60		
33680	<b>PRESCRIPTION FOR DISASTER DVD</b> • by Gary Null	2005	\$18.00	\$12.00		
33670	<b>A PRIMER ON PROSTATE CANCER</b> (2nd edition) • by Stephen B. Strum, MD, and Donna Pogliano	2005	\$28.95	\$21.71		
33806	<b>THE CR WAY</b> • by Paul McGlothlin and Meredith Averill		\$15.95	\$11.25		
33828	<b>THE SEXY YEARS</b> • by Suzanne Somers (paperback)	2004	\$15.00	\$10.50		
33695	<b>WE BECOME SILENT</b> • DVD by Kevin Miller	—	\$24.98	\$18.74		
33803	<b>WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT DIABETES</b> • by Steven V. Joyal, MD	2008	\$14.99	\$10.49		
33703	<b>JOHN ABDO'S NO EXCUSES WORKOUT DVD</b>	2008	\$13.30	\$9.98		
33804	<b>YOU: STAYING YOUNG: THE OWNER'S MANUAL FOR EXTENDING YOUR WARRANTY</b> • by Mehmet Oz, MD	2008	\$26.00	\$18.20		
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# Life Extension® GRAB 'n' GO Travel Packs

## So You Never Miss a Day

Forgot to grab your supplements before you left the house? Having trouble keeping track of which ones you've taken? Or maybe in that last-minute rush before heading to the airport you didn't have time to sort them out.

Then let us do it for you.

With **Life Extension® Comprehensive Nutrient Packs Advanced**, you'll have in hand the 5 preferred formulas you need for *optimal* everyday nutritional support—in just one convenient assortment.

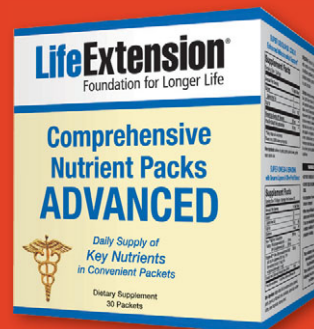
Each pack contains the suggested daily serving of . . .

### >> Two-Per-Day Multi-Nutrient Tablets • 2 tablets

It's next to impossible to get all your daily nutrients through diet alone. This comprehensive formula contains a wide spectrum of vitamins, minerals, antioxidants, and botanical extracts in amounts exceeding most commercial brands.

### >> Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract • 2 softgels, yielding 700 mg EPA and 500 mg DHA

Fish oil's critical health benefits are widely known, from protecting normal LDL against oxidation to supporting brain health.<sup>1-4</sup> Formulated using a proprietary molecular distillation technology, **Life Extension's** fish oil was awarded a **5-star** rating for purity and safety by the International Fish Oil Standards (IFOS™) program. Olive fruit extract and sesame lignan extracts have been added to help emulate a Mediterranean diet and optimize the effects of these powerhouse nutrients.



ITEM #01796

### >> Super Bio-Curcumin® • 1 capsule

Curcumin has remarkable antioxidative, immunomodulatory, proapoptotic, hepatoprotective and antiangiogenic properties. Curcumin is also found to increase detoxifying enzymes and promote healthy DNA function. Super Bio-Curcumin® absorbs up to seven times better than conventional curcumin. Studies show that one **400 mg** capsule a day of this turmeric compound can provide curcumin blood levels equal to ingesting **2,500–2,800 mg** of commercial curcumin supplements.

### >> Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support • 1-100 mg softgel

One of the most potent antioxidants and cellular energizers, coenzyme Q10 supports heart health but declines in the body over time. **Ubiquinol** is a highly *absorbable* form of CoQ10, providing sustained levels in the body.

### >> Super Booster Softgels with Advanced K2 Complex • 1 softgel

Super Booster Softgels with Advanced K2 Complex functions as the perfect complementary supplement because it contains additional oil based nutrients that cannot fit into the tightly packed Two-Per-Day Tablets.





Super Booster provides high doses of the most effective form of vitamin K known as menaquinone-7, as well as vitamins B12, C, E, K1 and K2, chlorophyllin, *Ginkgo biloba* extract, lutein, lycopene, and sesame seed lignan extract.

#### **The Best Way to Manage Your Daily Supplement Regimen**

These vital nutrients, bundled at *no extra cost* into a single packet, combine convenience with superior *value* when compared to buying each product separately.

A box containing a **30-day** supply of **Comprehensive Nutrient Packs** retails for \$90. If a member buys four boxes, the cost is just **\$61.50** per box.

**To order Life Extension® Comprehensive Nutrient Packs Advanced,  
call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

#### **References**

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2. *J Agric Food Chem*. 2007 Sep 5;55(18): 7609-14.
3. *Lipids*. 2001 Nov;36(11):1195-202.
4. *Eur J Cancer*. 2000 Jun;36(10):1235-47.

