

**COMBAT AGE-RELATED METABOLIC DECLINE**

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# LifeExtension®

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

December 2012

## **FDA Failure Admitted By Former Top Official**

**PSA Screening  
Controversy**

**Lycopene's Unique  
Cellular Benefits**

**Reverse Male Infertility**

**Prostate Cancer  
Treatment Without  
Side Effects**



**Former FDA Commissioner  
Andrew von Eschenbach, MD**

# ARE YOU TAKING THE OPTIMAL FORMS OF VITAMIN E?

According to the *Proceedings of the National Academy of Sciences*, alpha tocopherol (regular 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 **vitamin E** for those seeking optimal health benefits.

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

## SESAME LIGNANS: THE NATURAL VITAMIN E BOOSTER

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.\*

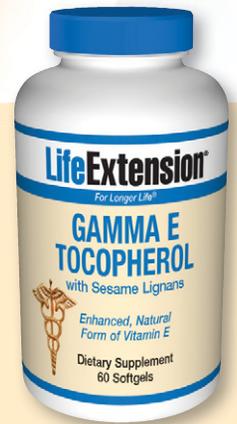
In a human study that combined **gamma tocopherol** with **sesame lignans**, gamma tocopherol/ sesame was **25% more effective** than gamma tocopherol/ tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.<sup>4,5</sup> Since tocotrienols are considered nature's most 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** long ago. Consumers thus obtain superior benefits at a much **lower cost**.

## WORLD'S MOST COMPREHENSIVE VITAMIN E FORMULA!

The **Gamma E Tocopherol with Sesame Lignans** formula provides potent doses of critically important gamma **vitamin E** along with **sesame lignans** to augment its antioxidant effects. Suggested dose is one capsule daily.

The retail price for 60 softgels of **Gamma E Tocopherol with Sesame Lignans** is **\$32**. If a member buys four bottles, the price is reduced to only **\$21.75 per bottle**.



Item # 00759

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

Contains soybeans.

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.

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

### References

1. *J Natl Cancer Inst.* 2000 Dec 20;92(24):1966-7.
2. *Proc Natl Acad Sci USA.* 1997 Apr 1; 94(7):3217-22.
3. *Atherosclerosis.* 1999 May;144(1):117-22.
4. *J Nutr.* 1992 Dec;122(12):2440-6.
5. *Lipids.* 1995 Nov;30(11):1019-28.

To order Gamma E Tocopherol with Sesame Lignans, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

## REPORTS



**24 FIGHT BACK AGAINST AGE-RELATED WEIGHT GAIN**  
**Weight gain** occurs as we age partly because of a decline in **resting metabolic rate**. In placebo-controlled studies, scientists have verified that **7-Keto DHEA** restores *resting metabolic rate* and safely induces **fat loss**.



**36 WHY LYCOPENE HAS BECOME SO POPULAR**  
**Lycopene** is a plant extract that slashes disease risk and improves cellular communication. While found in tomatoes and certain other vegetables, it is **poorly absorbed** from raw food sources. Health conscious people increasingly understand that cooked tomato products or supplements are the only way to ensure protective **lycopene blood levels**.



**50 REVERSING MALE INFERTILITY**  
 Worldwide male *infertility* is increasing at an alarming rate. A 2012 study shows that *only 1 in 4 men* have optimal semen. Researchers have identified nutrients that safely improve sperm count, quality, and motility—improving the odds of pregnancy *without* drugs, expensive IVF treatments, or invasive procedures.



**62 THE PSA CONTROVERSY-Part I**  
 A federal government-funded panel is advising aging men to avoid **PSA** screening. The results will be catastrophic as tens of thousands needlessly perish from prostate cancer. Here, Dr. Stephen B. Strum discusses the critical role PSA testing plays in prostate cancer prevention and treatment.



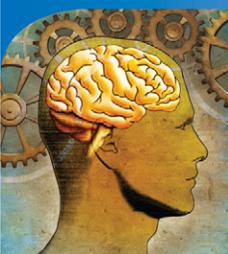
**74 THE PSA CONTROVERSY-Part II**  
 This real-world case history shows how PSA screening can be used as a tool to diagnose and treat prostate cancer without resorting to the inappropriate use of side effect-laden therapies.



### FORMER FDA COMMISSIONER ADMITS FDA FAILURE

Medical innovation has been suffocated by the **FDA's** flawed drug approval process. An increasing number of scholarly individuals recognize that **delaying** lifesaving therapies can no longer be tolerated, including former **FDA Commissioner Andrew von Eschenbach**.

## DEPARTMENTS



### Smart, Strong and Sexy at 100?

New skin. New hair.  
 New YOU... 7 simple  
 steps to thrive at 100...  
 and beyond.

David A. Kekich

**17 IN THE NEWS**  
 High-normal glucose levels shrink key brain areas in just 4 years; healthy life-style behaviors add 5.4 years to life span; children admitted to the hospital have a higher prevalence of vitamin D deficiency; resveratrol could help maintain senior mobility; and more.

**99 BOOK REVIEW**  
 David Kekich's new book, *Smart, Strong and Sexy at 100?* details a seven-step, extreme-longevity plan that focuses on nutrition, exercise, and supplements, as well as four other excellent strategies for a longer, healthier life.

**87 SUPER FOODS**  
 A favorite food for thousands of years, yogurt contains beneficial bacterial cultures that can deliver potent health dividends. Studies demonstrate that yogurt improves the body's defenses against gastrointestinal disorders, cancer, cardiovascular disease, obesity, and gum disease.

**93 PROFILE**  
**Life Extension®** member Elena Pezzo relates how, when doctors gave up on her brother after his massive stroke, she employed a supplement regimen to save his life and jump-start his recovery.





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# GREEN TEA EXTRACT

When Life Extension® introduced standardized green tea extract in 1993, the supplement was very expensive. As more research was published about green tea's multifaceted benefits, more companies competed to make **higher-potency** extracts at lower prices.

The good news for consumers is that they can obtain **high-potency** standardized green tea extract capsules at a fraction of the original price.

The Life Extension Foundation Buyers Club offers **98% green tea extracts** in either a **lightly caffeinated** or **decaffeinated** form. These **98%** extracts are standardized to provide high potencies of critical **EGCG**, the most important **polyphenol** found in green tea.

These highly concentrated **Mega Green Tea Extract Caps** contain **725 mg** of either **lightly caffeinated** or **decaffeinated 98% standardized** green tea extracts. The retail price for **100 vegetarian capsules** of **Mega Green Tea Extract** is **\$28**.

If a member buys four bottles of **725 mg Mega Green Tea Extract** capsules, the price is reduced to **\$19.88 per bottle**. Most people take just one capsule daily. **Contains rice**.



To order Mega Green Tea Extract,  
call 1-800-544-4440 or  
visit [www.LifeExtension.com](http://www.LifeExtension.com)

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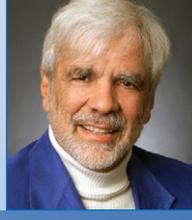
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**Stephen B. Strum, MD, FACP** is a medical oncologist who has specialized in prostate cancer treatment since 1983. He is co-founder and past medical director of the Prostate Cancer Research Institute. Currently, he directs a practice for prostate cancer patients in Ashland, OR.



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**Jonathan V. Wright, MD**, is medical director of the Tahoma Clinic in Renton, WA. He received his MD from the University of Michigan and has taught natural biochemical medical treatments since 1983. Dr. Wright pioneered the use of bioidentical estrogens and DHEA in daily medical practice. He has authored 11 books and publishes *Nutrition and Healing*, a monthly newsletter with a worldwide circulation of more than 100,000.

# ULTIMATE eye HYDRATION



Item # 00893

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**.

**To order Brite Eyes III,  
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or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

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.

## Former FDA Commissioner Admits Risk of Bureaucratic Delay



BY WILLIAM FALOON



**Ted Kennedy** was diagnosed with a brain tumor in **May 2008**. He received the best conventional treatment at Duke University Medical Center, which enabled him to survive until **August 2009**—a total of **15 months**.

I'll never forget being told when I was age 14 about a young girl who was dying of a brain tumor. I asked a lot of ignorant questions as to why doctors could not cure it, but no one had any logical answers.

That was back in **1968**, yet a person stricken today with the most common brain tumor (*glioblastoma multiforme*) will only live a few miserable months longer than in the past.<sup>1</sup> Over the years, the media has announced the discovery of promising cancer therapies, but most never make it to the clinical testing stage.

We at **Life Extension**<sup>®</sup> have been harshly critical of the FDA's drug approval process, arguing that medical innovation has been suffocated by **high costs** and **bureaucratic uncertainties**.

An increasing number of respected individuals are agreeing that delaying lifesaving therapies can no longer be tolerated, including former **FDA Commissioner Andrew von Eschenbach**. >>



Andrew von Eschenbach, MD  
Former FDA Commissioner  
(2005-2009)

## AS WE SEE IT

Dr. von Eschenbach is a former director of the **National Cancer Institute** and served as **FDA Commissioner** from 2005 to 2009. He authored an editorial published in *The Wall Street Journal* that was critical of the FDA's ability to evaluate and approve new life-saving therapies.<sup>2</sup>

The editorial opened by Dr. von Eschenbach stating:

*"We stand on the cusp of a revolution in health care. Advances in molecular medicine will allow us to develop powerful new treatments that can cure or even prevent diseases like Alzheimer's and cancer."*<sup>2</sup>

"What's missing," according to Dr. von Eschenbach, *"Is a modernized Food and Drug Administration that can rapidly and efficiently bring new discoveries to patients."*<sup>2</sup>

Dr. von Eschenbach cited current FDA Commissioner Margaret Hamburg's concession before Congress that, *"The FDA is relying on 20th century regulatory science to evaluate 21st century medical products."*<sup>3</sup>

The most compelling arguments Dr. von Eschenbach made for meaningful reform were:

*"The FDA should approve drugs based on safety and leave efficacy testing for post-market studies Congress can ensure that the FDA serves as a bridge—not a barrier—to cutting-edge technologies."*<sup>2</sup>

Said differently, once a potentially effective therapy has been cleared for safety, it should be made immediately available to human beings who will otherwise suffer and die.

Brain tumor patients, for example, don't have years to wait for FDA-mandated efficacy studies. They need rapid access to new therapies that offer some hope of saving their lives.

*"The FDA should approve drugs based on safety and leave efficacy testing for post-market studies."*<sup>2</sup>

—Andrew von Eschenbach, MD, Former FDA Commissioner (2005-2009)

### Bridging the FDA's "Death Valley"

Newly diagnosed cancer patients are usually given several treatment choices, all laden with guaranteed side effects with no promise of a cure or even a significant remission.

For most types of cancer, progress has been excruciatingly slow, even though there are more scientific studies being published about cancer now than at any time in human history. The term "death valley" is increasingly being used to describe the gap that separates what is discovered in the scientific setting from what actually makes it into patients' bodies.

The sad fact is there are so many bureaucratic roadblocks that potentially effective therapies aren't making it out of the labo-

ratory setting. The high costs of conducting human efficacy trials deny smaller companies equal opportunity to bring what may be superior medications to market.

Dr. von Eschenbach's proposal to allow new therapies on the market as soon as *safety* is established would liberate many promising therapies currently trapped in the FDA's oppressive quagmire.

### Who Does Not Want Faster Approval

There are those who financially benefit by maintaining the current system that requires enormous capital expenditures and many

#### Dr. von Eschenbach Discusses Regenerative Medicine

Dr. von Eschenbach wrote:

"Breakthrough technologies deserve a breakthrough in the way the FDA evaluates them. Take regenerative medicine. If a company can grow cells that repair the retina in a lab, patients who've been blinded by macular degeneration shouldn't have to wait years while the FDA asks the company to complete laborious clinical trials proving efficacy. Instead, after proof of concept and safety testing, the product could be approved for marketing with every eligible patient entered in a registry so the company and the FDA can establish efficacy through post-market studies."<sup>4</sup>

This common sense approach has been advocated by **Life Extension** for more than 30 years. It's refreshing to see a former **FDA Commissioner** concur.



years of delay before new therapies are approved.

Large pharmaceutical companies enjoy a quasi-monopoly on the development of new drugs because virtually no one else can afford the gargantuan costs of FDA approval. When small companies make a medical discovery, pharmaceutical giants often buy out the technology because smaller companies lack the resources to afford currently-mandated efficacy studies.

There's also the issue of the enormous profitability on existing therapies. Just look at the melanoma drug called Yervoy® made by Bristol Myers Squibb. It costs **\$120,000** for this treatment that only extends survival in advanced melanoma patients an average of **108 days**.<sup>5</sup> It is in the economic interests of Bristol Myers Squibb that no other melanoma therapy be approved for the next 20 years so they can collect **\$120,000** from *every* melanoma patient that is not cured in the early stage.

Pharmaceutical giants stand to earn enormous profits as long as it costs so much to comply with FDA efficacy requirements that competition from superior therapies is stifled.

### Where We Don't Agree With Dr. von Eschenbach

There is a misconception in the mainstream that if the FDA were given more resources, that it could properly do its job.

This fallacy was exposed in a report the FDA commissioned wherein it revealed that the FDA had systemic internal flaws that could not be corrected by the mere input of more money.<sup>6</sup> While Dr. von Eschenbach emphasizes the need to modernize the FDA "*from the bottom up*" to include a "*comprehensive external review of the agency's regulatory processes*,"<sup>7</sup> the track record of federal agencies improving themselves is abysmal, especially with powerful special interests like pharmaceutical companies vehemently opposing any change.

### Why "Efficacy" is Sometimes More Important Than "Safety"

The public rightfully fears the risks posed by unsafe drugs, and we at Life Extension have written many exposés on *dangerous medicines* the FDA should have never approved.

Yet the reality is that even the worst side-effect-prone drugs only affect a minority of patients. When it comes to treating terminal diseases like Alzheimer's and certain cancers, efficacy becomes paramount to safety because these patients will die unless an experimental therapy happens to work for them.

So restricting promising therapies to only those with proven safety will continue to condemn certain Americans to guaranteed death, which is why some patients need even *earlier* access to experimental treatments than what Dr. von Eschenbach proposes.



## The FDA Has Long Delayed Life-Saving Drugs

The current and former Commissioners of the FDA state that the FDA is incapable of approving 21<sup>st</sup> century technologies in a timely fashion.

What they may not know is that the FDA delayed approval of life-saving therapies for much of the 20<sup>th</sup> century.

A chilling example is that of **propranolol**, a beta-blocker that saves the lives of tens of thousands of Americans each year. Propranolol was used in Europe many years before FDA approved it in the US.<sup>8-9</sup> If you multiply the number of lives that could have been saved each year if US patients had gained access to **propranolol**—times the **multi-year delay**—the total number exceeds **30,000 Americans** who needlessly died because of FDA's delay in approving this ONE drug.<sup>9</sup>

The anti-diabetic drug **metformin** was approved in England in **1958**, but the FDA did not get around to allowing it in the United States until **1994**.<sup>10</sup>

Metformin is now the first line treatment for early-stage diabetes.<sup>11-13</sup> The number of **type II diabetics** who perished needlessly because they did not have access to metformin is incalculable.

The anti-viral drug **ribavirin** was used throughout the world in the early **1980s**, but FDA did not approve it for use in America until **1998**.<sup>14-18</sup> Ribavirin increases the efficacy of **interferon** in treating **hepatitis C**.

It is a broad-spectrum drug that can eradicate a wide range of lethal viruses, yet Americans died while ribavirin was sold over-the-counter in some countries.

Since the early **1960s**, when Congress granted the agency authoritarian new powers, the FDA has functioned as a **roadblock** that denies Americans access to improved medical therapies. The timeline from when a drug demonstrates safety and the inordinate number of years it takes to gain regulatory approval speaks for itself.

## Lethal Consequences of Denial

Politicians are debating a lot of topics right now, but the most important problem facing Americans is not being discussed.

Once you or a loved one is diagnosed with a serious disease, all other issues become largely irrelevant. Your only concern is whether there is a non-toxic cure available.

That's why it's imperative that **free market** reforms are enacted that place the **FDA** in an **advisory** role that allows rapid medical progress unimpeded by central government bureaucrats.

In response to Dr. von Eschenbach's editorial, a number

of doctors responded with complimentary letters, but emphasized that even more deregulation of FDA authoritarian control is needed to bring about cures for today's killer diseases.<sup>19</sup> Some of these letters exposed how dysfunction and unpredictability at the FDA is precluding vital early-stage scientific research.

The sad fact is that most of the American public remains in a state of denial about the lethal consequences of today's antiquated regulatory structure. This denial turns into harsh reality when one is diagnosed with an illness for which there is no current cure.

We at **Life Extension** continue our relentless campaign to

alert policy makers and the public about the urgent need to accelerate the introduction of new therapies. This can only happen if the major roadblock (i.e., the FDA) is relegated to an advisory role, away from its current dictatorial role.

Unlike any other issue, failure to affect meaningful FDA reform will result in **millions of Americans** needlessly **suffering and dying every single year**.

This is no longer just the opinion of health freedom fighters like me, but also the current and former **Commissioners of the FDA!**

For longer life,



William Faloon

*"Tomorrow's high-tech cures can also slash health-care costs and eliminate ineffective treatments."<sup>1,2</sup>*

—Andrew von Eschenbach, MD, Former FDA Commissioner (2005-2009)

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## AS THIS ARTICLE WAS GOING TO PRESS...

A White House advisory body on September 25, 2012, unveiled a plan to increase the number of new prescription drugs that go on the market each year by more quickly approving drugs to treat high-risk patients.

The President's **Council of Advisors on Science and Technology** urged the FDA to expand its use of faster drug approvals to a wider range of diseases. The council suggested the FDA could begin to approve drugs that may help only a narrow and high-risk patient population, such as people who are morbidly obese, under what the council called "special medical use" approvals.

While it is encouraging to see **The White House** agree with our long-standing position about the lethal consequences of drug delays, these kinds of changes are inadequate to address the cumbersome bureaucracy that impedes scientific discoveries from reaching the clinical setting where they are desperately needed by terminally ill humans.

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## Comprehensive Pomegranate Protection!

# FULL-SPECTRUM POMEGRANATE™ FORMULA

Few nutritional sources have gained as much scientific validation as **pomegranate**.<sup>1</sup>

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

### The Next-Generation Pomegranate Formula

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

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

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

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

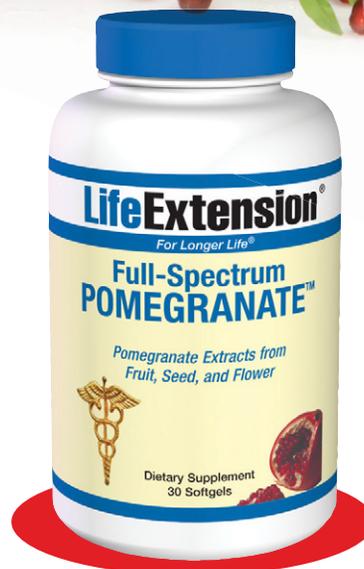
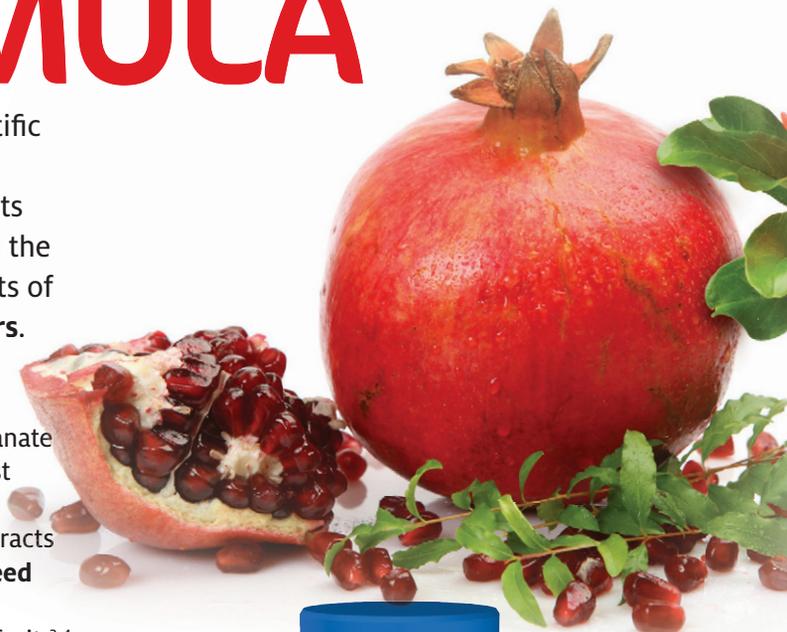
One softgel of **Full-Spectrum Pomegranate™** contains:

<b>POMELLA® Pomegranate</b> .....	400 mg
<i>(Punica granatum)</i> Extract (fruit) [std. to 30% punicalagins (120 mg)]	
<b>PomComplete™ Pomegranate</b> .....	137.5 mg
<i>(Punica granatum)</i> Blend [flower extract and seed oil (standardized to 22% (30 mg) punicic acid)]	

### Full-Spectrum Pomegranate™

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

Contains soybeans.



Item # 01423

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

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

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.

# MEGA BENEFITS, MEGA GLA

## THE OMEGA-6 THAT EASES INFLAMMATION

Gamma linolenic acid (GLA) is an **omega-6 essential fatty acid** with powerful health-promoting properties. While attention is often lavished on **omega-3 fatty acids** for their role in human health, GLA has an equally impressive array of potential health enhancers. Most importantly, however, as we age, GLA deficiency becomes more common and can cause a cascade of *inflammatory problems*.

Make sure you have sufficient levels of GLA by supplementing with Life Extension®'s **Mega GLA with Sesame Lignans**. Life Extension includes 10 mg in each softgel of **Mega GLA**.

Enhancing this supplement with sesame lignans enables GLA to work much better in the body, allowing many more people with inflammatory-related problems to benefit from supplemental GLA.

The retail price of **Mega GLA with Sesame Lignans** remains the same at \$19.50 for 60 softgels that supply 1,300 mg of borage seed oil (providing about 299 mg of GLA), along with 10 mg of sesame lignans. If a member buys four bottles, the price is reduced to only **\$13.50** per bottle.

Contains soybeans. Contains sesame.

**To order Mega GLA with Sesame Lignans, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**



Item # 00756

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.

**NEW**

**Rich Rewards™**

**Lentil  
Vegetable  
Soup**

**One Smart Bowl of Soup™**

**A delicious vegetarian soup suitable for vegans**

# Only Healthy Ingredients

Processed food companies sell vegetable soups so cheaply because they load them with *high-glycemic* carbohydrates (rice, potatoes, pasta) that cost virtually nothing. They then add inexpensive ingredients like corn, sugar, and sometimes omega-6 fats (like cottonseed oil). So for less than \$2, you get a relatively high-carb-calorie soup that provides virtually no health benefits. **Life Extension®** has formulated a **lentil vegetable soup** suitable for vegans that contains only garden-fresh ingredients, including lentils, mushrooms, tomatoes, carrots, **extra-virgin olive oil**, and a host of other beneficial **plant foods**.

Each serving of **Rich Rewards Lentil Vegetable soup** contains only **120 calories** of the best-documented foods to maintain your precious health. You can consume the entire contents or use a smaller portion of the soup as part of a meal for you (or several people).

The entire container supplies about **3.5 servings** of these lentils, mushrooms, and vegetables—with none of the **glucose-spiking** fillers found in commercial soups.

**Rich Rewards Lentil Vegetable Soup** is packaged in a re-closable bottle free of **BPA**. While the **FDA** says the BPA lining in most cans is safe, we at Life Extension have always used BPA-free containers.

The retail price for a **3.5 serving bottle** of **Rich Rewards Lentil Vegetable soup** is \$13. The member price is **\$9.75**.



Item # 01705

## Lentil Vegetable Soup

### Nutrition Facts

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

Amount Per Serving	
<b>Calories</b> 120	Calories from Fat 40
% Daily Value *	
<b>Total Fat</b>	4.5g <b>7%</b>
Saturated Fat	0g <b>0%</b>
Trans Fat	0g
<b>Cholesterol</b>	0mg <b>0%</b>
<b>Sodium</b>	35mg <b>1%</b>
<b>Total Carbohydrate</b>	17g <b>6%</b>
Dietary Fiber	5g <b>20%</b>
Sugars	7g
<b>Protein</b>	5g

Vitamin A 40% • Vitamin C 40%

Calcium 4% • Iron 15%

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

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

**Ingredients:** Water, Diced Tomatoes in Juice (tomatoes, tomato juice, citric acid, calcium chloride), Lentils, Tomato Paste, Celery, Onion, Mushroom, Carrot, Extra Virgin Olive Oil, Garlic, Parsley, Black Pepper, Sage, Basil, Thyme.

## Cruciferous Vegetable Soups

You can also order soups that contain vegetables like **broccoli**, **cauliflower**, and **asparagus** in **extra-virgin olive oil** with only **60-70 calories** per serving at the same price as the new **Lentil Vegetable Soup**.

### Cruciferous Vegetable

Retail Price \$11.95

Member Price \$8.96

Item # 01530

### Spicy Cruciferous Vegetable

Retail Price \$11.95

Member Price \$8.96

Item # 01531



## Souper tasty. Souper Satisfying.

You know you don't eat enough veggies. So **Life Extension®** cooked up a convenient, tasty way to spoon-feed you these souper foods. Unlike many canned soups, **Rich Rewards™ Lentil Vegetable Soup** is contained in a convenient resealable package that is free of BPA.

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

### One Smart Bowl of Soup

Contains about 3.5 servings of healthy lentils, mushrooms, and vegetables per bottle

Only 120 calories per serving

No added starches or sugars!

Excellent source of lentils, mushrooms, and fiber

Contains 4.5 grams of total fat per serving

0g *trans* fat. No saturated fat or cholesterol

To order your fresh supply of Rich Rewards Lentil Vegetable soup, call 1-800-544-4440 or visit [www.lef.org/soup](http://www.lef.org/soup)

# GO TO THE MAX

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

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

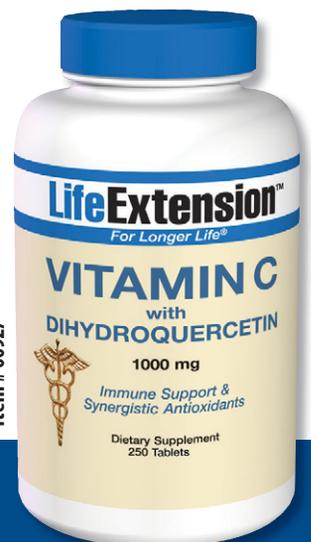
Fortunately, a *flavonoid* antioxidant known as *dihydroquercetin* functions as a **vitamin C** "supercharger." Studies demonstrate that *dihydroquercetin* acts to inhibit the oxidation of **vitamin C**, thereby helping to maintain its concentration and to recycle **vitamin C** throughout the body.<sup>2,3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

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

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

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To order **VITAMIN C with Dihydroquercetin**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



## IN THE NEWS

### Nutrient Formula Improves Cognitive Function in Older Humans

The *Journal of Alzheimer's Disease* published a study that evaluated the effects of a nutritional supplement combination on cognitive function in older men and women.\*

Forty-one participants aged 65 and older were assigned capsules providing **290 mg** eicosapentaenoic acid (EPA) and **203 mg** docosahexaenoic acid (DHA); **84 mg** lycopene and **240 mg** *Ginkgo biloba* extract daily for three years. The control group consisted of 622 participants with no supplement intake or serious diseases. Tests of cognitive function, including attention, memory, language, and reasoning skills, were administered at the beginning and end of the study.

Although memory scores improved in both groups, the increase was larger in those who received the supplements compared to the controls. Language ability and attention declined in those who did not receive the supplements, while remaining stable in supplemented participants. When test scores were evaluated as a whole, significant improvement occurred only in supplemented subjects.

**Editor's Note:** Mechanisms for EPA and DHA in maintaining cognitive function are well known, and include the fatty acids' anti-inflammatory and brain cell membrane-stabilizing properties. Although omega-3 fatty acids have an antioxidant effect, they are also subject to lipid peroxidation, therefore, combining them with compounds that have antioxidant properties such as lycopene could improve their benefits.

—D. Dye

\* *J Alzheimers Dis.* 2012 Aug 9.

### Higher Vitamin B6 Levels Associated with Lower Risk of Invasive Breast Cancer

An article published online in the journal *Cancer Epidemiology, Biomarkers & Prevention* reports the finding of researchers at the University of Hawaii Cancer Center of an association between higher levels of the active form of vitamin B6 known as pyridoxal-5'-phosphate (PLP) and a lower risk of invasive breast cancer in postmenopausal women.\*

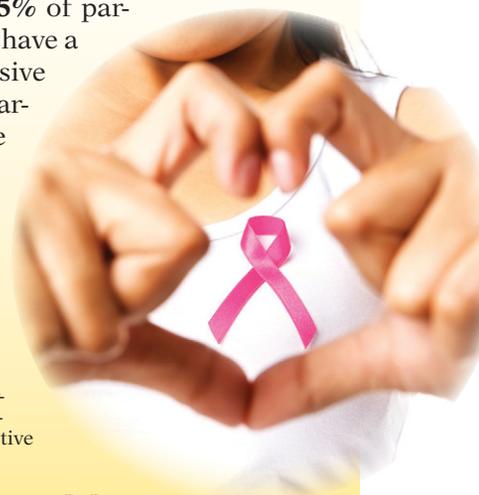
The study included 1,412 women enrolled in the Multiethnic Cohort in Hawaii and Southern California prospective study. Seven hundred six invasive breast cancer patients were matched for age, ethnicity, menopausal hormone use, and other characteristics with an equal number of women without the disease.

Women whose plasma PLP levels were among the top **25%** of participants were found to have a **30%** lower risk of invasive breast cancer in comparison with those whose levels were among the lowest fourth.

**Editor's Note:** When the risk was evaluated according to breast cancer type, a significant association was observed between higher PLP levels and estrogen receptor-positive, progesterone receptor-positive, and estrogen receptor- and progesterone receptor-positive tumors.

—D. Dye

\* *Cancer Epidemiol Biomark Prev.* 2012 Aug 9.



## Vitamin D Supplementation Cuts Childhood Colds and Flu in Half

A report published in *Pediatrics* reveals a decrease in the incidence of wintertime acute respiratory tract infections in children supplemented with vitamin D.\*

The trial included 247 children residing in Mongolia, which receives limited winter sunlight. Participants had a median serum 25-hydroxyvitamin D concentration of **7 ng/mL** at the beginning of the study (a severely deficient level associated with reduced sunlight exposure). One hundred forty-three children received milk fortified with **300 IU** vitamin D per day, and 104 subjects received unfortified milk for seven weeks beginning in late January.

At the trial's conclusion, vitamin D levels increased among those who received vitamin D-fortified milk while remaining the same among the control group. Parents of subjects who received vitamin D reported **48%** fewer respiratory infections in their children over the course of the study compared with those whose children did not receive the vitamin.

**Editor's Note:** Although observational studies have associated a lower risk of the infections with higher vitamin D levels, the investigation is one of the first randomized, double-blinded trials to study the effects of vitamin D supplementation on childhood acute respiratory infections. The amount of vitamin D provided was tiny, but since the children were so severely deficient, even this small amount provided substantial benefit. Children living in modern societies should be taking over **1,000 IU** a day of vitamin D in the wintertime months.

—D. Dye

\* *Pediatrics*. 2012 Sep;130(3):e561-7.

## Vitamin B3 Offers Superbug Protection

The *Journal of Clinical Investigation* reported the discovery of Cedars-Sinai researchers of a protective effect for vitamin B3 against methicillin-resistant *Staphylococcus aureus* (MRSA), a type of staph infection that is resistant to antibiotic treatment.\*

The finding is the result of research concerning a rare disorder known as neutrophil-specific granule deficiency, which involves a mutation in the gene C/EBP that regulates some of the body's antimicrobial factors. Afflicted individuals have weakened immune systems that render them vulnerable to infections such as staph.

The team determined that a high dose of a form of vitamin B3 known as nicotinamide or niacinamide stimulates C/EBP, which enhances white blood cells' ability to combat staph infections. When the vitamin was tested in human blood, it boosted the immune system's staph-killing ability up to **1,000-fold** in a matter of hours compared to treatment with saline.

The researchers suggest that targeting C/EBP with other compounds could also help treat staph infections.

**Editor's Note:** In mice that received injections of **250 mg** nicotinamide per kilogram body weight prior to non-MRSA staph infection, bacterial counts in the animals' spleens and kidneys were **100-fold** lower after 48 hours compared with animals injected with saline.

- D. Dye

\* *J Clin Invest*. 2012 Sep 4;122(9):3316-29.



## Healthy Lifestyle Behaviors in Old Age Add Half a Decade to Life Span

Engaging in health-promoting lifestyle behaviors during one's golden years can result in a longer life, even among the very old, according to research described in the *British Medical Journal*.\*

The study included 1,810 men and women who were at least 75 years old participating in a longitudinal study on dementia and aging. Interviews conducted upon enrollment obtained information concerning the participants' smoking status, alcohol intake, leisure activities, social networks, chronic diseases and other factors. The group was followed for 18 years, during which **91.8%** died.

Men and women who had a low-risk profile, characterized by healthy lifestyle behaviors, participation in one or more leisure activities, and having a rich or moderate social network lived a median of **5.4 years** longer than those who had a high-risk profile that included none of these factors.

**Editor's Note:** Even among people over the age of 85 and those with chronic health conditions, a healthy lifestyle appeared to prolong life by four years. Physical activity was the single biggest predictor of longevity. People who performed regular exercise lived an average of two years longer than people who did not.

—D. Dye

\* *Br Med J*. 2012 Aug 30.

## High-Normal Blood Sugar Could Adversely Impact the Brain

The journal *Neurology* published the finding of Australian researchers of an association between high normal plasma glucose levels and a decrease in brain volume in nondiabetic men and women.\*

The study included 266 men and women between the ages of 60 and 64 enrolled in the PATH Through Life Study, which is a longitudinal study of aging. Fasting plasma glucose and other factors were measured upon enrollment and those with glucose levels of **110 mg/dL** (classified as impaired fasting hyperglycemia by the World Health Organization) or higher were excluded. MRI scans of the brain were conducted at the beginning of the study and four years later.

Dr. Cherbuin and his colleagues uncovered a significant association between a decline in volume in the brain's hippocampus and amygdala (cerebral structures affected by aging and neurodegeneration) and higher plasma glucose levels within this nondiabetic population.

**Editor's Note:** When asked if there is a specific level at which plasma glucose would begin to be considered risky, Dr. Cherbuin replied, "We found that the top two highest quarters (or quartiles) had significantly more shrinkage than the lowest one which might suggest a tentative cut-off of **92 mg/dL**. However, because overall the association with hippocampal atrophy across all glucose levels was relatively uniform, more evidence was needed to point to a specific cut-off." These findings provide another reason to strive for **fasting glucose** levels below **86 mg/dL** of blood.

—D. Dye

\* *Neurology*. 2012 Sep 4;79(10):1019-26.



## Don't Forget to Drink Your Green Tea

The journal *Molecular Nutrition & Food Research* published an article that suggests a beneficial effect on the brain for a polyphenol found in green tea known as **epigallocatechin-3-gallate** (EGCG).\*

Yun Bai and colleagues cultured adult mouse hippocampal neural progenitor cells with varying concentrations of EGCG or no EGCG for 24 hours. A significant increase in the number of neural progenitor cells was found in cultures that received higher amounts of EGCG. Similar findings were obtained upon examination of the dentate gyrus area of the brain in adult mice that were treated with the compound.

The researchers then evaluated the effects of EGCG on memory and learning in mice by administering the compound or no EGCG prior to training the animals in a maze. They observed a reduction in the amount of time needed to find a hidden platform in EGCG-treated mice.

**Editor's Note:** The authors remark that "Based on previous safety and pharmacokinetic studies, it is likely that a daily **1,500–1,600 mg** bolus of EGCG in humans would achieve physiological levels similar to those in the sera of EGCG-treated (**20 mg/kg**) mice. Oral doses of similar magnitudes have been used in clinical trials, although EGCG in this potency has not been administered to humans on a regular basis."

—D. Dye

\* *Mol Nutr Food Res*. 2012 Aug;56(8):1292-303.

## Reduced Vitamin D Levels Linked to Critical Childhood Illness

The journal *Pediatrics* contained a report by Canadian researchers which reveals a greater prevalence of deficient vitamin D levels in children hospitalized with critical illnesses.\*

J. Dayre McNally, MD, PhD, of Children's Hospital of Eastern Ontario Research Institute and colleagues examined serum 25-hydroxyvitamin D levels in 326 critically ill children between the ages of six months and thirteen years who were admitted to the intensive care units of six Canadian hospitals. 25 hydroxyvitamin D levels of lower than **50 nmol/L** were found in **69%** of the children tested. Vitamin D deficiency was associated with lower ionized calcium levels, a greater likelihood of the necessity of catecholamine use (administered in cases of shock), longer intensive care unit stays and increased Pediatric Risk of Mortality scores, which are used to evaluate illness severity.



**Editor's Note:** The authors remarked that, "Further research will determine whether targeted vitamin D supplementation or rapid restoration will improve outcome."

—D. Dye

\* *Pediatrics*. 2012 Sep;130(3):429-36.



### Selenium Deficiency Associated with Increased Inflammation in Seniors

A report published online in *The Journal of Nutrition, Health & Aging* reveals a greater risk of inflammation among institutionalized older individuals whose levels of the mineral selenium were deficient.\*

The current study included 336 men and women between the ages of 65 and 101 years who were residents of long-term health facilities in Taiwan. Blood samples were analyzed for the inflammatory cytokine interleukin-6 (IL-6), selenium, and other factors.

Selenium deficiency, defined as having a serum selenium level of less than **80 mcg/L**, was detected in **35.6%** of the men and **43.2%** of the women participating in the study. An increased risk of deficiency was associated with rising levels of IL-6. Among those whose IL-6 levels were among the top **25%** of participants, the risk of selenium deficiency was more than double that of subjects whose IL-6 levels were among the lowest quarter.

**Editor's Note:** The authors write that, "Future studies should aim to further clarify the linkage between selenium and IL-6, and possible benefits and disadvantages of intervention."

—D. Dye

\* *J Nutr Health Aging*. 2012 Sep 13.

### Resveratrol Could Help Maintain Senior Mobility

The 244<sup>th</sup> National Meeting & Exposition of the American Chemical Society was the site of a presentation of the discovery of a protective effect for resveratrol against the decline in mobility and balance that can occur during aging or with disorders such as Parkinson's disease.\*

Jane E. Cavanaugh, PhD, and her associates fed 2, 10, and 22 month old mice diets enhanced with resveratrol or pinostilbene (a resveratrol analog) for 8 weeks. Motor function and balance were evaluated before and after treatment.

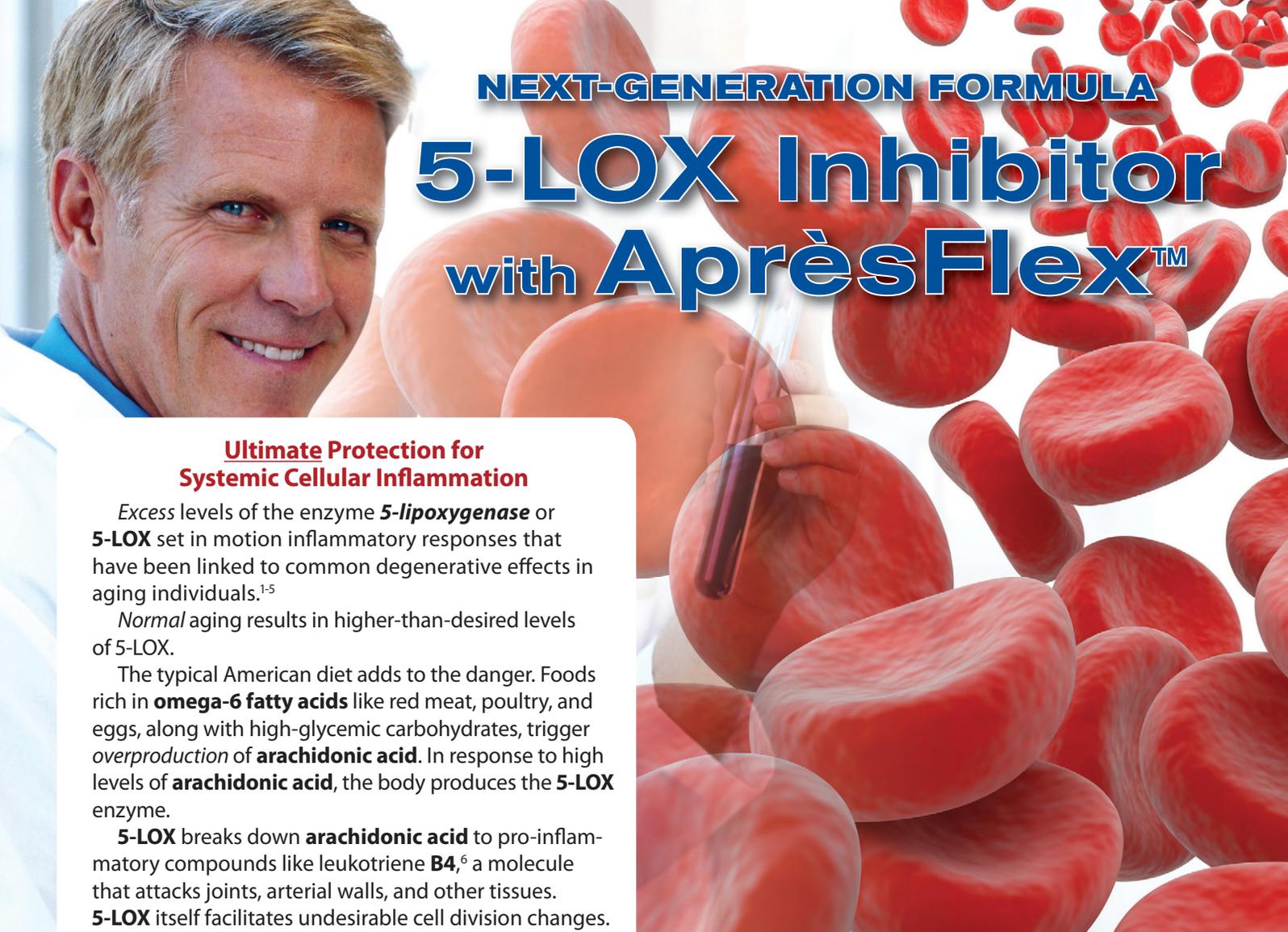
While older mice initially experienced more missteps when attempting to navigate a balance beam, fewer missteps occurred after 4 weeks of resveratrol treatment, resulting in performance similar to that of younger animals. In an attempt to determine the mechanism involved, the team pretreated neural cells with resveratrol or pinostilbene prior to exposing them to dopamine (a neurotransmitter that can induce cell death in high concentrations), and observed a protective effect in treated cells.

**Editor's Note:** It was determined that the compounds helped prevent free radical damage generated by dopamine breakdown and activated specific protein signaling pathways that may promote survival. (One hypothesis concerning the role of dopamine in Parkinson's disease is that dopamine itself may be damaging the cells that produce it.)

—D. Dye

\* 244<sup>th</sup> National Meeting & Exposition of the American Chemical Society, 2012 Aug 21.





# NEXT-GENERATION FORMULA

# 5-LOX Inhibitor

## with AprèsFlex™

### Ultimate Protection for Systemic Cellular Inflammation

Excess levels of the enzyme **5-lipoxygenase** or **5-LOX** set in motion inflammatory responses that have been linked to common degenerative effects in aging individuals.<sup>1-5</sup>

Normal aging results in higher-than-desired levels of 5-LOX.

The typical American diet adds to the danger. Foods rich in **omega-6 fatty acids** like red meat, poultry, and eggs, along with high-glycemic carbohydrates, trigger overproduction of **arachidonic acid**. In response to high levels of **arachidonic acid**, the body produces the **5-LOX** enzyme.

**5-LOX** breaks down **arachidonic acid** to pro-inflammatory compounds like leukotriene **B4**,<sup>6</sup> a molecule that attacks joints, arterial walls, and other tissues. **5-LOX** itself facilitates undesirable cell division changes.

The good news is that extract of the Indian plant **Boswellia serrata** has been shown to neutralize 5-LOX.