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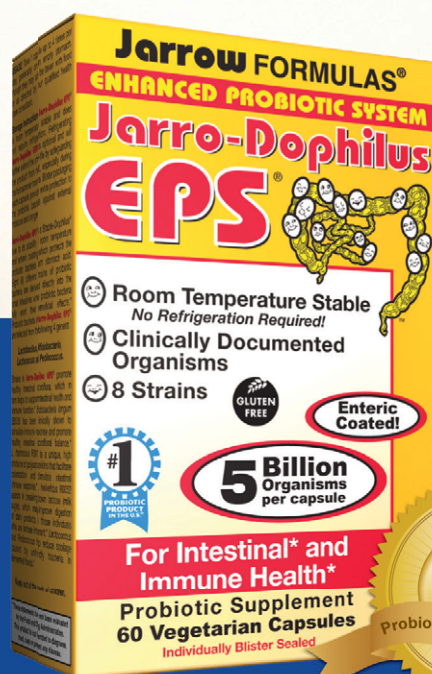


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Jarro-Dophilus EPS®  
60 caps Item #00056  
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## Superior Probiotics from Jarrow Formulas®

The proper balance of microflora in the intestines is crucial for health and well-being. **Jarrow Formulas®** probiotic dietary supplements are designed to maintain a healthy balance of these microflora to maximize your digestive and immune system.\*

**Jarrow Formulas®** is a probiotic pioneer and has a complete line of probiotic products, including the #1 seller in the U.S.† - **Jarro-Dophilus EPS®**.

† #1 in Unit Volume in the Natural Channel, according to SPINS, a market research and consulting firm for the Natural Product Industry (SPINScan Natural, 52 Weeks Ending 09/01/2012).

**www.Jarrow.com**

To order call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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\* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

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# KRILL HEALTHY JOINT FORMULA

TARGETED SUPPORT  
FOR OPTIMAL JOINT  
FUNCTION AND MOBILITY



Maintaining healthy, flexible joints is essential to quality of life. Joint stiffness and discomfort can stand in the way of performing even simple everyday tasks.

Most people do not obtain critical nutrients shown to support youthful joint function and mobility.

To meet this urgent need, **Life Extension®** introduced **Krill Healthy Joint Formula**, a patent-pending blend of deep-sea **whole krill oil** sourced in Antarctica, combined with **hyaluronic acid** and **astaxanthin**.

In a recent clinical trial involving over 100 maturing individuals, a **55% reduction** in joint discomfort was observed in less than three months, with **63%** of participants maintaining ease of motion.<sup>1</sup>

## THREE SYNERGISTIC COMPOUNDS FOR SUPERIOR BENEFIT

The data reveals that the fatty acids found in krill oil are particularly effective for joint health.<sup>2</sup> These unique fatty acids have been shown to *specifically target joint tissue*.<sup>2,3</sup>

**Hyaluronic acid** occurs naturally in the joints,<sup>4</sup> where it acts to lubricate and cushion against repeated physical impacts.<sup>5</sup> Because it forms a major component of cartilage and soft tissue,<sup>4</sup> it is widely used to promote joint health.<sup>4-8</sup>

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.<sup>8</sup>

Krill oil is a natural source of the antioxidant carotenoid **astaxanthin**. Astaxanthin works in multiple ways, including suppression of free radical activity and enhanced mitochondrial function.<sup>9</sup> It also maintains krill oil's molecular stability.

Most commercially available krill oils do not contain significant amounts of astaxanthin because it is nearly eliminated during processing. **Krill Healthy Joint Formula** is *fortified* with astaxanthin, for maximum stability and superior benefit.

## JUST ONE SOFTGEL DAILY

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

A bottle containing **30** 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 one softgel a day of **Krill Healthy Joint Formula** duplicates a successful human clinical trial.

## References

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7. *Am J Phys Med Rehabil.* 2005 Apr;84(4):278-83; quiz 84, 93.
8. *World J Gastroenterol.* 2007 Feb 14;13(6):945-9.
9. *J Nutr Biochem.* 2010 May;21(5):381-9.

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

**Contains crustacean shellfish (krill).**

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Item # 01600

To order **Krill Healthy Joint Formula**  
call 1-800-544-4440 or visit **www.LifeExtension.com**





## WHAT'S INSIDE

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# LifeExtension® Magazine



### 7 FEDERAL DEATH PANELS

As Medicare descends into insolvency, the government is assembling "task forces" to disseminate misleading propaganda that will cause the premature deaths of millions of Americans. Life Extension® exposes this deceitful government charade.



### 36 ACHIEVE *BALANCED* IMMUNE FUNCTION

Aging disrupts the delicate balance of our immune system which can result in allergies, inflammation, and infectious diseases. Researchers have discovered a botanical extract that modulates immune function *as needed*, providing both symptomatic and systemic relief.



### 46 A BETTER FORM OF VITAMIN C

Since vitamin C can't be stored in the body, it's difficult to maintain optimal levels. Fortunately, scientists have uncovered two extracts that increase the rate at which your body absorbs and retains vitamin C for enhanced plasma concentration.



### 58 WHY SOME PEOPLE LIVE SO LONG!

In a new study partially funded by **Life Extension®**, two researchers travelled the world collecting data and DNA samples to discover the secret of longevity in **super-centenarians**. The goal is to discover how we can re-engineer our DNA to duplicate their good health and long life.



### 70 TRYPTOPHAN IMPROVES BRAIN CHEMISTRY

Your body uses the amino acid **tryptophan** to naturally boost brain **serotonin** levels. Proper use of tryptophan reverses the behavioral symptoms of age, while improving mood, sleep quality, and exercise motivation.



### 95 AVOIDING DIABESITY

According to Dr. Mark Hyman, one of the leading products of the American food industry has become patients for the American health care industry. Learn how to avoid the risks of **diabetes** through optimal nutrition, balanced hormones, reduced inflammation, quality supplementation, and stress reduction.