### Higher Absorbable Boswellia

Used for centuries to help with inflammatory issues, boswellia acts as a natural **5-LOX inhibitor**, intervening at the cellular level to block its unwanted effects.

Confirmatory data reveal that a compound contained in boswellia called **AKBA** (3-O-acetyl-11-keto-β-boswellic acid)<sup>7,8</sup> is the key to its beneficial action.

The problem is that boswellia is not readily absorbed into the blood.<sup>9</sup>

For this reason, a patent-pending, *standardized* form of boswellia called **AprèsFlex™** has been introduced that absorbs into the blood **52%** more than previously available boswellia extracts.<sup>9</sup>

Each 100 mg vegetarian capsule of **5-LOX Inhibitor with AprèsFlex™** is standardized to provide 20% of active **AKBA** from boswellia. Most people need only one capsule a day.

A bottle containing **60 100 mg** vegetarian capsules of **5-LOX Inhibitor with AprèsFlex™** retails for \$22. If a member buys four bottles, the price is reduced to just **\$15** per bottle.



Item # 01639

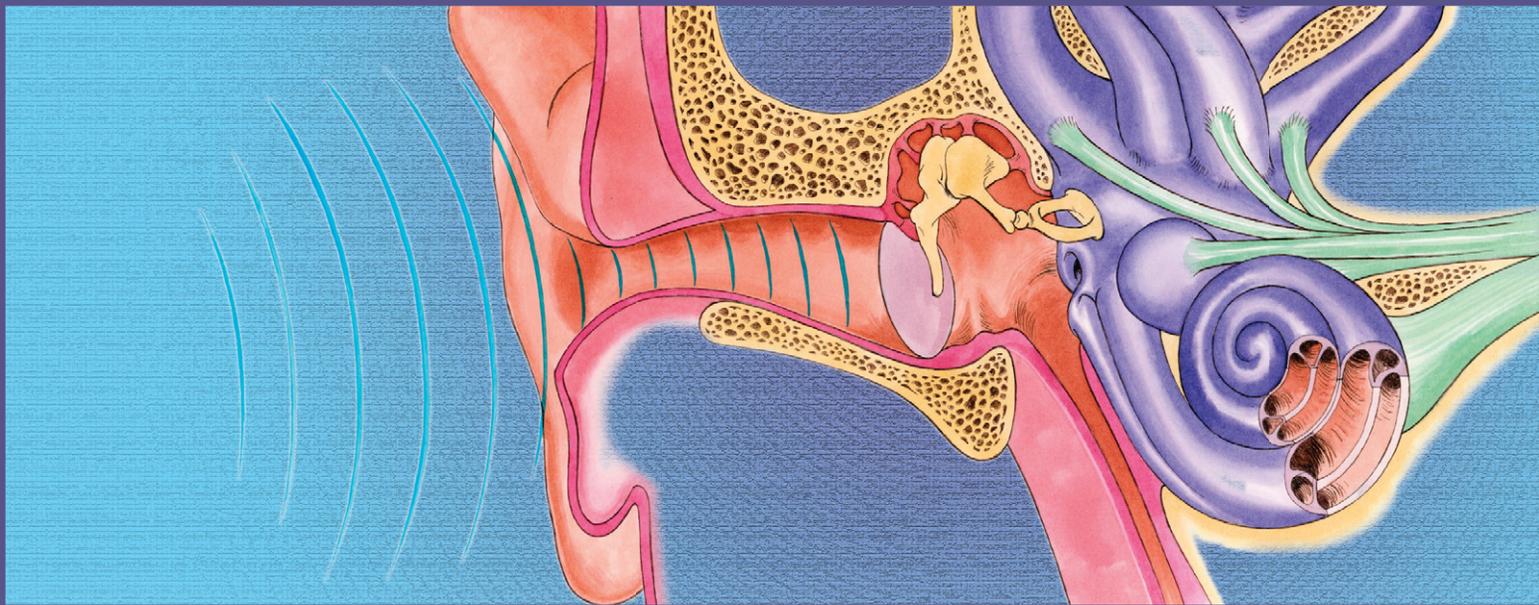
To order  
**5-LOX Inhibitor with AprèsFlex™**  
call **1-800-544-4440**  
or visit **www.LifeExtension.com**

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\*It should be noted that although Life Extension's previous 5-LOXIN® formulation contained at least a 30% concentration of AKBA, the new AprèsFlex™ formula delivers more AKBA into the bloodstream, offering greater efficacy at a 20% concentration. AprèsFlex™ has been added to the new ArthroMax™ and Ultra Natural Prostate Formulas.

AprèsFlex™ is a trademark of Laila Nutraceuticals exclusively licensed to PLThomas-Laila Nutra LLC. International patents pending.



# COMMON SENSE PROTECTION AGAINST **TINNITUS** AND **HEARING LOSS**

Most people assume that hearing loss is an inevitable consequence of aging. Surprisingly, scientific studies show that much hearing damage occurs from repeated exposure to the sounds of *daily life*.<sup>1</sup>

Experts estimate that 30 million Americans are exposed to *dangerous levels of noise* each day.<sup>2</sup>

## HEARING LOSS FROM URBAN LIVING

The maximum safe sound level for *regular* environmental exposure is considered to be **70 decibels**.<sup>3-6</sup>

Yet studies now show that urban dwellers can be exposed to chronic sound levels above **74 decibels** in the course of their daily activities; public transit sound levels can exceed **79 decibels**.<sup>3,7</sup>

Of equal concern is that the safe industrial sound level is considered to be a maximum of **85 decibels**. So just walking down the street, we're endangering our hearing from sounds that exceed levels deemed safe. They emanate from construction sites, passing vehicles, public transit, and of course, the music in stores and clubs.

## THE SOLUTION? **HEAROS™ EAR PLUGS**.

### EVERYDAY HEARING PROTECTION

What are social ear plugs? They are not ear plugs in the traditional sense, because they don't muffle and distort sound.

Instead, social ear plugs are sound attenuators. In other words, they let you hear the **same high and low frequencies**—they simply **lower the overall volume** for you.

This is the secret behind **Hearos™ Hi-Fidelity Ear Plugs'** ability to protect your hearing while allowing natural hearing and speech. You're able to "turn down" the volume around you, without impacting *how* you hear sounds or conversations with others.

Also, their ear plugs are made of a clear material that makes them **virtually invisible** to others—and they're ergonomically designed for **all-day comfort!**

**Don't let the sounds of daily life ruin your hearing. Get social hearing protection now!**

- Protection against hearing loss.
- Hear the same high and low frequencies—only the volume is reduced.
- Ability to carry on normal conversation.
- Washable, reusable, and constructed for long-term use.

One container of **Hearos™ Hi-Fidelity Ear Plugs** retails for \$14. Member price is reduced to **\$10.50**. Some people purchase more than one set to have them available in as many places as possible such as one's car, suitcase, or different residences.

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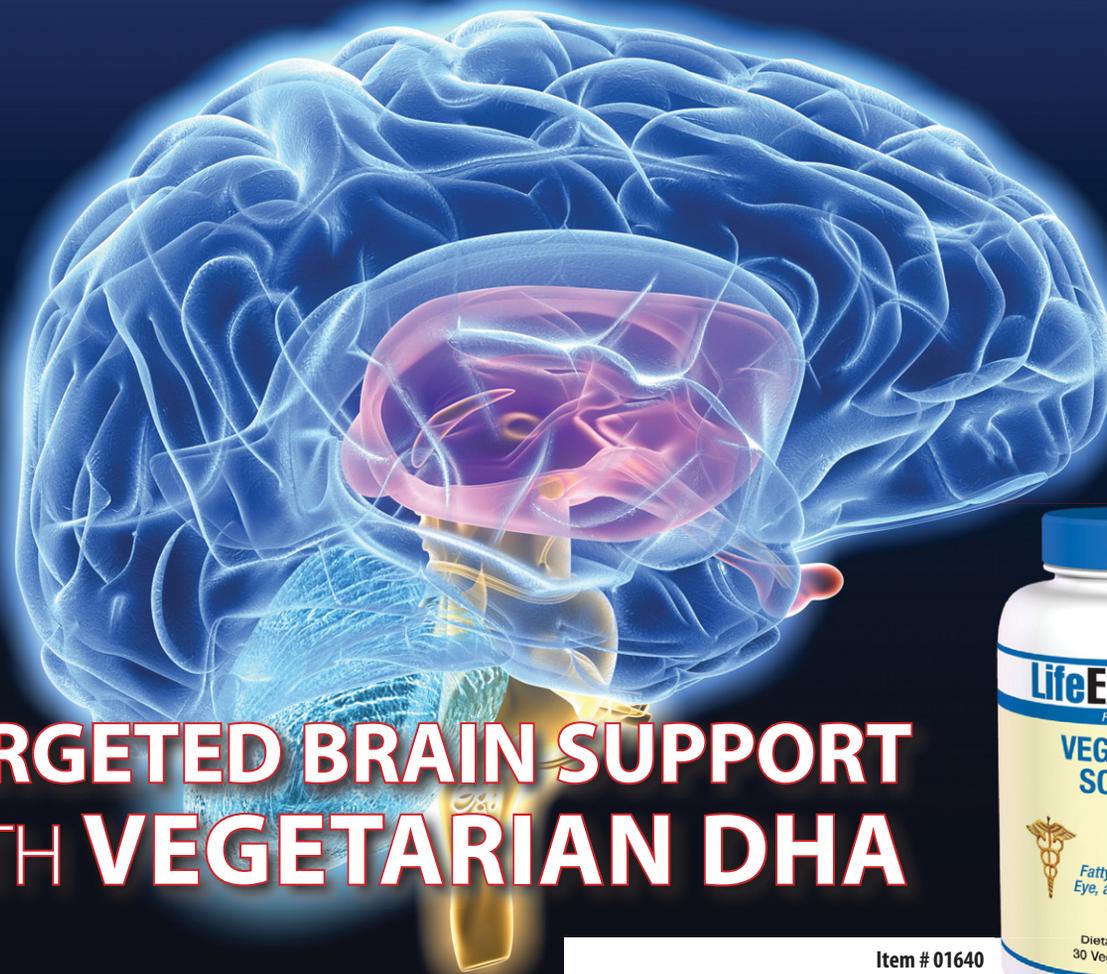


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Item # 01629

To order **Hearos™ Hi-Fidelity Ear Plugs**, call **1-800-544-4440** or visit **www.LifeExtension.com**



# TARGETED BRAIN SUPPORT WITH VEGETARIAN DHA



Item # 01640

Although the **omega-3** fatty acids **DHA** and **EPA** occur together in fish oil, studies show that each of these fatty acids delivers unique health benefits.

While most people obtain enough **DHA** from fish oil supplements, some individuals wish to boost their DHA levels for cognitive health.

For example, DHA accounts for **40%** of the polyunsaturated fats in the brain!<sup>1</sup>

Brain synapses—the connectors through which brain neurons communicate with each other—have a higher concentration of DHA than almost any other tissue in the body.

DHA stimulates the production of neuronal features that underlie learning.

## A Crucial Key to Brain Health

Recent studies show that DHA is required for the production of essential *neuroprotectins* to support healthy *cell signaling*. In fact, scientists have been focusing research specifically on how sufficient levels of DHA in healthy individuals may support normal mood and behavior in adults and children, as well as normal cognitive function at any age.<sup>2-4</sup>

## Scientifically Validated

DHA is a major structural fat in the retina of the eye, accounting for up to **60%** of the total polyunsaturated fatty acids (PUFAs).

And a wealth of research demonstrates that this important fatty acid plays an important role in our bodies.<sup>5-16</sup>

## Vegetarians Deficient in DHA

Scientific research has found that the proportions of DHA in body tissue **“are substantially lower in vegans and vegetarians”** compared with those who regularly eat foods from animal sources.<sup>2</sup>

A scientific study has found that **200 mg** of DHA results in **“a large increase in the proportion of DHA in blood lipids in vegetarians and vegans.”**<sup>17</sup>

**Life Extension**<sup>®</sup> members now have access to a highly refined DHA oil derived entirely from algae cells in culture.

Vegetarian Sourced DHA is a premium DHA derived from sustainable algae sources. It meets the most rigid standards of vegan and vegetarian diets.

A bottle containing **30 200 mg** vegetarian softgels of **Vegetarian Sourced DHA** retails for \$20. If a member buys four bottles, the price is reduced to just **\$13.50** per bottle.

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Supportive but not conclusive research shows that consumption of DHA omega-3 fatty acid may reduce the risk of coronary heart disease.

To order **Vegetarian Sourced DHA**, call **1-800-544-4440** or visit **www.LifeExtension.com**.

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.

# Age-Related Metabolic *Decline* and Weight Gain

BY MICHAEL DOWNEY

A mechanism long known to contribute to age-related weight gain is a **decrease** in **resting metabolic rate**<sup>1</sup>—the number of calories burned when the body is at rest. This can lead to significant **weight gain**—*even if you haven't changed your diet at all.*<sup>1-4</sup>

To make matters worse, **dieting** can exacerbate the problem because it can lead to a further **decrease** in the **resting metabolic rate.**<sup>5-7</sup>

Obese and overweight individuals have a reduced life expectancy.<sup>8</sup> They also have a greater risk of many disorders, including heart disease,<sup>9-11</sup> dementia,<sup>12</sup> osteoarthritis,<sup>13</sup> allergies,<sup>14,15</sup> and diabetes.<sup>16</sup>

Scientists have uncovered several ways to **reverse** the **decrease in metabolic rate** that makes it so easy to accumulate weight and fat as we age. A double-blind, placebo-controlled study showed results *in as little as 7 days.*<sup>17</sup>





## The Root of Age-Related Weight Gain

Most people tend to experience a reduction in their metabolic rate as they age, which can lead to the unhealthy accumulation of extra body fat.<sup>1-4,18,19</sup> A wealth of evidence now suggests that this tendency to pack on pounds over time originates with changes in your body's relationship with calories:

1. With age, your energy expenditure drops due to a decline in **resting metabolic rate**.<sup>3,4</sup>
2. Aging may also cause a reduction in the conversion of **stored body fat to energy**.<sup>20</sup>
3. There is an age-related reduction in **fat-free mass** in your body—which means a proportionate loss of this *more metabolically active* and energy-burning muscle tissue.<sup>2,18,19,21,22</sup>
4. Attempts to lose excess weight trigger a decrease in **resting metabolic rate**—ironically contributing to continued weight gain.<sup>5-7</sup>

The ideal solution to this problem would be one that restores **metabolic activity** and supports the burning of fat.

Non-resting (active) metabolism uses only about **30%** of total calories, and the generation of body heat requires only about **10%** of calories.<sup>2</sup> The other **60%**

of burned calories comes from your resting metabolic rate.<sup>2</sup>

**So, scientists have known that even just a 2-3% increase in resting metabolic rate could have the effect of reversing age-related weight and fat gain!**<sup>23</sup>

The challenge was to find a natural way to maintain body weight and resting metabolic rate without the cardiovascular or central nervous system side effects seen with stimulant-associated fat-burning agents.<sup>17,24</sup>

Researchers initially investigated **DHEA** (*dehydroepiandrosterone*) because age-related decreases in this hormone are associated with increased abdominal fat.<sup>25</sup> From there, scientific attention began to focus on one of the many metabolites of DHEA—the chemical compound **3-acetyl-7-oxo-dehydroepiandrosterone**, commonly called **7-Keto DHEA** or simply **7-Keto**.

There were several reasons for great interest in this metabolite:

- Like DHEA, studies showed that average blood concentrations of 7-Keto **decline** with age.<sup>26</sup>
- To a greater degree than DHEA, 7-Keto was found to **raise metabolic rate** and **promote fat burning** by boosting the activation of three thermogenic enzymes that stimulate fatty acid oxidation:
  1. Glycerol-3-phosphate dehydrogenase,
  2. Malic enzyme, and
  3. Fatty acyl CoA oxidase.<sup>27-30</sup>
- Although DHEA's effect on thyroid function is not clear, it is known that 7-Keto increases thyroid hormones, which are associated with increased resting metabolic activity.<sup>31</sup>
- Unlike DHEA, 7-Keto is not converted into estrogen or testosterone, making it **safer** for use by people with hormone-dependent conditions, such as prostate and breast cancers.<sup>30</sup>

Also, well-controlled research on healthy, human volunteers found daily administration of 7-Keto to be very well-tolerated.<sup>24</sup>

**So 7-Keto supplements appeared to be a safe and effective answer to the age-related decline of resting metabolic rates.**

To verify these benefits, scientists set out to confirm if **7-Keto** supplementation induces an increase in resting metabolic rate. They conducted a clinical trial of the most rigorous type...a randomized, double-blind, placebo-controlled study on humans.

## Restoring Resting Metabolic Rate In as Little as 7 Days

Because the age-related decrease in metabolism takes place over many years, scientists needed to find a way to study metabolic slowdown over a shorter period. In order to achieve this effect, they set up a clinical study in which volunteers were placed on a *calorie-restricted diet*—a known trigger for a decreased resting metabolic rate.<sup>5-7</sup>

In this randomized, double-blind, placebo-controlled study, researchers used a *cross-over* design in which a group of overweight volunteers took **7-Keto** during one phase and a placebo during another phase. In this type of study, the subjects essentially act as their own control group, which produces more reliable observations.

As expected, the metabolic effect of the calorie-restricted diet triggered a decrease in resting metabolic rate of **3.9%** during the placebo phase.<sup>17</sup>

However, 7-Keto supplements taken twice daily reversed this **3.9%** decrease and further increased resting metabolic rate by **1.4%** above the baseline level—**in just 7 days!**<sup>17</sup>

This represented an overall increase of **5.3%** in energy consumption—*equivalent to about 96 extra calories burned per day*—but with no change in exercise levels. **This indicated that 7-Keto supplements can increase resting metabolic rate—and within a 7-day period!**

The observed **5.3%** increase in resting metabolic rate exceeded the **2-3%** increase that scientists had previously speculated would be sufficient to help reverse *age-related* weight gain.<sup>23</sup>

Also, 7-Keto supplements were found in this study to have no cardiovascular or central nervous system side effects.<sup>17</sup> This confirmed earlier research demonstrating that 7-Keto was safe and well-tolerated.<sup>24, 32-34</sup>

Although this research established the ability of 7-Keto to increase resting metabolic rate—*suggesting it would also help prevent age-related weight gain*—scientists conducted additional placebo-controlled studies in order to measure the precise impact of 7-Keto supplements on weight.

## Restore Youthful Metabolism with 7-Keto

- Aging involves significantly **reduced resting metabolic rate**<sup>1</sup> and a loss of fat-free mass.<sup>2,18,19,21,22</sup>
- The resulting weight and fat gain increases the risk of numerous problems, including heart disease,<sup>9-11</sup> diabetes,<sup>16</sup> and dementia<sup>12</sup>—**lowering life expectancy**.<sup>8</sup>
- Scientists have now shown that supplementing with **7-Keto**, a DHEA metabolite, can restore resting metabolic rate **in just 7 days!**<sup>17</sup>
- In double-blind, placebo-controlled research, 7-Keto supplements were found to produce, compared to placebo, almost **3 times** the weight loss—and over **3 times** the decrease in body fat percentage **within 8 weeks**.<sup>36,36</sup>

What You Need to Know



## Metabolically Induced Weight Loss

Supplementation with 7-Keto raises resting metabolic rate, which in turn would be expected to produce **weight loss**.<sup>17,23,35</sup> To verify this result, scientists enlisted 30 healthy, overweight adults with an average age of 44.5 years, in a randomized, double-blind, placebo-controlled study. They were randomly divided into two groups.

Half of the participants were given **100 mg** of 7-Keto **twice daily**, while the other half were given a placebo. Both groups followed a diet of **1,800 calories** a day and took part in 60 minutes of exercise training three times per week.

After 8 weeks, the 7-Keto subjects lost an average of **6.34 pounds** versus an average of **2.13 pounds** in the control group. The 7-Keto participants also lost **over 3 times more body fat** than the control subjects—**1.8%** vs. **0.56%**. An increase in **thyroid hormone activity** was observed in the 7-Keto group, which targets fat-burning genes in the mitochondria and adipose tissue. 7-Keto did not adversely affect thyroid function and no negative effects were found.<sup>35</sup>

Because there were no significant differences between the two groups in terms of overall calorie intake or total calorie expenditure, the study concluded that **7-Keto induces weight loss**.<sup>35</sup>

Scientists then conducted a *second* randomized, double-blind, placebo-controlled trial to assess the effects of a formulation containing 7-Keto on over-

weight subjects. The formulation contained no ingredients with proven weight-loss effects except **7-Keto**.

The treatment group received **200 mg a day** of the 7-Keto formulation, while the control group received a placebo. All participants were placed on a weight-reduction diet of **1,800 calories** a day and were monitored in an exercise program. Within 8 weeks, the 7-Keto group lost an average of **4.73 pounds**—compared to **1.58 pounds** lost by the control group. The 7-Keto group also decreased their body mass index (BMI) score by an average of **0.71**, a much greater improvement than the average BMI reduction of **0.01** among the control subjects. 7-Keto was well tolerated and no significant side effects were found.<sup>36</sup>

As in the previous study, there were no significant differences between the two groups in terms of calories consumed or expended. **These results confirmed that supplementation with 7-Keto produces weight loss**.<sup>36</sup>

## Four More Anti-Aging Benefits

Beyond its ability to reverse the age-related decrease in resting metabolic rate—and ultimately help produce weight loss—7-Keto has been shown to deliver a number of other **anti-aging** dividends, ranging from boosting weakened immune function to improving memory.

### ENHANCED IMMUNE SYSTEM

The thymus atrophies after adolescence, shrinking to about **15%** of its maximum size by middle age. Since immune cells called T-cells mature in the thymus, T-cell function decreases with this age-related shrinkage.<sup>37</sup> Soon, parts of the **immune system become weakened**, substantially reducing our ability to avoid infections and autoimmune responses.<sup>37</sup>

Scientists found indications that 7-Keto has immune-boosting effects in an in vitro study of spleen lymphocytes from mice. An immune-suppressing drug was introduced, which as expected, dramatically reduced lymphocyte levels. But when 7-Keto was added, lymphocyte viability increased by **95-117%**. In addition, a measure of *primary immune response* increased by **120-150%**.<sup>38</sup>

7-Keto was shown in a lab study of human lymphocyte cells to enhance the production of *interleukin-2*.<sup>39</sup> Interleukin-2 is an important type of signaling molecule that stimulates the production of various T-lymphocytes, which in turn stimulates production of other immune system agents.<sup>40</sup> The capacity of 7-Keto to increase interleukin-2 suggested it may offer strong *immune-enhancing benefits* against



a wide range of conditions, including major diseases such as cancer and AIDS.<sup>39</sup>

A team of scientists then exposed mice with compromised immune systems to four weeks of mild, chronic stress. This resulted in a decrease in their white blood cell proliferative response and a decrease in thyroid hormone levels. However, when the mice were given 7-Keto, their white blood cell proliferative response was greatly increased, natural killer cell activity was dramatically enhanced, and thyroid levels increased to normal levels.<sup>41</sup>

These intriguing results led to a 7-Keto study on humans.

In a randomized, double-blind, placebo-controlled study enlisting 22 women and 20 men over the age of 65, the treatment group took **100 mg** of 7-Keto **twice daily**, while the controls took a physically identical placebo. After four weeks, subjects in the 7-Keto group showed a significant increase in **immune helper cells**, decrease in **immune suppressor cells**, and increase in **neutrophils**, the first white blood cells to respond to an infection.<sup>42</sup> (Note that excess levels of **immune suppressor cells** can prematurely turn critical immune functions “off”, so suppressing them is of importance in individuals seeking enhanced immune activity.)

## IMPROVED CHOLESTEROL PROFILE

The age-related decline in resting metabolic rate can lead to obesity and an increase in levels of harmful *low-density lipoprotein* or LDL cholesterol.<sup>43</sup>

When LDL cholesterol increases—and is not offset by a greater increase in *high-density lipoprotein* or HDL cholesterol—it results in a **higher atherogenic index**. This is the ratio of total cholesterol to HDL, and a higher ratio represents a higher risk of cardiovascular disease and heart attack.

Scientists tested the effect of 7-Keto on the cholesterol profiles of 10 human subjects. Volunteers aged 27 to 72 applied a gel containing 7-Keto to their abdominal skin for **5 days** consecutively. This delivered **25 mg** of 7-Keto.

While there was only a very modest decrease in total cholesterol, there was a “strongly significant” improvement in cholesterol composition. Harmful LDL cholesterol levels decreased slightly, and HDL cholesterol levels rose significantly. Together, these changes produced a strong reduction—meaning improvement—in the atherogenic index. There was also an increase in beneficial *apolipoprotein A-1*, a protector of cardiovascular health.<sup>44</sup>

These benefits were observed after administration of just **25 mg** of 7-Keto—a relatively small dose.<sup>44</sup>



## REVERSED MEMORY DECLINE

Normal aging is associated with age-related memory impairment—a decline in various memory abilities that includes a decrease in the ability to encode new memories.<sup>45</sup> 7-Keto supplementation may be able to reverse this age-related memory loss.

Scientists trained young mice to use a water maze. They then experimentally induced memory loss. A subsequent single injection of 7-Keto—at **24 mg per kg** of body weight (equivalent to **144 mg** for a 165 pound adult)—reversed the memory deficit.<sup>46</sup>

The team then fed 7-Keto to *old* mice that had learned the maze. The 7-Keto mice were able to retain their memory of the maze for the entire **4-week** test period—while old mice not receiving 7-Keto lost their memory of the task.<sup>46</sup>

Clinical studies are still needed to confirm this reversal of age-related memory decline in humans, but the results of these animal studies are encouraging.

## GENERAL ANTI-AGING BENEFITS

Research conducted on *DHEA* (*dehydroepiandrosterone*)—the hormone that produces 7-Keto as a metabolite—produced a number of general **anti-aging** effects from replacement of age-diminished DHEA levels.

Elderly human volunteers were given **50 mg** of DHEA **daily**. After 3 months, scientists found increased levels of *anabolic growth factor* and greater lean body mass, muscle strength, immune function, and quality of life. Both men and women reported improvements in physical and psychological well-being, energy, mood, sleep patterns, relaxation feelings, and the ability to deal with stress.<sup>47</sup>

## Targeting Underlying Factors: How 7-Keto Works

Scientists are beginning to uncover the mechanisms of action behind the remarkable ability of 7-Keto to reverse the age-related decrease in resting metabolic rate and to produce various anti-aging benefits.

### Liver Enzymes

Scientific studies indicate that 7-Keto powerfully boosts levels of three liver enzymes that result in stimulation of fatty acid oxidation.<sup>27-30</sup>

- Glycerol-3-phosphate dehydrogenase
- Malic enzyme
- Fatty acyl CoA oxidase

These enzymes accelerate a heat-generating process called *thermogenesis*, which promotes the utilization of fat reserves. Because this thermogenic effect reverses the age-related decrease in resting metabolic rate, this may explain 7-Keto's ability to decrease weight and body fat.<sup>17,29,30</sup>

### Thyroid Hormone

Supplementing with 7-Keto results in elevated levels of the *T-3 thyroid hormone*.<sup>31</sup> Thyroid hormones regulate metabolic activity, which declines with age.<sup>1</sup> This explains another potential mechanism by which 7-Keto triggers reductions in body weight and body fat.<sup>35,36</sup>

### Interleukin-2

7-Keto has been shown to enhance the production of *interleukin-2* in human lymphocytes.<sup>39</sup> When interleukin-2 reacts with its corresponding receptor sites on cell surfaces, it stimulates production and differentiation of various T-lymphocytes, which in turn trigger production of other immune agents.<sup>40</sup> The result is a broad enhancement of the immune system, which is normally weakened by advancing age.<sup>37,49</sup> Study participants experienced decreased immune suppressor cells and increased immune helper cells.<sup>42</sup> Supplementation with 7-Keto may fortify defenses against numerous conditions, including killers such as cancer and AIDS.



DHEA is converted by the body into *androstenedione*, which is then converted into the male and female sex steroid hormones, estrogen and testosterone. This conversion is highly individualized and some people could end up with excess levels of these sex hormones—which could pose a risk if any of those individuals have a *hormone-dependent disease*, such as prostate or breast cancer.<sup>30,48</sup>

Unlike DHEA however, 7-Keto does not trigger higher sex hormone levels.<sup>44</sup> That means that supplementing with 7-Keto may be a **safer** way for some people to benefit from these anti-aging effects including enhancing the immune system, reducing age-related memory loss, and improving cholesterol profiles.

## Summary

Advancing age causes a significantly **decreased resting metabolic rate**.<sup>1</sup> This can lead to age-related **increases in body fat**<sup>1-4,18,19</sup> along with increased risk of heart disease,<sup>9-11</sup> diabetes,<sup>16</sup> and dementia.<sup>12</sup> Aging individuals often find themselves overweight or obese<sup>1-4,18,19</sup>—which means a **reduced life expectancy**.<sup>8</sup>

Unfortunately, dieting can trigger a further metabolic slowdown.<sup>5-7</sup>

Fortunately, scientists have found that replenishing the levels of a DHEA metabolite known as **7-Keto** reverses the age-related decrease in metabolic rate **in just 7 days**.<sup>17</sup> This translates into reductions in weight and body mass index **in just 8 weeks!**<sup>35,36</sup>

It would appear those seeking to lower their calorie intake would enjoy greater reduction of body fat mass by supplementing with **100 mg of 7-Keto** twice a day.

Best of all, 7-Keto has other anti-aging benefits—including enhancing immune function, reducing age-related memory loss, and improving cholesterol profiles.<sup>38,43,46</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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# CALORIE CONTROL WEIGHT MANAGEMENT FORMULA

## NOW WITH CoffeeGenic™ GREEN COFFEE EXTRACT



Nearly **80%** of **highly motivated** people fail to achieve long-lasting **weight loss** with diet and lifestyle modifications alone.<sup>1</sup>

That's why the **Calorie Control Weight Management Formula** was designed. Clinical studies validate that when overweight humans take just some of the **natural ingredients** in this formula combined with reduced calorie intake, there is a greater **loss of body fat** compared to diet alone.<sup>2-4</sup> **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** can help give you the winning edge when following a calorie-modulated weight loss program.

**Calorie Control Weight Management Formula** comes in a natural **blueberry flavor** and is available in a 60-serving bottle or individual **stick packs** that you can conveniently use when away from home.

Each dose has been fortified with **200 mg of CoffeeGenic™ Green Coffee Extract** to impede rapid absorption of starches and sugary foods<sup>5</sup> and suppress **after-meal** glucose surges.<sup>6</sup>

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

### Importance of Taking Calorie Control Weight Management Formula Before Heavy Meals

Once we accept the fact that weight loss requires more than diet and exercise alone, it becomes easy to understand the importance of taking the **Calorie Control Weight Management** formula before two heaviest meals of the day to help neutralize the unwanted effects of caloric excess. Those seeking to emulate the dose used in the 2012 study that induced an average **17.6 pounds** of weight loss<sup>7</sup> might want to also take a **200 mg** capsule of standardized **green coffee bean extract** along a serving of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** before meals.

Each appetizing blueberry flavored stick pack or scoop of the Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract, powder provides:

<b>CoffeeGenic™ Green Coffee (<i>Coffea arabica</i>) Extract</b> (bean) [std to 50% Chlorogenic acid (100 mg)]	<b>200 mg</b>
<b>LuraLean® propolmannan</b> ( <i>Amorphophallus konjac</i> K. Koch, ssp. <i>Amorphophallus japonica</i> ) fiber Extract (root)	<b>2,000 mg</b>
<b>Phase 2® <i>Phaseolus vulgaris</i> white kidney</b> (bean) Extract	<b>445 mg</b>
<b>Integra-Lean® African Mango (<i>Irvingia gabonensis</i>)</b> proprietary extract (seed)	<b>150 mg</b>
<b>Tea Slender™ Green Tea Phytosome</b> Green Tea ( <i>Camellia sinensis</i> ) Phytosome Decaffeinated Extract (leaf) bound to phosphatidylcholine (from lecithin)	<b>150 mg</b>

### Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract • Item # 01693\*

(Each serving contains approximately 6 mg caffeine)

A bottle containing 60 servings of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** natural blueberry flavor powder retails for \$60. If a member buys four bottles, the price is reduced to just **\$40.50** per bottle.

For added convenience of use, this new formula also comes in **60 individual stick packs**. Each box containing 60 servings of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** natural blueberry flavor powder retails for \$64. If a member buys four boxes, the price is reduced to just **\$45** per box.

**Item # 01694\***

**Contains soybeans. Contains corn.**

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**CAUTION:** Take at least two hours apart from medications. Because this product may lower blood glucose, consult your healthcare provider before taking this product if you are taking blood glucose-lowering medication. Taking fiber products without adequate liquid may increase the risk of choking. Consult your

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healthcare provider before taking this product if you have difficulty swallowing or esophageal narrowing. **Integra-Lean® Irvingia** is protected by U.S. Patent No. 7,537,790. Other patents pending. **Phase 2®** is used under license. **LuraLean®** is a registered trademark of AHD International LLC.



Item # 01693



Item # 01694

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

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.

# Discover the European “Secret” to **Youthful, Healthy Legs**

Combat Unsightly Veins with This High-Potency Extract

## 30 YEARS OF CLINICAL EVIDENCE BRINGS LONG-AWAITED RELIEF

It is estimated that *half* of all women in the United States will develop unsightly veins by age 50.<sup>1</sup> While dermatologists often suggest surgery to correct this “age-related” issue, European women have enjoyed access to a **natural solution for 30 years!**

Life Extension® offers American women the same extract *without* a prescription. No more compression bandages or stockings. Instead, experience the same beautifying effects European women have been raving about for three decades—**naturally!**

Derived from the sweet orange, **European Leg Solution** featuring **Certified Diosmin 95** contains a plant-based nutrient called **diosmin** and is available in a vegetarian tablet.

## MICRONIZED FOR GREATER EFFECTIVENESS

In order to derive any significant benefit, bioactive diosmin extract **must be able to reach veins directly.**

Life Extension®’s proprietary extract undergoes a complex, highly purified process called **micronization**. It yields the only *form* of diosmin clinically proven to support healthy vascular function in the legs.<sup>1,2</sup>

This scientifically controlled, multi-phase technique *radically reduces* the size of the standard diosmin particles contained in each tablet, from **100 microns** to less than **45 microns**. The result is an optimally bioavailable standardized extract. This ensures rapid, efficient delivery of diosmin to the bloodstream, enabling enhanced *penetration* of the delicate inner lining of the veins.

As with so many “age-related” conditions, *inflammation*<sup>3</sup> is the chief culprit behind the presence of unsightly veins. Inflammatory responses are *precipitated* by the interaction between white blood cells and the endothelial lining.

Life Extension’s **European Leg Solution** featuring **Certified Diosmin 95** offers effective protection **by disrupting this inflammatory response.**

## THE PREFERRED TREATMENT AMONG EUROPEAN WOMEN FOR BEAUTIFUL LEGS IS HERE

Life Extension’s **European Leg Solution** featuring **Certified Diosmin 95** provides the same pharmaceutical grade extract used by millions throughout Europe. The retail price for a bottle containing 30 600 mg vegetarian tablets is \$20. If a member buys four bottles, the cost is only **\$13.50** per bottle.

Contains corn.

### Caution

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



Item # 01042

## Six Ways Life Extension’s European Leg Solution featuring Certified Diosmin 95 Works for You

1. Maintains healthy blood flow through your capillaries—the most *fragile* of your blood vessels.
2. Maintains tone and elasticity of your veins—the key to sustained vascular health.
3. Eases the effects of circulating cytokines that promote inflammation.
4. Safeguards collagen and elastin against oxidative damage.
5. Enjoys an outstanding safety record.
6. Produces results in just 1–2 weeks, with a single **600 mg** tablet taken each morning.<sup>2</sup>

\*Product not for sale outside the United States.

To order **European Leg Solution** featuring **Certified Diosmin 95**,  
call **1-800-544-4440** or visit **www.LifeExtension.com**

References: 1. <http://www.womenshealth.gov/faq/varicose-spider-veins.cfm>. 2. *Angiology*. 2003 Jul-Aug;54 Suppl 1:S33-44. 3. *Eur J Vasc Endovasc Surg* 2004;28:484-93.

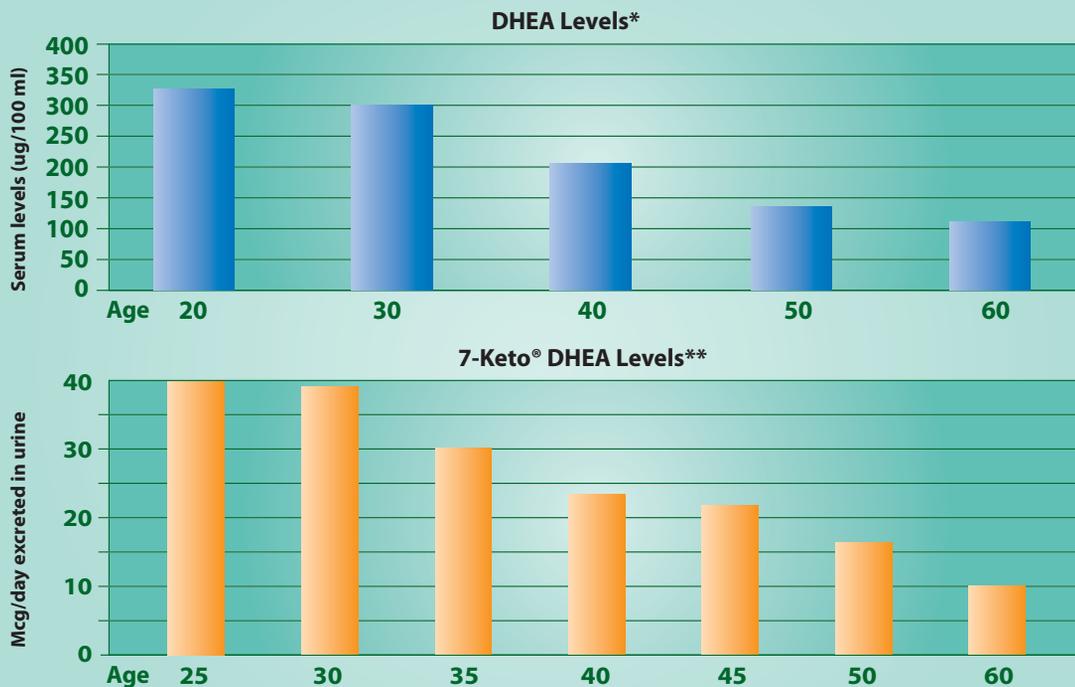
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# 7-KETO<sup>®</sup> DHEA



## DHEA and 7-Keto<sup>®</sup> DHEA Levels Decline with Advancing Age

DHEA is the body's most abundant circulating hormone, but its production peaks in one's twenties and steadily declines thereafter, leading to age-related hormonal imbalances that can affect quality of life.<sup>1-3</sup> The body's production of 7-Keto<sup>®</sup> DHEA, a natural metabolite of DHEA, also declines markedly with age.



\*Source: Orentreich, 1984. \*\*Source: Marenich, 1979.

7-Keto<sup>®</sup> DHEA safely increases fat-burning enzymes in the liver. Human subjects who consumed 200 mg of 7-Keto<sup>®</sup> DHEA in conjunction with a diet and exercise program lost more weight than those who took a placebo.<sup>4</sup>

To augment the fat-loss benefits of diet and exercise, Life Extension offers 100-mg 7-Keto<sup>®</sup> DHEA vegetarian capsules and a supplement called DHEA Complete that contains 25 mg of DHEA and 100 mg of 7-Keto<sup>®</sup> DHEA in each capsule.

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

**Note:** Those with hormone-sensitive cancers should avoid regular DHEA, but this caution does not apply to 7-Keto<sup>®</sup> DHEA. Unlike regular DHEA, 7-Keto<sup>®</sup> does not increase testosterone or estrogen levels in the body.

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A bottle containing 60 100-mg vegetarian capsules of 7-Keto<sup>®</sup> DHEA, along with a special antioxidant blend, retails for \$40; if a member orders four bottles, the price is reduced to only \$27 per bottle.

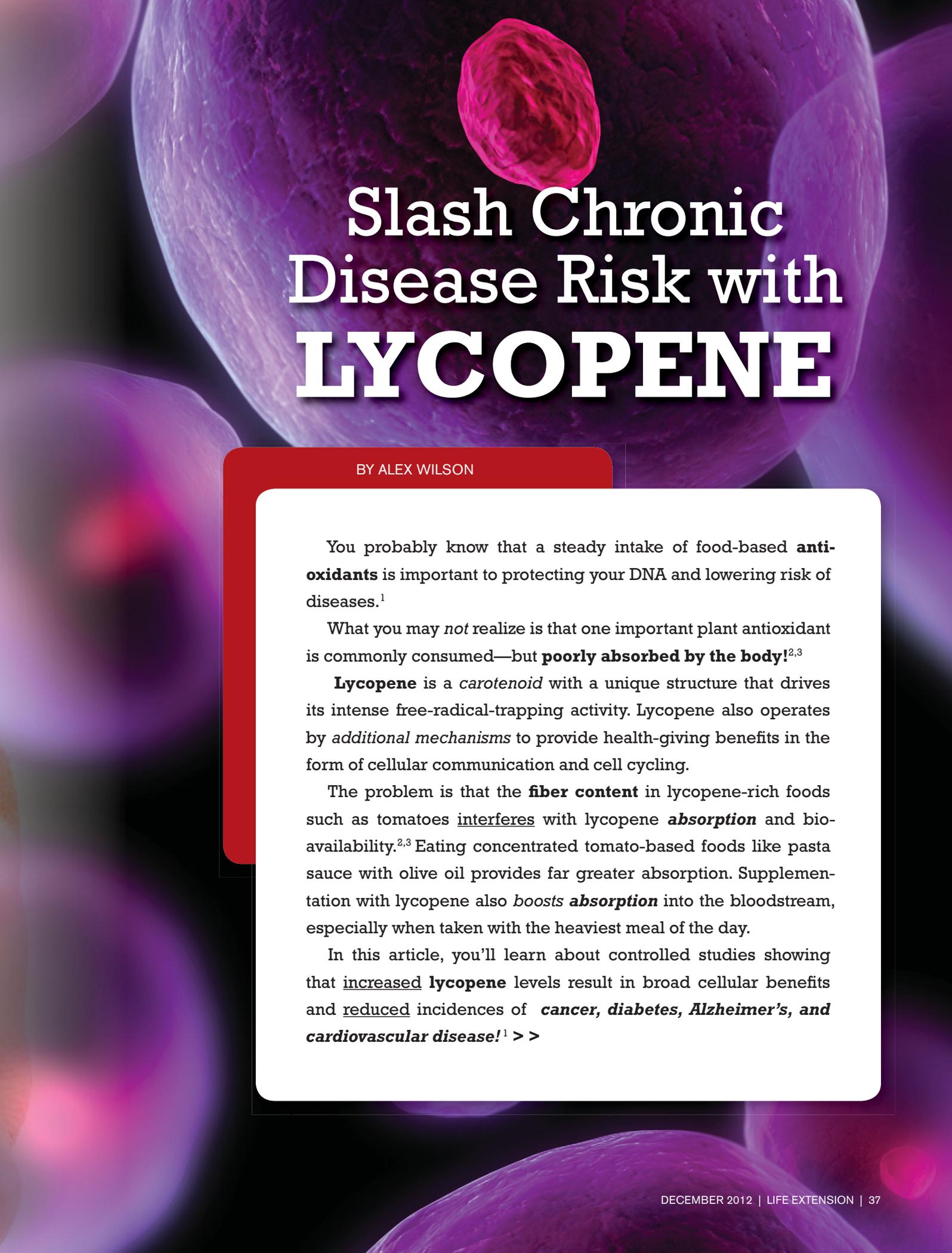


For those seeking to combine the multiple benefits of DHEA and 7-Keto<sup>®</sup> DHEA in a single formula, DHEA Complete provides 25 mg of regular DHEA and 100 mg of 7-Keto<sup>®</sup> DHEA per capsule. A bottle containing 60 100-mg vegetarian capsules of 7-Keto<sup>®</sup> DHEA, along with 25 mg of regular DHEA and a special antioxidant blend, retails for \$48; if a member orders four bottles, the price is reduced to only \$32.40 per bottle.

**To order 7-Keto<sup>®</sup> DHEA or DHEA Complete, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com).**

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# Slash Chronic Disease Risk with **LYCOPENE**

BY ALEX WILSON

You probably know that a steady intake of food-based **anti-oxidants** is important to protecting your DNA and lowering risk of diseases.<sup>1</sup>

What you may *not* realize is that one important plant antioxidant is commonly consumed—but **poorly absorbed by the body!**<sup>2,3</sup>

**Lycopene** is a *carotenoid* with a unique structure that drives its intense free-radical-trapping activity. Lycopene also operates by *additional mechanisms* to provide health-giving benefits in the form of cellular communication and cell cycling.

The problem is that the **fiber content** in lycopene-rich foods such as tomatoes interferes with lycopene **absorption** and bio-availability.<sup>2,3</sup> Eating concentrated tomato-based foods like pasta sauce with olive oil provides far greater absorption. Supplementation with lycopene also *boosts absorption* into the bloodstream, especially when taken with the heaviest meal of the day.

In this article, you'll learn about controlled studies showing that increased lycopene levels result in broad cellular benefits and reduced incidences of **cancer, diabetes, Alzheimer's, and cardiovascular disease!**<sup>1</sup> >>

## What is Lycopene?

Lycopene is a member of the carotenoid family of plant pigment molecules. Carotenoids give vegetables and fruits their yellow, red, and orange colors; they are part of the plant's natural mechanism for processing and protecting themselves from the sun's energy.<sup>4,5</sup> Carotenoids, and especially lycopene, are extremely powerful antioxidants.

By capturing *reactive oxygen species*, lycopene prevents damage to fats, proteins, and DNA strands that we now recognize to be the causes of aging and other chronic diseases, including cardiovascular and neurological diseases, diabetes, cancer, and even osteoporosis.<sup>4,5</sup>

In addition to its antioxidant characteristics, lycopene has at least four other important health-promoting mechanisms:<sup>5,6</sup>

1. Lycopene facilitates cell-to-cell communication at sites called "gap junctions;" these junctions are essential for cells to know when to stop growing which is key for preventing cancer from developing.
2. Lycopene stimulates the immune system to help destroy invading microorganisms and early cancer cells.
3. Lycopene regulates endocrine (glandular) communication pathways.
4. Lycopene regulates the cell reproductive cycle, preventing cancer development.

Humans are incapable of producing carotenoids, so we rely on our diet to obtain sufficient amounts.<sup>5</sup>

Tomatoes are our main dietary source of lycopene, but lycopene from fresh tomatoes is less bioavailable than that from processed tomato products.<sup>7,8</sup>

There's no question that boosting your lycopene intake has major protective effects.<sup>9</sup>

Higher lycopene intake and higher blood lycopene levels are strongly associated with reduced risk for a variety of cancers, as well as cardiovascular diseases and the metabolic syndrome.

## Lycopene and Cancer Prevention

Cancer is the second leading killer of adult Americans, resulting in more than 527,000 deaths annually in the US.<sup>10</sup> Because cancer is closely associated with a lifetime burden of oxidative stress, lycopene, with its strong antioxidant effects, is a subject of keen interest to oncologists and public health workers.<sup>11</sup> As we've seen, lycopene has *additional* mechanisms that add to its cancer preventive powers.

Prostate cancer is the disease that is best known as a target for prevention by lycopene.<sup>6,12,13</sup> In addition to reducing oxidant stress in prostate tissue, lycopene also reduces *inflammatory signaling, prevents DNA damage, modulates the expression of important endocrine growth factors, and enhances communication between cancer cells at "gap junctions,"* helping them stop growing out of control.<sup>6</sup> Lycopene also slows the new blood vessel growth that prostate cancers need to support their development.<sup>14</sup>

Human studies of lycopene and prostate cancer are encouraging. Lycopene intake is correlated with lower prostate cancer development and with slower progression if it does develop. Lycopene supplementation also reduces cancer-related symptoms such as pain and urinary tract symptoms.<sup>15</sup>



In one well-publicized investigation, men with newly-diagnosed prostate tumors were supplemented with lycopene **15 mg twice daily** for three weeks prior to surgical removal of diseased tissue.<sup>16</sup> In supplemented patients, the tumors were found at surgery to be significantly **smaller and less invasive** than those in control patients. The tumors were also significantly more likely to be **lower-grade** in supplemented than in control patients. Levels of the tumor marker called **prostate specific antigen** (PSA) fell substantially in supplemented patients, while they rose by about the same rate in control patients.<sup>16</sup> Other human studies have shown similar effects, including slowing the rate of PSA increase.<sup>17,18</sup>

Breast cancer is the leading cause of cancer death in women.<sup>19</sup> It too may yield to lycopene's preventive effects. After treatment with lycopene, human breast cancer cells in culture showed genetic changes resulting in improved DNA repair, slowing of cell replication, and increased death by apoptosis.<sup>20</sup> Both alone and in combination with melatonin, lycopene sharply reduces markers of oxidant stress in breast tissue, while enhancing the breast's natural antioxidant enzyme protection systems.<sup>19</sup>

Lycopene may help reduce the risk of cervical cancer as well; women with the highest lycopene concentrations in blood are **56%** less likely to have persistent infection with human papillomavirus, the main cause of cervical malignancies.<sup>21</sup>

Lycopene is also showing promise in preventing lung cancer. Lung tissue has a very high exposure to oxygen, making it especially vulnerable to the oxidant stress that can lead to cancers. Lycopene reduces lung cells' oxidant-induced DNA damage in humans, and people with the highest dietary intakes of lycopene have a **28%** lower risk of developing lung cancer.<sup>22,23</sup>

Colon cancer is the second most common cancer in adults. Like many other cancers, it is controlled in part by hormonal factors, including insulin-like growth factor-1, or IGF-1.<sup>24</sup> Lycopene supplementation, **30 mg/day**, in human subjects with a family or personal history of colon cancer, decreases IGF-1 concentrations while increasing levels of the IGF-1 binding protein, which has the effect of reducing IGF-1 availability to stimulate cancer cell growth.<sup>24,25</sup>

**One important note:** lycopene's antioxidant effects are so powerful that they have the potential to interfere with cancer chemo- and radiation therapy, both of which rely on producing free radicals within tumors to kill malignant cells.<sup>12</sup> Experts warn that people who are undergoing either chemo- or radiation therapy for a known cancer should speak with their treating oncologist before increasing lycopene intake.<sup>12</sup>



What You Need to Know

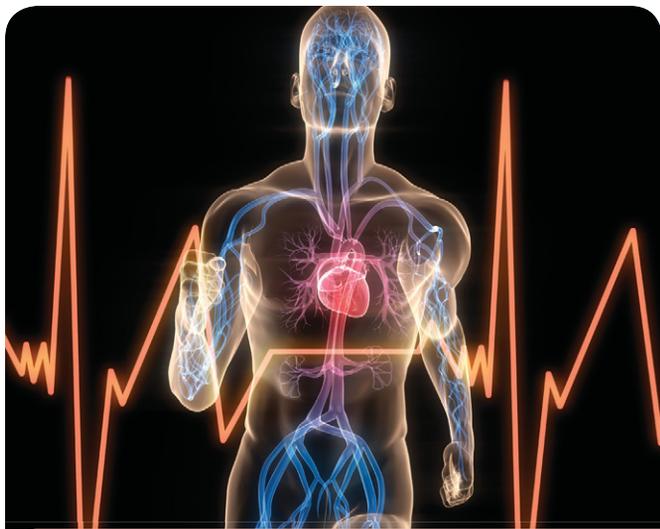
## Reduce Risk of Chronic Disease with Lycopene

- Oxidant stress causes aging and other life span-shortening diseases.
- Food-derived antioxidants are critical in combating the effects of aging.
- Lycopene, a member of the carotenoid family of nutrients, has especially powerful antioxidant effects.
- But lycopene, found in nature in tomatoes and other red fruits, is not well-absorbed in the intestinal tract from unprocessed foods.
- Studies show that people who consume large quantities of processed tomato products like ketchup, pizza sauce, and tomato paste have lower rates of chronic illness.
- But eating enough of those products to obtain sufficient lycopene can be challenging.
- Lycopene supplementation has been shown to prevent or reduce the risk of chronic diseases such as cancer, cardiovascular disease, diabetes, and neurodegenerative disorders.
- Lycopene belongs on your supplement "short list" if you want broad-spectrum antioxidant support.

## Lycopene and Cardiovascular Disease

Cardiovascular diseases (heart attacks, stroke, congestive heart failure, and others) are the leading cause of death in Western societies; together they cause up to **1/3** of deaths around the globe.<sup>26,27</sup> It has long been known that diet is strongly correlated with the risk of these diseases.

People with low blood lycopene levels suffer from increased risk for atherosclerosis; including greater thickness and stiffness of their arteries.<sup>28</sup> People with atherosclerosis visible on ultrasound in their carotid arteries (those leading to the brain) have lower blood levels of lycopene than do those with normal carotids.<sup>29</sup>



Conversely, those with the highest lycopene blood levels have a **45%** lower risk of atherosclerosis.<sup>30</sup> That group also has more flexible arteries than those in the lower lycopene group and a reduced risk of heart attack.<sup>31</sup>

Lycopene protects heart and blood vessel tissue by several mechanisms, including antioxidant function. Lycopene scavenges the powerful oxidant *hypochlorous acid*, which is associated with atherosclerosis.<sup>32</sup> Lycopene also decreases fat and LDL cholesterol oxidation, steps that occur early in the chain of events that leads to atherosclerosis.<sup>33-35</sup>

Studies show that lycopene supplementation can decrease total cholesterol by **5.9%** and LDL cholesterol by **12.9%** (and by **50%** in animal studies).<sup>36,37</sup> Some of this effect may be due to lycopene's ability to inhibit cholesterol synthesis.<sup>31</sup>

Lycopene supplementation has powerful effects on the inflammation that is intimately involved with atherosclerosis.<sup>27</sup> Lab and human studies demonstrate that lycopene decreases production of multiple pro-inflammatory mediators and markers of inflammation.<sup>38</sup>

One dramatic human study showed that **15 mg/day** of lycopene orally improved endothelial function by **23%**.<sup>39</sup> At the same time the inflammatory marker, C-reactive protein (hs-CRP) fell dramatically, along with systolic blood pressure and important vascular adhesion molecules that trap platelets and immune cells to form inflammatory plaques. Some of that reduced inflammatory response is attributed to

## Oxidation Ages You Before Your Time

Your body is constantly under attack by highly reactive compounds called reactive oxygen species (ROS). ROS are generated as a result of your normal metabolic activity, as well as by unhealthy habits such as smoking, a high-fat diet, and excessive alcohol consumption. Even beneficial activities like exercise increase your exposure to oxidant stress.<sup>5</sup>

The result is damage to your body's most fundamental and vulnerable components: the enzymes and other proteins that carry out vital chemical reactions and that structure your body, the lipids (fats) that form the bulk of your cell membranes, and the DNA that carries the blueprint for your body's structure and function.<sup>5</sup>

Oxidation is not some subtle or theoretical risk: women at high risk for breast cancer excrete elevated levels of a marker of cell membrane oxidation, while

prostate cancer patients have **20%** more levels of those markers in their blood than matched controls.<sup>5</sup>

Oxidation of tumor suppressor proteins causes them to malfunction, allowing cancers to spring to life, while oxidized lipids in heart muscle and arteries promotes cardiovascular disease. And high levels of oxidized lipids, proteins, and DNA are found in otherwise healthy people as they age.<sup>5</sup>

The result of all this oxidation is a massive increase in your risk for chronic diseases, those preventable manifestations of aging that contribute to an untimely demise.<sup>5</sup>

For all of these reasons, then, you need to support your body's struggling antioxidant defense system with a steady intake of powerful dietary antioxidants like lycopene.

lycopene's ability to block fat oxidation in arterial lining cells.<sup>40,41</sup>

Intriguingly, neither diets high in tomatoes (**10 ounces/day**) nor diets containing **32-50 mg** of lycopene from tomato-based foods have any detectable effects on inflammatory markers,<sup>42</sup> though one study showed a modest **3.3%** improvement in endothelial function after consumption of **2.3 ounces/day** of tomato paste for 15 days.<sup>43</sup>

Even lycopene supplementation at moderate doses (**10 mg/day**) proved incapable of changing inflammatory markers or insulin resistance, another major cardiac risk factor.<sup>44</sup> Studies showing a substantial impact of lycopene intervention, instead, used **15-30 mg/day** of purified lycopene extracted from tomatoes.<sup>45</sup>

### Lycopene and Diabetes

Diabetes, like other chronic age-related conditions, is powerfully driven by oxidation and inflammation. Not surprisingly, then, blood lycopene levels in diabetics are typically much lower than they are in healthy control patients, presumably the result of consumption of lycopene by reactive oxygen species.<sup>46</sup>

Diabetics may be able to protect themselves by increasing their lycopene intake; studies show that high consumption of tomato products can improve resistance to oxidation in people with type II diabetes.<sup>47</sup> Diabetics with the highest blood lycopene levels also have greater glucose tolerance than do those with lower lycopene levels.<sup>48</sup>



### Higher Lycopene Intake Lowers Risk for Many Chronic Diseases

Disease	Lycopene Indicator	Risk Reduction
Death from All Causes	Moderate Blood Level	<b>18%</b> <sup>71</sup>
Overall Cancer Risk	Highest Blood Level	<b>45%</b> <sup>72</sup>
Breast Cancer	Highest Intake	<b>74%</b> <sup>73</sup>
Esophageal Cancer	Highest Intake	<b>30%</b> <sup>74</sup>
Lung Cancer	Highest Blood Level Highest Intake	<b>54%</b> <sup>75</sup> <b>29%</b> <sup>76</sup>
Death from Lung Cancer	Highest Blood Level	<b>54%</b> <sup>77</sup>
Death from Oral, Pharyngeal, Laryngeal Cancers	Highest Blood Level	<b>47%</b> ( <b>92%</b> in Nonsmokers) <sup>78</sup>
Ovarian Cancer	Highest Blood Level	<b>91%</b> <sup>79</sup>
Pancreatic Cancer	Highest Intake	<b>31%</b> <sup>80</sup>
Prostate Cancer	Highest Intake	<b>82%</b> <sup>81</sup>
Advanced Prostate Cancer	Highest Blood Level	<b>60%</b> <sup>82</sup>
Cardiovascular Disease (Women)	Tomato-based products, 10 or more servings/week	<b>29%</b> <sup>83</sup>
Cardiovascular Risk Factors (Women)	Tomato-based products, 10 or more servings/week	High Total Cholesterol: <b>31%</b> High LDL: <b>40%</b> High Hemoglobin A1c: <b>66%</b> <sup>84</sup>
Atherosclerosis	Highest Blood Levels	<b>55%</b> <sup>30</sup>
Elevated Blood Sugar	Highest Intake	<b>43%</b> <sup>50</sup>
Metabolic Syndrome	Highest Intake	<b>45%</b> <sup>85</sup>



Eating a lycopene-rich Mediterranean diet increases lycopene levels and can reduce levels of hemoglobin A1c, the blood marker of sustained blood sugar elevations, from **7.1** to **6.8%**.<sup>49,50</sup> (Tomatoes have other beneficial compounds such as **chlorogenic acid** that may have accounted for these marked reductions in hemoglobin A1c.)

The most common and life-threatening complication of diabetes is cardiovascular disease; like people in the general population, diabetics may be able to reduce their risk of cardiovascular complications by supplementing with lycopene.

Consuming about **7 ounces** of raw tomatoes daily for 8 weeks successfully lowered both systolic and diastolic blood pressure in diabetics.<sup>51</sup> Part of that effect may arise from a reduction in activity of angiotensin converting enzyme (ACE), an effect produced by common antihypertensive drugs.<sup>52</sup>

In older diabetic women, **30 mg/day** of lycopene reduced total and LDL cholesterol by **12** and **16%** respectively, while also lowering a common marker of tissue oxidation that contributes to atherosclerosis.<sup>53</sup>

Other complications of diabetes are also less severe in those with higher lycopene levels. For example, diabetics with healthy eyes have higher levels of lycopene than do those with the blindness-inducing condition called diabetic retinopathy.<sup>54</sup>

Similarly, diabetic neuropathy, a painful and debilitating nerve condition that is among the hardest of pain syndromes to treat, is substantially ameliorated in animal studies of lycopene supplementation.<sup>55,56</sup>

Finally, cognitive decline associated with diabetes can be decreased with long-term lycopene supplementation.<sup>57</sup>

Of course, diabetics are not the only people who face neurological degeneration over time. In the next section we'll see how lycopene may improve brain health for everyone.

### Lycopene and Your Brain

Oxidative stress plays a major role in the neurodegenerative diseases of aging.

Most of the carotenoid antioxidant nutrients, including lycopene, are reduced in one or more of those diseases such as Alzheimer's disease, vascular dementia, and Parkinson's disease with dementia.<sup>58</sup> They were recently also shown to be depleted in mild cognitive impairment.<sup>59</sup>

These facts make lycopene an important dietary component for maintaining brain health.

Animal models of Alzheimer's, Parkinson's and Huntington's diseases have all confirmed lycopene's preventive potential.<sup>60-62</sup> A lycopene-rich tomato powder supplement completely prevented destruction of essential dopamine-producing brain cells in a mouse model of Parkinson's disease.<sup>62</sup> Raw tomato supplements had similar but considerably less impressive effects.<sup>63</sup>

Other studies have shown that lycopene improves brain resistance to oxidant stress in Parkinson's disease models, and it successfully prevented the neurobehavioral deficits associated with the disease.<sup>64</sup>

Huntington's disease is less common but by no means less tragic; it produces uncontrolled motor movements coupled with dementia, and is inevitably fatal.<sup>65</sup> In animal models of Huntington's disease, lycopene reduced memory impairment while block-

ing the behavioral and biochemical abnormalities.<sup>66</sup> The mechanism appears to be through inhibition of inflammatory nitric acid production, in addition to protective effects on brain mitochondria.<sup>67</sup>

Alzheimer's disease is practically the perfect example of brain destruction by oxidant stress. Lycopene may prevent Alzheimer's by inhibiting formation of oxidant-producing Aβ proteins.<sup>68</sup> As a result, studies show decreased death rates of neurons, especially in the memory-processing hippocampus area of the brain.<sup>69</sup>

There's also growing evidence that lycopene can prevent the inflammatory response to an acute stroke, and can reduce the total size of the damaged brain area.<sup>70</sup> Finally, lycopene has also recently been shown to be protective against environmental neurotoxins and excessive levels of certain elements such as manganese, again through its antioxidant effects.<sup>61</sup>

### Summary

Our bodies are under continuous attack by oxidant stress, which produces inflammation and direct tissue damage. Ultimately, chronic inflammatory insult accelerates aging and other diseases that shorten life span.

Lycopene, a natural antioxidant derived from red fruits like tomatoes, has powerful antioxidant capabilities. It operates by additional mechanisms to provide health-giving benefits.

But lycopene in raw tomatoes is poorly bioavailable, and although it is more readily absorbed from processed tomato products (like tomato sauce), many people don't eat enough of these foods to obtain an adequate supply.

Studies show that lycopene supplementation holds promise for reducing the impact of aging and many other chronic conditions, through the interactions of its many target effects. Lycopene has been shown to reduce the risk of certain cancers, cardiovascular disease, and metabolic disorders such as diabetes, and neurodegenerative decline. ●

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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# Super Potent Multi-Nutrient Formula

## Compare CENTRUM® to TWO-PER-DAY:

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

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

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

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

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

**Two-Per-Day** provides the three most effective forms of **selenium** which are sodium selenite, L-selenomethionine, and se-methyl L-selenocysteine.



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

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

A bottle containing 120 tablets of **Two-Per-Day Tablets** retails for \$20. If a member buys four bottles, the price is reduced to **\$13.50** per bottle. A bottle containing 120 capsules of **Two-Per-Day Capsules** retails for \$22. If a member buys four bottles, the price is reduced to **\$15** per bottle.

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



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

Contains soybeans. Due to the source of the kelp, this product may contain fish and shellfish.

To order Life Extension Two-Per-Day Tablets or Two-Per-Day Capsules, 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.

# ARE YOU GETTING THE FULL BENEFITS OF **LYCOPENE ABSORPTION?**

Humans are incapable of producing valuable *carotenoids* such as lycopene, so we must rely on outside sources.<sup>1</sup>

By capturing *reactive oxygen species*, lycopene prevents damage to DNA that scientists now recognize as one cause of aging. Numerous studies confirm that lycopene also improves cellular communication throughout the body.<sup>1,2</sup> While lycopene is found in foods such as tomatoes, watermelon, pink guava, and papaya, the fiber content of these foods interferes with lycopene absorption, resulting in *poor bioavailability*.<sup>3,4</sup>

To obtain sufficient lycopene to achieve clinical benefits, supplementation from extracts is often required. Fortunately, **Life Extension®** members gain access to **lycopene** in supplements like **Super Booster**, **Natural Prostate**, **Two-Per-Day** and **Life Extension Mix™**. Those who want additional potencies can take one capsule a day of **Mega Lycopene**.

## PROSTATE HEALTH

Lycopene *supports* the body's protection of prostate tissue and helps *maintain* prostate health.<sup>5-11</sup>

This remarkable carotenoid has also been shown to support the expression of important *endocrine* growth factors in healthy individuals<sup>2</sup> and the maintenance of vital DNA structure.<sup>2</sup>

In addition, lycopene enables healthy communication at intercellular connection points called "gap junctions,"<sup>11,2</sup> which enables cells to know when to stop growing—providing a protective influence on *cellular reproduction*.

In one clinical trial using lycopene supplements in dosages of **15 mg daily**, *significant improvement in prostate proliferation markers* was observed.<sup>12</sup> Other studies supported this finding.<sup>13,14</sup>

## CELL INTEGRITY

Lycopene promotes cellular antioxidant defense.<sup>5-22</sup>

Extensive research reveals that lycopene effectively helps to maintain healthy LDL oxidation and helps protect arterial walls from free radical activity.<sup>5-22</sup> These are vital elements of normal *cardiovascular* health.

Scientific evidence also suggests that lycopene promotes normal *glucose* tolerance<sup>23</sup> and supports healthy *neurological* function.<sup>24-29</sup>

**Mega Lycopene** is produced using an *advanced tomato extraction process* preserves the integrity of the lycopene molecule and provides a greater concentration of stable lycopene at a low cost! Take one softgel daily with food, or as recommended by a healthcare practitioner.

The suggested **once daily** dosage of **one softgel** of **Mega Lycopene** provides **15 mg** of lycopene from natural tomato (*Lycopersicon esculentum*) extract (fruit).

A bottle of 90 softgels of **Mega Lycopene** retails for \$35. If a member buys four bottles, the price is reduced to **\$22.50** per bottle.



Item # 00455

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

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# the SUZANNE show

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Suzanne discusses key topics with  
Life Extension doctors including:

- What's really making you sick
- Natural approaches to a better night's sleep
- How to get more of the cellular energy you need
- What to do about those killer carbs
- How to quench the fires of inflammation



# High Potency **FAT-SOLUBLE** NUTRIENTS in ONE Softgel

Most people don't get enough oil-based nutrients like **vitamin K**, **lycopene**, and **gamma tocopherol**. This problem is solved with a one-per-day softgel called Life Extension® **Super Booster**. It provides high potencies of **fat-soluble** compounds lacking in dry powder formulas, along with other nutrients.

Just one **SUPER BOOSTER** provides:

- **VITAMIN K2** Scientific studies show **vitamin K2** provides superior benefits for the bones, arteries, and other tissues. The **MK-4** form of vitamin K2 is the most rapidly absorbed and is now routinely used in Japan to maintain healthy bone density. **MK-4**, however, only remains active in the blood for a few hours. The **MK-7** form of K2, on the other hand, remains bioavailable to the human body over a sustained **24-hour period**. Super Booster provides a potent dose of **MK-7 and MK-4** to keep calcium in the bone and out of the arteries.

- **LUTEIN** The carotenoid lutein helps maintain healthy cell division, supports the macula of the eye, and protects the endothelial lining of the arteries.

- **GINKGO** Hundreds of studies substantiate the multifaceted effects of *Ginkgo biloba* in promoting healthy circulatory and neurological function.



Item # 01680

- **GAMMA TOCOPHEROL** If one consumes only alpha tocopherol, the critically important **gamma** tocopherol is displaced from cells within the body. While *alpha tocopherol* vitamin E inhibits *lipid peroxidation*, the *gamma tocopherol* form quenches the dangerous *peroxynitrite* free radical. It is especially important for those who take vitamin E supplements to make sure they consume at least 200 mg a day of gamma tocopherol.

- **LYCOPENE** Evidence suggests that people who ingest the carotenoid lycopene enjoy healthier prostate function. Lycopene also helps guard against LDL oxidation.

- **CHLOROPHYLLIN** Scientific studies indicate that chlorophyllin may protect against environmentally induced damage to DNA.

## JUST ONE SOFTGEL OF SUPER BOOSTER SUPPLIES:

Vitamin K2 (as menaquinone-7)	200 mcg	Chlorophyllin	100 mg
Vitamin K2 (as menaquinone-4)	1000 mcg	Sesame lignans	20 mg
Vitamin K1 (as phytonadione)	1000 mcg	Lycopene	10 mg
Gamma Tocopherol	230 mg	Lutein	2 mg
Mixed tocopherols	359 mg	Vitamin B12	300 mcg
Ginkgo extract	120 mg	Vitamin C	95 mg

A bottle of 60 **Super Booster** softgels retails for \$42. If a member buys four bottles, the price is reduced to just **\$28.50** per bottle.

The **Super Booster** saves consumers **huge dollars** by combining a wide variety of costly nutrients into one daily softgel. If you add up the price of the individual ingredients contained in the **Super Booster**, you would spend **two to three times more** for this potency if taken separately.

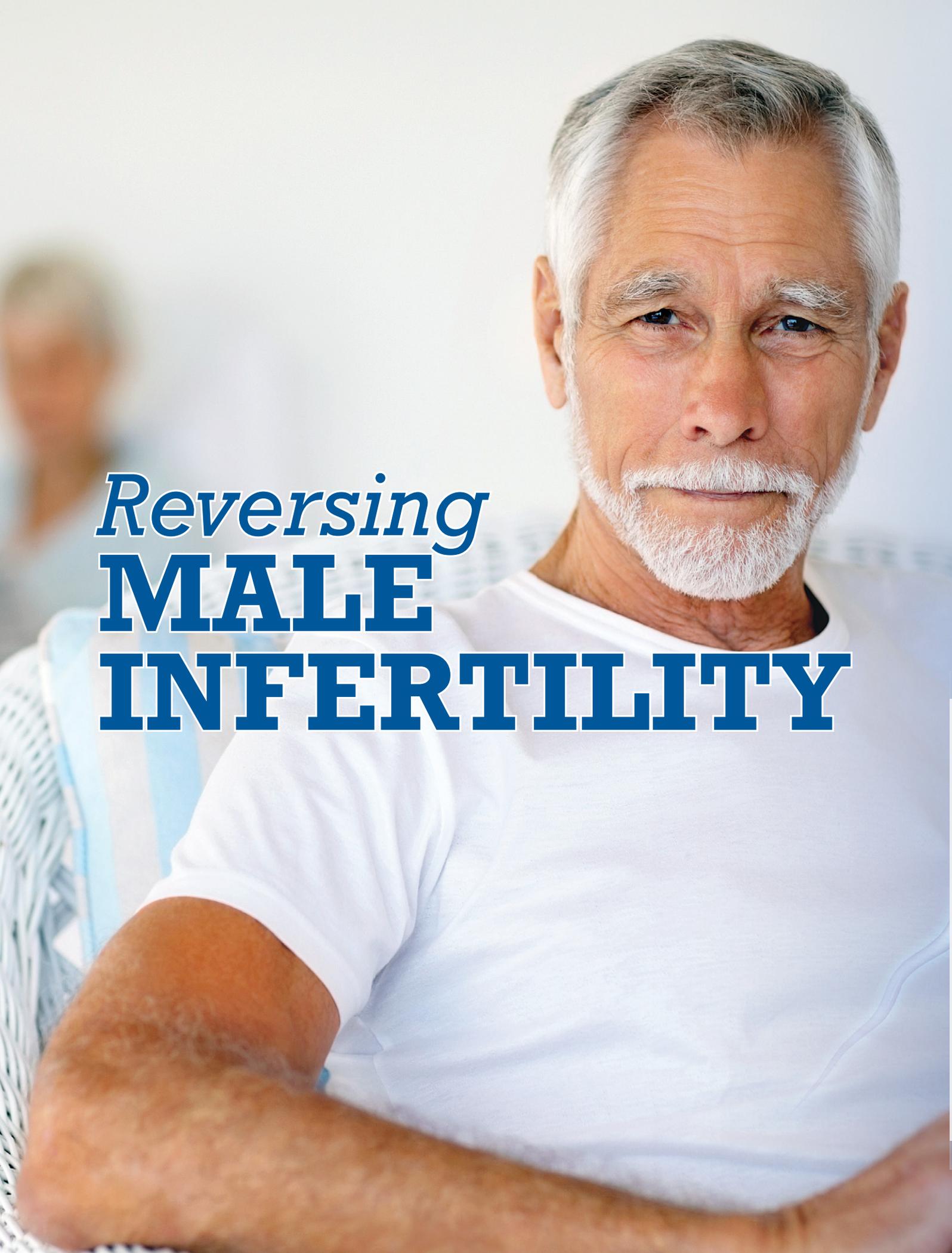
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Contains soybeans.

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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*Reversing*  
**MALE**  
**INFERTILITY**



BY SILAS HOFFMAN

Forty years ago, couples didn't have to wonder if they were going to be able to conceive a baby. Fertility problems were almost unheard of. Now, the problem is so widespread that if fertility rates continue to drop at the current rate, the world's fertility will fall below the global replacement rate in the next 10 to 40 years.<sup>1</sup>

Although much of the blame is placed on women, the reality is that more than half of all cases of infertility may be related to **male factors**.<sup>2</sup> A 2012 study revealed that just *1 in 4 men* have optimal semen quality.<sup>3</sup> By some estimates, sperm counts around the world may have dropped by **50%** since the 1930s.<sup>4</sup>

No one knows for sure what's causing this disturbing decline, but it's clear that some of the factors that plague our modern world in general are at least partly to blame. For example, toxic chemicals that act as endocrine disruptors, such as insecticides, flame retardants, and phthalates from plastics, affect hormones responsible for sperm production, and excessive oxidant stress can damage DNA and impair sperm function.<sup>5-9</sup> Obesity is an additional factor.<sup>10</sup>

Despite the alarming increase in male infertility, the good news is that in many cases it's completely **reversible**. Numerous studies demonstrate that certain nutrients can directly impact sperm quality—and can ultimately result in improved pregnancy rates.<sup>11-14</sup> >>

## Declining Sperm Quality

In order to understand what causes male factor infertility, we have to understand the concept of sperm quality. Sperm quality is determined by four factors:

- The total number of sperm cells produced (sperm count),
- Their physical attributes (morphology),
- Their ability to move properly once ejaculated (motility), and
- The integrity of their DNA.

Under ideal circumstances, a healthy young American male can produce **300 to 500 million** sperm cells per ejaculation—but typically only one will fertilize an egg.<sup>15</sup> In the 1940s, most young men routinely produced an average of **100 million** sperm cells **per mL** of semen—well above the roughly **40 million/mL** required to assure normal fertility.<sup>16</sup> But recent studies of modern young men show a disturbing trend: Sperm concentrations are declining with many men having less than **40 million/mL**, the minimum required for reliable, timely impregnation.<sup>16,17</sup>

Other aspects of sperm quality are at risk as well. Sperm motility (the ability to move forward to reach the egg), the volume of semen per ejaculate, and the number of normal sperm cells carrying undamaged DNA have diminished over the same time period.<sup>18-20</sup> Even the volume of the specific testicular cells that produce testosterone has been in decline.<sup>21</sup>

To resolve all of these male factors using a medical approach would require multiple medications—many of them unproven and with substantial side effects.<sup>22-24</sup> Because of that, women are still the ones who undergo fertility treatments in order to allow men with poor sperm quality to father children—even if they’re not the underlying cause of the problem.<sup>25,26</sup>

However, none of that may be necessary. Many studies have demonstrated that certain nutrients can have a direct impact on sperm quality itself, potentially avoiding the need for expensive drugs or invasive procedures.<sup>11-14</sup>

## Carnitine Boosts Fertility Rates

Sperm cells have to travel farther than any other single human cell—and they need a tremendous amount of energy in order to make the trek. That’s what makes carnitine such a vital nutrient for men with poor sperm quality.

Carnitine is a vital transporter molecule whose function is to carry high-energy fat compounds into mitochondria, where they are “burned” to release their energy. This helps give sperm the boost they need if they are going to have a chance at fertilizing an egg. This is important because weakly-swimming sperm (*asthenozoospermia*) is one of the most important reasons for male factor infertility.<sup>27</sup>

Supplementation with L-carnitine and/or acetyl-L-carnitine has proven benefits on sperm quality.<sup>28-34</sup> Doses of **2,000-3,000 mg/day** of L-carnitine, and **500-1,000 mg/day** of acetyl-L-carnitine have produced

### Effects of Antioxidants on Sperm Quality

Nutrient	Daily Dose	Improvements in Sperm Quality	Improvement in Pregnancy Rate
Vitamin C <sup>74-77</sup>	1,000 mg	Count, motility, structure	100% (in combination with vitamin E) <sup>13</sup>
Vitamin E <sup>12,78-80</sup>	300 mg to 1000 mg*	Enhances sperm binding to egg, reduced sperm DNA damage	21%
Coenzyme Q10 (CoQ10) <sup>81-87</sup>	60 mg	Count, motility	16%
Selenium <sup>11,88-92</sup>	200 to 225 mcg	Motility (all measures of sperm quality in combination with NAC) <sup>91</sup>	10.8%(in combination with vitamin E) <sup>88</sup>
N-acetylcysteine (NAC) <sup>91</sup>	600 mg	Motility, structure, count, and volume	Not yet studied
Zinc <sup>93-98</sup>	66 mg	Count	Not yet studied

\*Equivalent to **447-1,490 IU** d-alpha-tocopherol (natural form) or **666-2,220 IU** dl-alpha-tocopherol (synthetic form).<sup>99</sup>

increases of sperm count, motility, straight-swimming ability, as well as total normal sperm forms in clinical studies.<sup>30-34</sup> When men were treated with carnitine, their partners experienced pregnancy ranging from **22** to **31%**. The pregnancy rates in the control groups (not receiving carnitine) ranged from **1.7** to **3.8%**.<sup>27,35</sup>

### Antioxidants Protect Developing Sperm

Because sperm cells need so much energy, they generate oxidation—which can ultimately damage cell membranes, DNA molecules, and the very mitochondria that power the cell in the first place.

There's a well-known association between oxidant stress, the antioxidant capacities of sperm cells and semen, and final sperm quality.<sup>36,37</sup> In general, men with elevated markers of oxidation show impaired sperm count and more abnormally-formed cells.<sup>9</sup> Conversely, good cellular antioxidant defenses have higher sperm counts and better motility. In other words, men with better sperm quality have higher overall intakes of antioxidant nutrients than men with poor sperm quality.<sup>38</sup> That effect seems to be amplified in older men, many more of whom are choosing to start pregnancies than ever before.

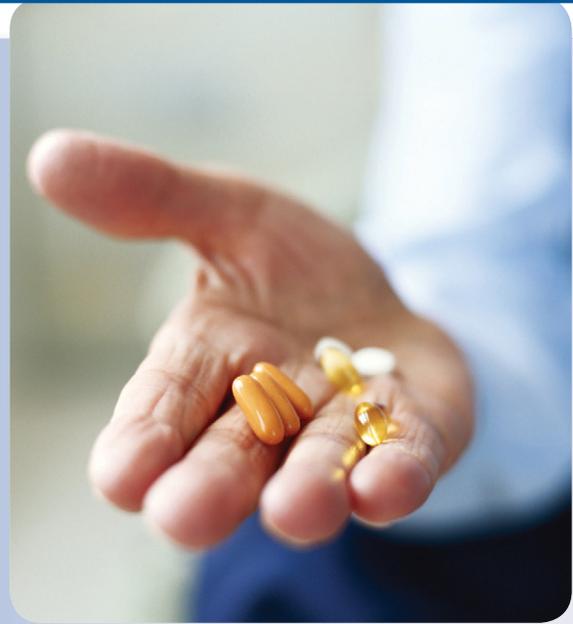
A number of antioxidants have proven abilities to boost sperm quality. These include vitamins C and E, coenzyme Q10 (CoQ10), selenium, n-acetylcysteine (NAC), and zinc.

Let's take a look at zinc and NAC, antioxidants with especially potent abilities to enhance sperm quality.

### Zinc

Zinc deficiency is associated with poor sperm quality resulting from increased oxidant stress in seminal plasma, the liquid portion of semen that is responsible for maintaining sperm cells in a healthy state.<sup>39,40</sup> Depletion of zinc also reduces the volume of semen produced.<sup>41</sup>

Studies in both animal models and humans demonstrate significant improvements in sperm quality following zinc supplementation, especially in cases of known infertility. Supplementation increases sperm counts, mobility, and fertilizing capacity, and decreases levels of DNA damage, structural abnormalities in sperm, and levels of antibodies to sperm that can impair sperm quality.<sup>42,43</sup> Studies show an increase of as much as **74%** in total normal sperm count in previously sub-fertile men taking **66 mg/day** of zinc, particularly when folic acid **5,000 mcg/day** is added to the supplementation.<sup>44</sup>



## Nutritional Supplements Provide Frontline Male Fertility Support

- Scientists have observed a worldwide decline in sperm quality, which is a measure of sperm count, motility, structure, and DNA integrity.
- Left unchecked, this epidemic could spell massive reductions in the human fertility rate, especially in the industrialized nations where the problem is most acute.
- Reasons for decreasing sperm quality are not fully understood, but clearly include certain major dietary and environmental factors that result from the modern age.
- No medication has yet been found that can uniformly and safely improve sperm quality.
- A large handful of nutritional supplements offers real hope for improvement in sperm quality and, more importantly, for improving fertility rates and the birth of healthy offspring.
- Antioxidant vitamins and minerals, along with natural molecules such as coenzyme Q10, N-acetylcysteine, lycopene, carnitine, omega-3 fatty acids, vitamin D, and Ashwaganda (*Withania somnifera*) all improve sperm quality with near zero side effects.

The benefits of zinc supplementation are especially prominent in smokers, whose total body oxidant levels are vastly higher than those of nonsmokers. In addition, smokers accumulate toxic levels of another metal element, cadmium, which accumulates in testicular tissue and further adds to oxidant stress.<sup>45</sup> These effects produce substantial losses of sperm quality and fertility in smokers.<sup>45</sup> Studies show that zinc supplementation reduces the impact of cadmium toxicity and boosts sperm quality in smokers.<sup>45,46</sup>

### N-Acetylcysteine (NAC)

N-acetylcysteine (NAC) is a modified amino acid with potent direct antioxidant effects; it also boosts natural cellular antioxidant systems such as glutathione. NAC was first used to reverse oxidative toxicity produced by overdoses of acetaminophen (Tylenol® and others), and found later use in reducing the viscosity (thickness) of secretions on cystic fibrosis.

Both of these characteristics of NAC make it appealing as a means of boosting overall sperm and semen quality.

As an antioxidant, NAC has been shown to reduce concentrations of destructive reactive oxygen spe-

cies in human semen, contributing to improvements in motility.<sup>47,48</sup> A dose of **600 mg/day** of oral NAC improved volume and motility in men with known male factor infertility.<sup>48</sup> And, like zinc, NAC's antioxidant powers make it an effective antidote for toxic chemicals that have negative effects on sperm quality: experiments in mice demonstrate that NAC supplementation can reverse the effects of arsenic, a well-known environmental toxin.<sup>49</sup>

NAC's ability to reduce viscosity in body secretions provides an additional asset. The same **600 mg/day** dose reduces semen viscosity, making it easier for sperm to move forward and reach their goal of fertilizing an egg cell.<sup>48</sup>

NAC, both alone and in combination with selenium supplements, helps to raise serum testosterone levels as well as improving parameters of sperm quality.<sup>50</sup>



### Antioxidant Nutrient Combinations Boost Sperm Quality, Especially in Older Men

More and more men are deciding to become fathers later and later in life, according to recent studies.<sup>100</sup> That trend raises important questions about the impact of the father's age on the outcome of the pregnancy and the health of the infant.

Most data suggest substantial risk factors associated with increased paternal age, factors that can influence both fertility (the likelihood of conceiving) and genetic risk for the offspring.<sup>100</sup>

For these reasons, older men must be especially careful to load the dice as much in their favor as possible, in order to maximize their chances of successful conception and healthy fatherhood.

Two recent studies on dietary antioxidant combinations provide an excellent guide.

In the first study, researchers examined micronutrient intake in a group of men 22 to 80 years old.<sup>101</sup> They determined the amount of sperm DNA damage as a marker of overall sperm health.

Overall, the study showed that men with the highest intake of vitamins C and E, folate, and zinc, had roughly **16%** less sperm DNA damage than did men with lower intakes of these antioxidant nutrients. The benefit was enhanced among the older members of

the study group (ages 44-80); in fact, men in that group with the highest overall intake of those micronutrients showed levels of sperm damage similar to those of the younger men.<sup>101</sup>

The second study involved a group of men who were known to be infertile by reason of low sperm counts with abnormally formed sperm.<sup>102</sup> Researchers provided the subjects with an oral antioxidant supplement containing l-carnitine, vitamin C, coenzyme Q10, vitamin E, zinc, folate, selenium, and vitamin B12 over a 3-month time period.

There was a significant improvement in DNA integrity and the proportion of sperm cells with highly degraded DNA, at all time points evaluated.<sup>102</sup> At the same time, there were significant increases in other measures of sperm quality such as concentration, motility, vitality, and structure.

These studies offer new hope for the growing number of men who seek to start (or grow) their families later in life. A broad-spectrum plan of supplementation with multiple antioxidant nutrients seems likely to boost a man's overall chances of successfully initiating a healthy pregnancy.

## Lycopene Helps Reverse Male Infertility

Lycopene is a natural, plant-derived carotenoid pigment that provides the red color of tomatoes, watermelon, and other fruits. It has powerful antioxidant characteristics and is involved in a variety of other cellular activities as well.

Low intake of lycopene in the diet is associated with poor semen quality and male factor infertility.<sup>38,51</sup> However, supplementing with lycopene has been shown to reverse some or all of that damage.

In one study, men with impaired fertility were given **2 mg** of lycopene twice daily. The results were impressive: **66%** had improved sperm concentration, **53%** had improved motility, and **46%** showed improved numbers of normal sperm forms.<sup>52</sup> Twenty-three percent of men in this study achieved fatherhood.

Another way lycopene enhances sperm quality is by reducing the impact of advanced glycation endproducts (AGEs), the dangerous sugar/protein structures that form over a lifetime of exposure to blood glucose. In one study, supplementing with **20 mg** of lycopene daily resulted in decreased presence of sRAGE, a marker of AGE activity in semen.<sup>53</sup>

## Omega-3 Fatty Acids Improve Sperm Count

In addition to their need to travel long distances, sperm cells must have very specific membrane characteristics in order to be able to bind to the membrane of an egg and produce a living embryo. Much of those special characteristics come from the sperm's high levels of omega-3 fatty acids.<sup>54,55</sup>

Men with defects in sperm quality or sperm counts typically have low levels of omega-3s, or low ratios of omega-3 to omega-6 fats, in their semen and sperm cell composition.<sup>54,56,57</sup> On the other hand, higher omega-3 levels and ratios are directly correlated with improved sperm motility, concentration, and structure.<sup>54</sup>

Lab and animal studies reveal that sperm cells supplemented with omega-3s have improved motility and fewer markers of oxidative stress compared with control cells.<sup>58,59</sup> Omega-3 fats, (specifically EPA and DHA), have been found to restore fertility and impaired sperm production in animal studies.<sup>60,61</sup> Human studies show that supplementing with **1,840 mg** a day of a combination of DHA and EPA improved total sperm count and concentration.<sup>62</sup> An omega-3-rich Mediterranean-style diet boosts the chances of successful pregnancy in previously-infertile couples by **40%**.<sup>61</sup>

## Vitamin D Deficiency Contributes to Infertility

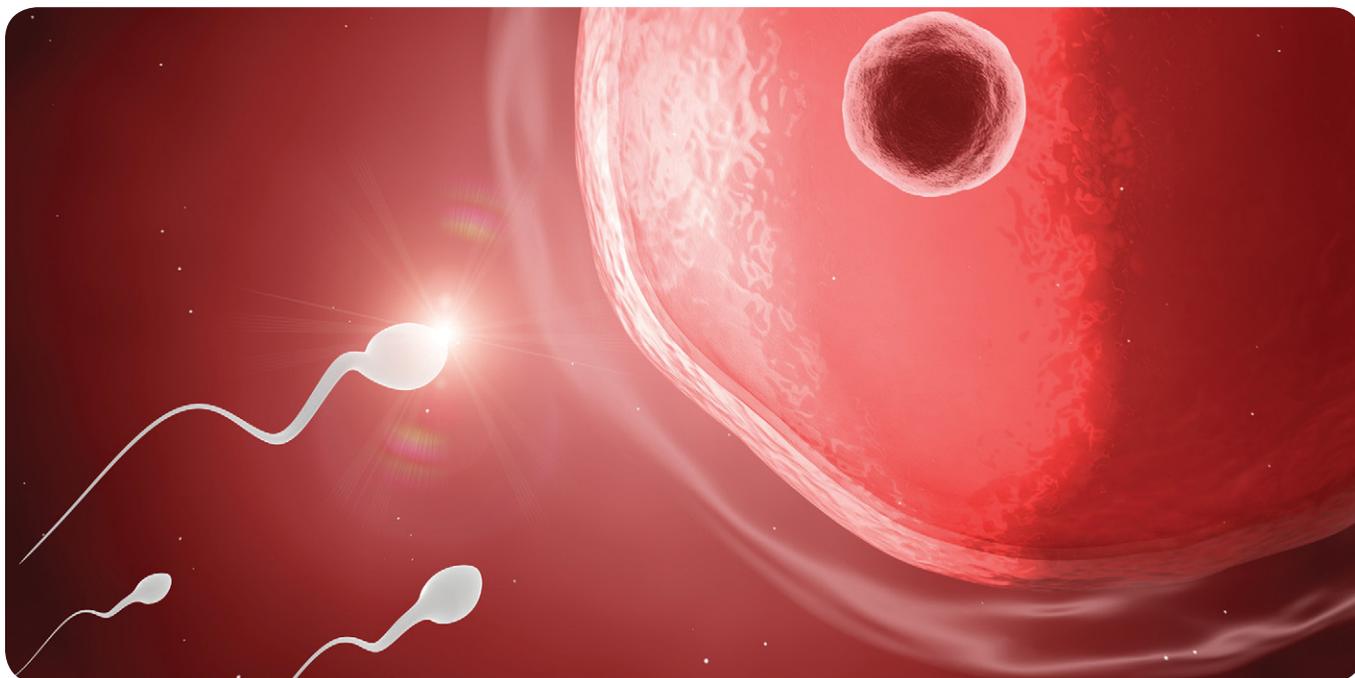
One study examining spermatozoa quality found **44%** of the men studied had **25-hydroxyvitamin D** blood levels below 20 ng/mL. Optimal levels are over 50 ng/mL, so these men were seriously deficient in **vitamin D**, as most people are who don't supplement with more than **5,000 IU/day**. This could have a huge impact on the rising rate of male factor infertility. Serum vitamin D levels are positively correlated with sperm motility and normal structure.<sup>63</sup>

It was not until 2006 that a receptor molecule for vitamin D was detected on the surface of sperm cells.<sup>64,65</sup> Since that time, the receptor has been found in all tissues of the male reproductive tract.<sup>66</sup>

Vitamin D deficiency reduces the ability of male lab animals to deposit sperm in female reproductive tracts by **45%**, and the rate of successful pregnancies in females who received sperm from D-deficient males is decreased by **73%**.<sup>67</sup>

However, when vitamin D is added to live human sperm cells in the lab, it produces a sharp increase in sperm motility, along with rapid development of the "acrosome reaction" that allows the sperm cell to attach to the egg.<sup>66</sup>





Although no human studies have been reported on the impact of vitamin D supplementation on male factor infertility, men facing fertility problems should still consider supplementing with this nutrient—especially given the powerful effects of vitamin D in lab and animal studies, coupled with the high rates of vitamin D insufficiency and deficiency among Americans. At the very least, consider supplementing to bring plasma vitamin D levels into the range considered sufficient by conventional medicine (greater than **32 ng/mL**) range. This can often be accomplished by daily supplementation with vitamin D3 at **1,000 to 2,000 IU/day**, though up to **5,000 IU** is safe and may be needed in certain cases.<sup>68-70</sup>

### Ashwagandha Improves Sperm Quality

Stress is a major factor in the modern infertility epidemic. It increases oxidative damage, inflammation, and other harmful conditions that are known to reduce sperm quality.<sup>71</sup>

One way to combat stress-related infertility is with a plant used in Ayurvedic and other traditional medical systems for reducing stress. Studies have shown that Ashwagandha (*Withania somnifera*) can treat stress-related infertility.<sup>71</sup>

When 60 infertile men took Ashwagandha root powder daily for 3 months, they experienced decreased measures of stress, increased levels of antioxidants, and improved overall sperm quality.<sup>71</sup> By the end of the 3 months, the partners of **14%** of those men had conceived pregnancies.

Ashwagandha extract works in several ways to improve sperm quality: It inhibits lipid peroxidation, reduces markers of glycation, improves seminal levels of antioxidant enzymes and vitamins A, C, and E, and increases serum testosterone and other reproductively critical hormones.<sup>72,73</sup>

### Summary

The global decline in sperm quality, especially prominent in industrialized nations, has the potential to threaten the survival of humankind. Many reasons for this decline have been proposed, the strongest of which have to do with environmental and dietary factors unique to the modern age.

Since male factor infertility accounts for more than half of all infertility cases, it is incumbent upon men to optimize their sperm quality. Sadly, no medication or conventional medical treatment seems capable of reversing this dangerous trend.

Nutritional supplements often hold out hope where pharmaceutical medicine fails, and the area of sperm quality is no exception. Antioxidant and cell energizing nutrients can improve sperm motility, sperm count, and the number of normal sperm cells, while reducing damage to sperm DNA—ultimately improving the chances of successful pregnancy. ●

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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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, prevent 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)



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

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

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

**Just one serving of SUPER OMEGA-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract provide:**

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

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

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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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Life Extension® introduced **resveratrol** in 2003 to favorably alter **genes** that respond to **calorie restriction**. Since then, *additional* compounds have been discovered that enable cellular **DNA** to exhibit more youthful **gene expression**.

Just two capsules a day of **CR Mimetic Longevity Formula** supply:

**Trans-Resveratrol** is the form of resveratrol used in scientific studies documenting remarkable longevity-enhancing effects. You would have to drink many bottles of red wine to obtain a fraction of the **trans-resveratrol** (250 mg) found in **CR Mimetic Longevity Formula**.

**Quercetin** inhibits the actions of enzymes in the liver from rapidly breaking down resveratrol in the bloodstream, thus enabling **resveratrol** to remain active **longer** in the body.

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Item # 01429

**Trans-Pterostilbene** directly activates genes “**downstream**” from the sites of resveratrol’s action, providing a powerful **complementary stimulus** to resveratrol’s ability to induce *youthful* gene expression. You would have to eat **135** cups of **blueberries** to obtain the amount of **trans-pterostilbene** contained in the **CR Mimetic Longevity Formula**.

**Grape seed extract** provides **proanthocyanidins** that have multiple health benefits and work together with resveratrol to trigger favorable **gene expression** changes.

**Theaflavins** from **black tea** suppress the pro-inflammatory transcription factor NF-kB<sup>1</sup> and stimulate the longevity factor Forkhead box 1 (FOXO1) in invertebrate and mammalian cells.<sup>2-3</sup> You would have to drink **12** six-ounce cups of black tea each day to obtain the amount of theaflavins contained in **CR Mimetic Longevity Formula**.

Two capsules a day of **CR Mimetic Longevity Formula** provide:

<b>Trans-Resveratrol</b>	<b>250 mg</b>	<b>Trans-Pterostilbene</b>	<b>3 mg</b>
<b>Black Tea Theaflavins (decaf.)</b>	<b>300 mg</b>	<b>Fisetin</b>	<b>48 mg</b>
<b>Grape Seed Polyphenols</b>	<b>50 mg</b>	<b>Quercetin</b>	<b>150 mg</b>

A bottle containing 60 vegetarian capsules of **CR Mimetic Longevity Formula** retails for \$39.

If a member buys four bottles, the price is reduced to just **\$27** per bottle.

The cost of taking the highly purified plant extracts individually would be significantly higher compared to the optimal doses found in **CR Mimetic Longevity Formula**.

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To order **CR Mimetic Longevity Formula**  
call **1-800-544-4440** or visit **www.LifeExtension.com**

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# The PSA Controversy

## PART I

BY STEPHEN B. STRUM, MD, FACP

**Life Extension**<sup>®</sup> is on the front lines of assisting people afflicted with **metastatic cancer** finding therapies overlooked by their oncologist. In too many cases, advanced-stage cancers fail to respond to treatment, or a tumor that goes into remission 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 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.

Instead of recommending that medical professionals upgrade their protocols to deliver state-of-the-art technology, a federal government supported group called the **United States Preventive Services Task Force** suggests that aging men not undergo PSA screening—at all!

In this first article, prostate oncologist **Stephen B. Strum, MD, FACP**, discusses the critical role **PSA screening** plays in preventing prostate cancer death, and why certain arms of the medical establishment have failed to recognize this simple truth.



## Introduction

The issue of **PSA screening** is a current hot bed of discussion.

A recent decision by the **United States Preventive Services Task Force** (USPSTF) concluded that PSA should not be used as a diagnostic screening tool for any man, regardless of age, race or family history. This has resulted in a hailstorm of critical responses.<sup>1-4</sup>

The USPSTF bases their decision on the adverse effects of invasive prostate cancer (PC) treatment(s) in comparison to the indolent behavior most often seen as part of the natural history of untreated PC.<sup>2</sup> Where does this leave the patient and the physician? Is prostate specific antigen (PSA) blood testing of critical importance in the detection of PC (prostate cancer) in healthy men? Has such testing resulted in detecting PC at an earlier stage where cure is more likely? Has the PSA increased cancer-specific survival and thus lessened PC associated mortality? **“What should I do?”** is the question asked by many confused men and their loved ones fearing the threat of the most common malignancy of males.

I would like to share with you my experience in 30 years of medical work that span the years of the pre-PSA era (prior to 1987 when the FDA approved the PSA test), and up to the present time. My focus on PC started in 1983, working with Fernand Labrie, MD, of Laval University in Quebec, Canada. I was one of a handful of American co-investigators with Dr. Labrie evaluating the anti-androgen drug Flutamide in combination with an agent (d-try-p-6, now called



a treatment that would extend their lives. Many of these men outlived the very physicians who had predicted their deaths, and the obvious “teaching lesson” was that “MD” does not stand for Medical Deity, but rather should stand for Medical Detective. Within a short time, my general oncology practice was totally focused on PC—an unheard of occurrence back in the 1980s. In the decades that followed, I became an intimate part in the lives of many thousands of men with PC along with their circle of family and friends. Indeed, this has been very fulfilling for me as a physician (Medical Detective) and a member of society.

So, is the PSA worth testing? In a nutshell, **the PSA is the most valuable biologic marker (biomarker) involved with this common malignancy.** The general issue of PSA testing, however, merits a full and frank discussion, and not an abridged or curbstome response. And please be aware that the concepts presented in the following discussion are of great consequence to anyone involved in a life-changing decision.

What I will share with you will be presented in two parts. The first of which follows below and is a medical-philosophical discussion relating to PSA screening. Part II is the story of a 43-year-old man who through empowerment learned how PSA testing is rationally performed and how it has led to a superior patient outcome.

### Foundational Principles Crucial to Understanding the PSA Test

Optimal decision making, or more properly stated, the formulation of strategy that optimizes outcome, is dependent upon employing—in real-time—what I

*Prostate cancer (PC) affects one out of every six men.<sup>44</sup> In the United States alone, the average annual death rate from PC is around 30,000 in any given year.<sup>44</sup> This makes prostate cancer the second leading cause of cancer death in men, with lung cancer still ranked number one.<sup>44</sup>*

Triptorelin) that blocks pituitary stimulation of testosterone production by the testicles. Men with advanced PC were studied, and a large number of these men had been told they had six months or less to live. At that time, approximately **60%** of these PC patients presented with advanced or bulky disease at the time of diagnosis. Survival in these patients was greatly enhanced by blocking endogenous testosterone production.

In response to this reversal of disease in these advanced stage cases, my medical oncology practice in Culver City, California, was overrun with men who traveled from the United States and abroad seeking

term “foundational principles.” For a man with PC, the three most important of these principles in a successful strategy are:

1. Selection of treatment(s) appropriate to the patient.
2. Preparation of the patient for the intended treatment(s).
3. Choice of highly talented and dedicated physicians (I refer to these as artists) throughout the course of the illness.<sup>5</sup>

The three-step approach above works. And, it is entirely appropriate to the entire time course of PC—from PSA testing for screening purposes, to using the PSA to diagnose men who are at a high risk for PC, and for PSA testing to monitor the success or failure of any therapy against PC. In fact, using this three-step approach, or modus operandi (method of operation), will enhance the outcomes of virtually all health-related challenges in our lives.

Many of you remember Paul Harvey and his famous radio broadcasts that began with a “story” and ended with, “And now you know—the rest of the story.” So many of the issues that humankind has always faced, and will continue to face, are characterized by this need for more data in order to make an “informed” decision—to get as close as possible as we can to the truth.

Why I believe this is to be a fact of life is founded in the nature of “information” and also in the human element, i.e., our human frailties. When it comes to understanding a situation, most of us want the con-

## PSA: Pestilence or Promise?

- The most common cancer striking men has a blood marker known as prostate-specific antigen that can enable very early detection, thereby enabling curative therapies to be employed before metastasis strikes.
- Most urologists and oncologists are not properly **interpreting** PSA results, nor are they efficiently implementing further diagnostic and treatment protocols.
- Ejaculation and certain activities such as bike riding within 48-hours of testing may falsely elevate PSA values.
- Monitoring PSA values and rate of change over time and incorporating various PSA derivative tests such as the free PSA percentage and more recently the PCA-3 test can add important information to PSA testing particularly if the PSA is rising quickly or is elevated above **4 ng/mL**.
- A federally-funded task force has concluded that PSA should not be used as a diagnostic screening tool for any man, regardless of age, race, or family history.





denser version, the abridged account, the “fast-food” explanation, or the nitty-gritty. Likely, this is because we lead hurried lives and there is too much to learn.

This information overload leads us to a form of attention-deficit dysfunction. We are bees flitting from one flower to the next and sometimes one doctor to the next. We want the truth and we want it fast. Understandably, we lack the depth of knowledge about a particular subject because there is so much to know in today’s world of thousands of journals and millions of published articles. Too often we add insult to injury when decisions about what is right or wrong, good or bad, are made without reference to the context of the problem.

My favorite example is, “They must have weapons of mass destruction, let’s invade.” The same failure to understand status unfortunately is a common occurrence in our medical care. Medical doctors fall short in evaluating our internal biology and our external environment. We just don’t get the importance of “the rest of the story” i.e., status. I recognized in the general practice of medical oncology that there was no humanly possible way for any oncologist to consistently be up-to-date on 30 or more different kinds of

cancers. I chose PC to focus on in my attempt to get as close to the truth as possible. Maybe it is no accident that my initials “SBS” is also an abbreviation for Status Begets Strategy.

Intimately coupled with an inappropriate evaluation of status are four additional issues:

All of life is a double-edged sword and virtually everything that can be of help to us can also work against us. Thus there is no black or white; there is no absolute right or wrong. All of biology strives towards balance and communication, and thrives when these are achieved. The Yin and Yang of Asian philosophy, and the Socratic plea to “know thyself” speaks to the crucial nature of these concepts.

There are many levels of understanding, just as there are many levels of human skill or artistry. What one person understands and puts to good use may well become a weapon in the hands of a less informed person. This is the nature of the bell-shaped curve as it relates to society, and physicians are not exempt. The medical student graduating first in his class is called “doctor,” but so is the student graduating last in his class.

That we often confuse the message with the messenger. In medical care, the messenger is the person(s) that turns the message into action. If truly valuable messages exist, should society at large toss them out because they can be misused, or do we create and enforce guidelines for their proper use?

*“We like to believe we have the truth, or we have access to the truth. This is a very old dream. We will never have the truth... The best we ever have is a story.”*  
—Barry Lopez

Coupled with the above, we often throw out the “baby with the bathwater.” PC SPES is a combination of 8 different herbs that, although primarily used in cases of non-hormonal PC, proved effective against a range of prostate cancer cell types.<sup>6</sup> PC SPES was an excellent treatment for many men with advanced PC, but when drugs not indicated on the label were identified in the product, it was banned and a major treatment for androgen-independent PC was lost.<sup>6</sup>

Thus, in the authentic world of medicine the gears of science and translational medicine have core components of philosophy, morality, and judgment. Some of us, cognizant as well as sensitive that we intimately affect the welfare of others, equate this evolved approach in human endeavors as “artistry.” In medicine, I call such individuals “real physicians,” those whose true joy is in seeing a human life benefited by their interventions.

In public talks and writings I have stated the role of the healthcare practitioner should be a focus on patient outcome, and not on physician income. And if the physician focuses on the former as the “prime directive,” almost always the latter will naturally follow. All of the above, sadly, but truly, relate to the issue of PSA screening. No fast-food medical article is going to clarify this issue. Our due diligence coupled with

an earnest caring to understand all issues is required. As Martin Luther King said, “*Our lives begin to end the day that we become silent about things that matter.*” Perhaps King should also have added “and striving to be as close to the truth as possible.”

### What Is PSA Screening?

Screening, in general, sorts out apparently well persons who likely have a disease from those who probably do not.<sup>7</sup> **A screening test is not intended to be diagnostic.**<sup>7</sup> Persons with positive or suspicious findings are usually referred to other physicians for diagnosis and necessary treatment. For example, Dr. Jones, a general practitioner, in his yearly examination of patient John Doe includes a PSA test as a screening tool for PC. The result is **3.6 ng/mL** and John is told his prostate is fine; or the PSA is **4.1 ng/mL** and John is referred to a urologist for further testing. The PSA result provides information as to the status of prostate health. The PSA normal range is given as **0-4.0 ng/mL**. A level above **4.0 ng/mL** is theoretically a trigger for further investigation(s). But we have learned, hopefully, that a truly healthy prostate, one not affected by benign prostate enlargement (BPH), prostatitis, or prostate cancer is associated with a PSA result of **1.0 ng/mL** or less.<sup>8</sup> Therefore, the first-time result of PSA testing can inform us to the presence of a perfectly healthy prostate versus an unhealthy one. Since the very first PSA test a man has is his baseline, we do not have any comparison value

to assess the rate of increase in PSA. But importantly, this initial PSA reading provides a foundation as to the status of the prostate gland for a particular patient.

### Caveats to Proper PSA Testing

There are caveats to optimize the value of PSA testing. Understand, however, that these are my personal convictions that resulted from my first-hand experiences in using PSA in thousands of men and over a time period of three decades. Medicine is notorious for controversy and issues that relate to PSA are no exception.

First, men tested for PSA are virtually never informed that ejaculation due to sexual intercourse or masturbation has been associated with a greater amount of PSA in the blood, because the ejaculate

*No fast-food medical article is going to clarify the PSA screening issue. Our due diligence, coupled with an earnest caring to understand all issues is required.*



contains PSA (an enzyme to liquefy the semen, and facilitate fertilization of the woman's ova). In fact, one of the early uses of PSA was in instances of alleged rape to prove that insemination had occurred by virtue of PSA being present in the vaginal fluid of women who were raped.<sup>9</sup> The numerous articles on the effect of ejaculation on PSA, and free PSA are not in uniform agreement;<sup>10-31</sup> and in light of this unresolved controversy I recommend that men going for PSA testing should be informed that no ejaculation should occur for 48 hours prior to PSA testing. In 30 years of work in this field, I have never had a single patient acknowledge that this has been discussed with him. In addition, any kind of manipulation of the prostate—be it a DRE (digital rectal exam) or bicycle riding should be avoided as well. Given the lack of consensus findings on all of these issues, there is no downside to following these recommendations.

*“If you put two doctors in a burning room they will not be able to agree on whether to stay or to leave.” For every medical publication that says “yea” another says “nay.” So side-step the controversy in any way you can.*

The PSA level in the blood, like many lab tests, has a rhythm based on the time of the day i.e., a diurnal rhythm. Therefore, obtain your PSA blood tests in either the morning or the afternoon, but not both. And, the laboratory testing method (assay) and even the lab itself doing the PSA can lead to variability in results, so make sure the same methodology is used e.g. Hybritech, Tosoh, DPC, etc, and return to the same lab facility for all your PSA testing. Following these recommendations will decrease aberrant PSA test results. You may hear your local physician say that all of the above is controversial, but you have nothing to lose and possibly something to gain by avoiding these possibly confounding issues.

An additional, commonly forgotten issue is that there are various PSA derivative tests which can add important information; these are the Free PSA percentage, and more recently the PCA-3 test. With the former, the total PSA and the free PSA absolute values are given, and the free PSA percentage is calculated. Note that the total PSA obtained from this derivative test is NOT comparable to the total PSA obtained with the stand-alone PSA test that is most commonly performed. Being mindful of the above enhances the value of PSA testing, and it is part of “the rest of the story.” The PCA-3 test is performed on urine rather than blood



and detects genetic material that is excreted into the urethra via the epithelial cells that line the prostatic ducts.<sup>32</sup> Prostate cancer cells tend to over-produce this genetic material far more than normal cells do.<sup>32</sup> The **PCA3 urine test** has to be done in a urologist's or other doctor's office as it requires a digital rectal exam (three strokes per lobe) just prior to collection of the urine.

### The Importance of PSA Values Over Time

Many healthcare practitioners consider benign prostatic hypertrophy (BPH) a normal part of human aging. I do not. For sure it is not nearly as much concern as PC, but it is still a form of pathology as is prostatitis (inflammation of the prostate).

In fact, inflammation and aging share so many characteristics that the term “inflammaging” has been coined.<sup>33-37</sup> I consider inflammation, aging and cancer the three horsemen of the apocalypse of health. I started my own PSA testing in 1985, two years prior to FDA approval of this lab test. My initial result was **0.75 ng/mL**. Now, over 25 years later my PSA is in the range of **0.90 ng/mL**.

There is a peer-review article that indicates that a truly healthy prostate is associated with a change in PSA per year of no more than **0.1 ng/mL**.<sup>38</sup> In other words, this rate of PSA change per year, or PSA velocity (PSAV), is dramatically slower by comparison with the threshold value of **0.75 ng/mL/yr** which is used as a red flag for possible PC.

My PSA has increased by **0.15 ng/mL/yr** over 25 years which equates to a PSAV of **0.006 ng/mL/yr**. When I obtain multiple PSA tests on an individual patient, I am happy to find a PSAV of **0.1 ng/mL/yr**

and even up to **0.3 ng/mL/yr**. At a PSAV of **0.3 ng/mL/yr** or higher my medical concern is heightened that I may be dealing with a man with PC. Do not confuse the PSA velocity with the absolute or total PSA value. Note also, there are published papers on age-adjusted as well as race-adjusted PSA testing. However, I have not found these latter two PSA derivative tests helpful. Instead, I rely heavily on baseline PSA and change in PSA over time and I remember to include all of the constraints detailed so far to optimize valid testing.<sup>8</sup>

Remember that PSA screening involves using the PSA blood test to facilitate a diagnosis of PC in apparently healthy men. Note that “healthy men” excludes various categories such as men with a family history of PC or a family history of breast cancer or colorectal cancer, since all three diseases are associated with a higher risk of PC compared to men that do not have this history. Incorrectly, in my opinion, the USPSTF recommended excluding PSA testing in men with a family history of PC. Moreover, the USPSTF did not mention the co-relation between PC, breast cancer and colorectal cancer and the need for PSA testing in any man with such a family history. In this regard, the USPSTF confused the message not with the messenger, but with the context of the problem that many men face who have genetic factors that place them at greater risk for PC. This includes a family history of PC, as well as breast cancer and also colorectal cancer.<sup>39-43</sup>

It is also important to mention that the USPSTF did not include a physician focused on PC. No urologist, medical oncologist or radiation oncologist was part of the panel. This situation is tantamount to having generals whom have never been at the front lines of a war decide on battle strategy. Working with hundreds, if not thousands of patients with PC gives a physician an entirely different perspective on how to use the PSA test. It is said that “context is everything;” at the very least, understanding context clearly plays a huge part in rational decision making. Experience makes context more understandable and appreciated.

All of the issues discussed above should clarify the currently muddied waters about PSA testing. The PSA is an extremely valuable test that remains the deciding factor on whether a man with PC is stable, getting better or declining. The PSA has the same implications in the context of assessing the health of prostate tissue: is it healthy, getting healthier or is it sick? The pivotal issue in the use of PSA is whether physicians can be sufficiently educated to maximize the insights afforded by PSA testing or will their understanding of perhaps the most valuable biomarker affecting the most common malignancy of men remain stuck in the mediocrity of today’s system of assembly line medicine.

In the second part of this report which begins on page 74, I will share detailed information on a particular patient who represents many thousands of men who have a father or brother with PC and who decide to undergo PSA testing despite the USPSTF’s recommendations. I will point out how PSA testing can be used to not only make an early diagnosis of PC, but lead to a proper evaluation of various aspects of this man’s health (his status), then correct many unrecognized findings of his ill health, while ensuring stability of the PC process without implementing any invasive procedure.



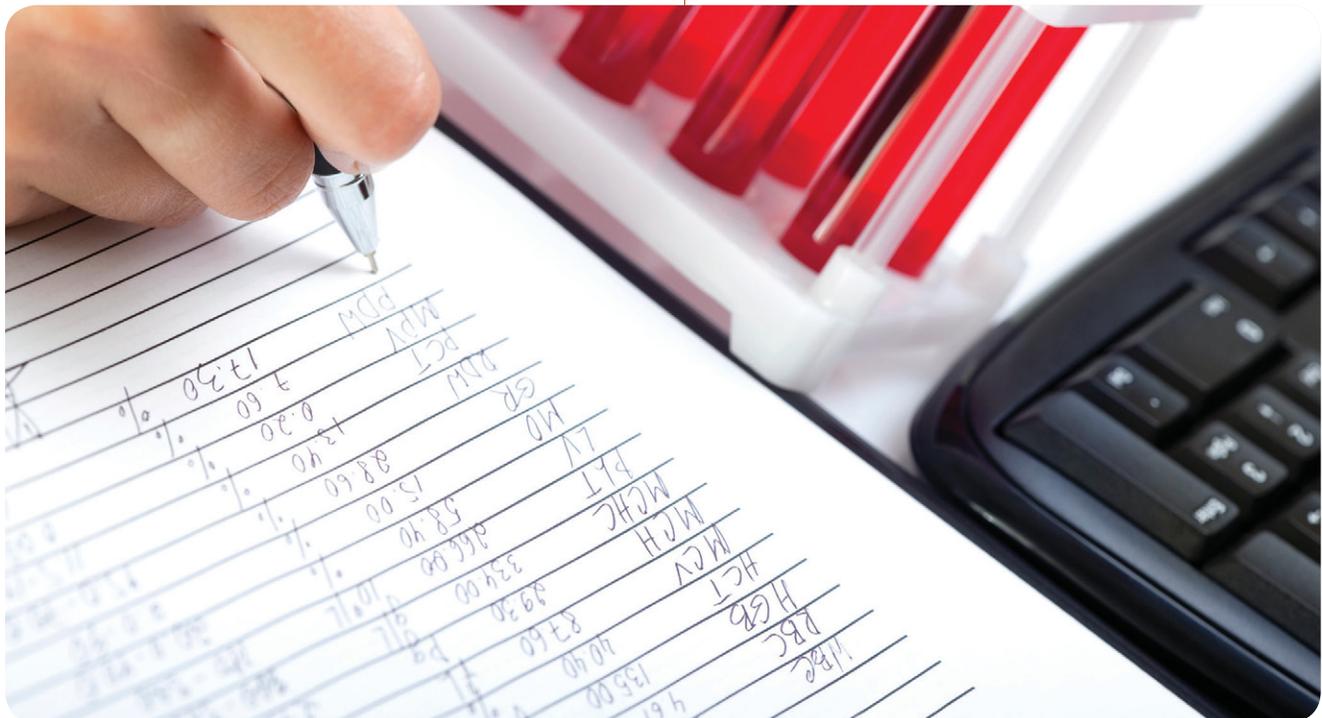
## Summary

Prostate-Specific Antigen (PSA) is a blood marker that can enable very early detection of the most common cancer striking men, thereby enabling curative therapies to be employed before metastasis strikes. By allowing for this early detection, PSA testing has literally spared tens of thousands of men agonizing deaths from metastatic prostate cancer. However, a federally funded group, the United States Preventive Services Task Force (USPSTF) has concluded that PSA should not be used as a diagnostic screening tool for any man, regardless of age, race or family history and that it should not be performed at all! As a practicing prostate oncologist for nearly 30 years, the problem is not the PSA test itself, the problem is that most urologists and oncologists are not properly interpreting PSA results, nor are they efficiently implementing further diagnostic and treatment protocols. Factors such as the change in PSA values over time and the rate of change in PSA per year (known as PSA velocity or PSAV) must be considered as well as PSA derivative testing like Free PSA Percentage and the recent PCA3 test in order to garner a complete picture. ●

**Members who have questions about their PSA results or proper PSA testing can call a Life Extension® Health Advisor at 1-866-864-3027.**

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NOW WITH VITAMIN K2

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**Bone Restore** combines critical **bone boosting** nutrients into one superior formula.

**Bone Restore** includes highly **absorbable** forms of **calcium** and **boron**, along with **vitamin D3**, **magnesium**, **zinc**, **manganese**, and **silicon**. **Bone Restore** is now available with or without **vitamin K2** (MK-7).

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

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<b>Highly Absorbable Calcium</b> (as DimaCal <sup>®</sup> dicalcium malate, TRAACS <sup>®</sup> calcium glycinate chelate, calcium fructoborate)	<b>1,200 mg</b>
<b>Vitamin D3</b>	<b>1,000 IU</b>
<b>Vitamin K2</b> (as menaquinone-7)	<b>200 mcg</b>
<b>Magnesium</b> (as magnesium citrate)	<b>100 mg</b>
<b>Boron</b> (calcium fructoborate as patented FruiteX B <sup>®</sup> OsteoBoron <sup>®</sup> )	<b>3 mg</b>
<b>Zinc</b> (as TRAACS <sup>®</sup> zinc glycinate chelate)	<b>2 mg</b>
<b>Manganese</b>	<b>1 mg</b>
<b>Silicon</b>	<b>5 mg</b>

FruiteX B<sup>®</sup> and OsteoBoron<sup>®</sup> are registered trademarks of VDF Futureceuticals, Inc. U.S. patent #5,962,049.

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

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# THE NEXT GENERATION OF PROSTATE PROTECTION:

## ULTRA NATURAL PROSTATE WITH APRÈSFLEX™ AND STANDARDIZED LIGNANS

**Ultra Natural Prostate with AprèsFlex™ and Standardized Lignans softgels** combines cutting-edge ingredients that have been scientifically substantiated to protect the prostate gland and maintain its healthy function.\*

The latest addition to this formula is **AprèsFlex™**, an extract of *Boswellia serrata* that has been shown in studies to have **two times the bioavailability** of the leading boswellia extract. AprèsFlex™ inhibits the dangerous enzyme *5-lipoxygenase*. Boron is included because of studies showing it may help slow elevation of prostate-specific antigen (PSA).

The formula provides **saw palmetto extract** and **Graminex® Flower Pollen Extract™** to interfere with DHT activity and help regulate inflammatory reactions in the prostate.\* **Lycopene** is a carotenoid that is included in the formula to help maintain healthy DNA gene function in prostate cells.

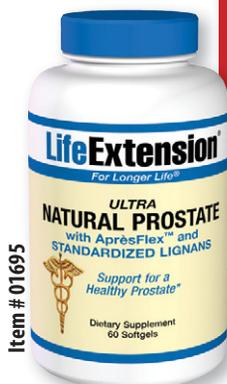
In order to boost its anti-estrogen capabilities, **Ultra Natural Prostate with AprèsFlex™ and Standardized Lignans Formula** incorporates **HMRlignan™**, derived from Norway spruce, **flax lignans**, and **nettle root extract**.

Since normal aging can lead to potentially unsafe levels of prostaglandins in the prostate, **Pygeum africanum** extract is included to help suppress prostaglandins and thereby promote prostate comfort.\* **Beta-sitosterol** has been added because it is the most biologically active component of *pygeum* and enhances its protective effects.

The retail price for one bottle of **Ultra Natural Prostate Formula with AprèsFlex™ and Standardized Lignans** is \$38. If a member buys four bottles, the price is reduced to **\$26.25** per bottle. If a member buys 12 bottles, the price is reduced to **\$24** per bottle.

Contains soybeans and corn.

To order Ultra Natural Prostate Formula with AprèsFlex™, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



The daily dose of two softgels of **Ultra Natural Prostate Formula with AprèsFlex™ and Standardized Lignans Formula** provides:

<b>USPlus® Saw Palmetto (CO<sub>2</sub> DeepExtract™)</b>	<b>320 mg</b>
(std to 85%-95% total fatty acids and sterols)	
<b>Graminex® Flower Pollen Extract™</b>	<b>252 mg</b>
<b>AprèsFlex™ (<i>Boswellia serrata</i>) extract</b>	<b>70 mg</b>
<b>Pumpkin seed oil (<i>Cucurbita pepo</i>) extract</b>	<b>200 mg</b>
(standardized to 85% total fatty acids)	
<b>Stinging nettle root extract (<i>Urtica dioica</i>)</b>	<b>240 mg</b>
<b>Pygeum extract</b>	<b>100 mg</b>
<b>Lycopene</b>	<b>10 mg</b>
<b>Phytosterol complex</b>	<b>678 mg</b>
(standardized to 26.6% free beta-sitosterol)	
<b>Proprietary blend of HMRlignan™ Norway Spruce and ActiFlax™ Flax Lignan extracts</b>	<b>20.15 mg</b>
<b>Boron</b>	<b>3 mg</b>

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# The **PSA** *Controversy*

## PART II

### “A Real-World Case History”

BY STEPHEN B. STRUM, MD, FACP

Part II of this article on **PSA Screening** shares detailed information on a young man who represents many thousands of men who have a father or brother with prostate cancer and who have undergone PSA screening despite the **United States Preventive Services Task Force’s** recommendations not to use the PSA for screening—even in men with high-risk factors. Here Dr. Strum will point out how PSA screening and subsequent PSA testing can:

1. Facilitate an early diagnosis of prostate cancer,
2. Lead to a more informed assessment of a man’s health status,
3. Use this information to correct many subclinical findings of ill health,
4. Ensure stability of the prostate cancer process, and
5. Allow, when indicated, a detour from the conventional response to a diagnosis of prostate cancer which typically mandates an invasive treatment, be it radical prostatectomy, radiation therapy in any form, cryosurgery or high intensity focused ultrasound.

This real-world case history shows how PSA screening can be used as a tool to diagnose and treat prostate cancer without resorting to the inappropriate use of side effect laden therapies. > >

This article provides highly technical details of a successful treatment involving a man named **Andy** who contracted prostate cancer at a young age. What you'll learn is the kind of personal attention the *International Strategic Cancer Alliance* provides to its clients. If you have prostate cancer and find the material in this article overly technical, you may consider enrolling as a client of the **International Strategic Cancer Alliance** by calling the phone number that appears at the end of this article.

Andy's first PSA was obtained in 1993 when he was 43 years of age. He was told that the result was normal because it was less than **4.0 ng/mL**. Three years later it was slightly higher at **1.4 ng/mL**, and approximately four more years later it had risen to **1.8 ng/mL**. Andy's PSAs prior to his diagnosis of PC show a serial rise—not a saw-tooth or up and down pattern that is characteristic of inflammation of the prostate (prostatitis). Andy had been using the same laboratory for his PSA testing and almost all of his blood sampling was done in the morning. Andy was not aware of the effect of ejaculation on raising PSA test results<sup>1-4</sup> since my involvement in his care did not occur until September 2007.

In **Table 1** the PSA values of the son (Andy) of one of my patients (Dick) with established Prostate Cancer are shown.

Date	PSA	Date	PSA
3/8/93	1.2	12/8/08	5.1
7/19/96	1.4	1/6/09	4.3
4/14/00	1.8	2/17/09	3.9
7/30/01	2.0	6/12/09	4.0
3/10/04	2.4	10/26/09	3.6
9/19/05	2.5	4/9/10	3.8
10/17/06	2.9	7/8/10	3.7
9/5/07	2.92	10/5/10	3.6
9/27/07	Diagnosed with prostate cancer	2/8/11	3.8

**TABLE 1:** PSA Values for Andy. Recommendations for PSA testing were begun immediately after the patient's father was diagnosed with PC. In patients with a family history of PC, breast cancer or colorectal cancer, initial testing should begin at age 35 to establish a baseline.

An additional aspect of PSA testing that is important to communicate in the context of Andy's clinical course is how the PSA value relates to tumor (cancer) volume. All cells, including cancer cells make

hundreds of products that include proteins, enzymes, etc. These are functional products and have relevance to the survivability, growth, and spread of cancer cells.

PSA functions to break down the extra-cellular tissue to allow spread of disease. Therefore, PSA is a detrimental enzyme when elevated because it can facilitate prostate cancer cell invasion.<sup>5</sup> Each prostate cancer cell produces and secretes into the blood a certain amount of the biomarker—PSA, and this amount or leak of PSA into the blood relates to the aggressiveness of the individual patient's cancer cell population.

What is seen with Andy prior to his established diagnosis of PC on 9/27/07 is a slow but inexorable rise in PSA. Every new value is greater than the previous value. These values have been entered into a software program called PC Tools ([www.lef.org/downloads/PCTII.zip](http://www.lef.org/downloads/PCTII.zip)) shown in Table 2. The change in PSA per year or PSA velocity (PSAV) is shown in the right column for each couplet of dates. The PSAVs look consistent with BPH (benign prostatic hypertrophy) since they are in the range of **0.1 ng/mL/yr**. But then, between 2005 and 2006 the PSAV increases to a threshold of moderate concern or **≥ 0.3 ng/mL/yr**.

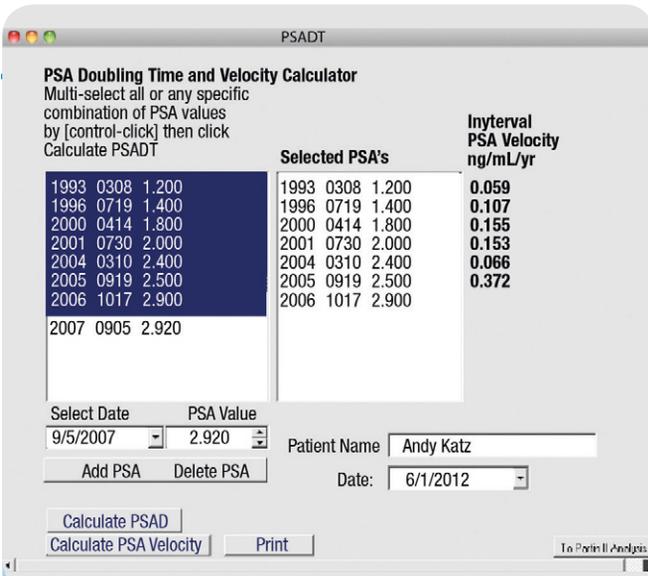
An analysis of the PSA slope or trend (see Figure 1) from 1993 to 2007 shows increasing values of the natural log PSA value and a graph that again poses concern for prostate cancer (PC). If this were BPH there should be a more gradual slope. The software program using Excel is provided to you at [www.lef.org/downloads/PCTII.zip](http://www.lef.org/downloads/PCTII.zip) at no charge.

Andy shared his concerns with his general practitioner and with the urologist that he was referred to. A DRE (digital rectal exam) indicated a T1c clinical stage (no pathological findings).<sup>6</sup> Transrectal ultrasound guided biopsies were done and seven cores from both the right and left lobes were obtained.

Prostate cancer was found to involve three of seven cores of both the right and left lobes for a core percentage of **42.8%**. The PC tissue involvement was **11mm of 161mm** or **6.9%**.<sup>7</sup> The Gleason score evaluation by Helmut Bonkhoff, MD, an expert in PC pathology, was (3,3) or six.

A clear diagnosis of prostate cancer (PC) had been established. This was a young man with approximately 40 more years of estimated life expectancy. PC was found in almost half of the core biopsies. What should he do?

Andy's status relating to many of the co-related health issues associated with PC was examined. These associations include, but are not limited, to bone loss, elevated LDL, abnormal fatty acid indicators of excessive inflammation, low vitamin D metabolite levels, and glucose intolerance. For example, because of the significant correlation of osteoporosis and osteopenia



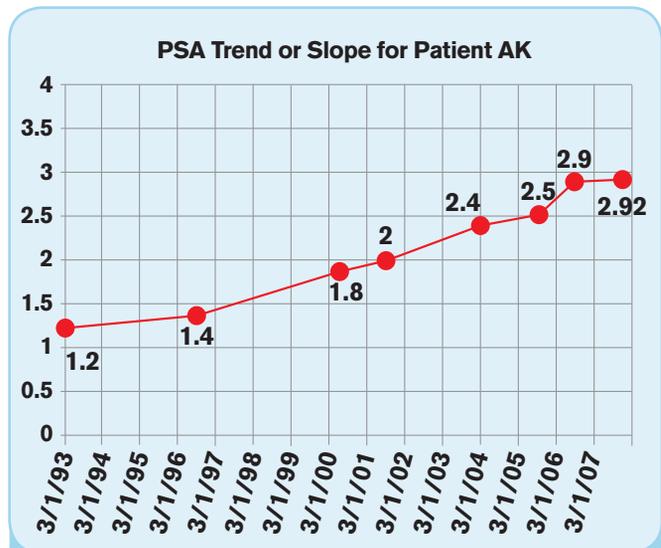
**TABLE 2: PC TOOLS SOFTWARE ANALYSIS** for Andy. This is freeware that calculates PSAV and PSA doubling time (PSADT). In the graphic, the PSAVs are most consistent with BPH, but then concern arises with the value of 0.372.

with newly diagnosed men with PC,<sup>8</sup> a quantitative computerized tomography (QCT) bone density (not to be confused with a bone scan, or with a DEXA bone density) was obtained. This revealed a bone mineral density (BMD) of **121 grams/cc** for a T score of **-2.03** involving the L1 to L3 lumbar vertebrae; this indicated significant osteopenia. The BMD at the left hip femoral neck revealed a T score of **-1.58** consistent with osteopenia of a milder degree.

Emphasizing the association of PC, and all cancers, with other health conditions, an understanding of the biology of cancer makes such associations easily understandable. Cancer cells require energy or fuel to enable proliferation, growth, invasion, and metastasis. These fuels include glucose, omega-6 fatty acids, low density lipoprotein (LDL), and glutamine.<sup>9-11</sup> Andy was advised to obtain an NMR LipoProfile via LipoScience (<http://bit.ly/veAZnq>), which unlike the standard “cholesterol panel” or “lipid panel” quantitates the various lipid particles. The results of this study showed an LDL of **122 mg/dL** (optimal **<100 mg/dL**), and a total particle LDL value of **1,115 nmol/L** (optimal **<1,000 nmol/L**) and a small particle LDL of **702 nmol/L** (optimal **<600 nmol/L**). A metabolite of vitamin D-3 named (25-OH)-D3 has been shown to be an anti-proliferative vitamin and some studies show (25-OH)-D3 supplementation has an anti-PC effect.<sup>12</sup> Andy’s 25-hydroxyvitamin D blood level was very low at **23.5 ng/mL** with a desired threshold level of at least **60 ng/mL**, and an optimal level of **80 ng/mL**.<sup>13</sup> Andy was placed on vitamin D-3 dose of **5,000 IU** per day, with advised to recheck 25-hydroxyvitamin D level after 1-2 months.

Andy’s homocysteine (Hcy) level was **4.5 µmol/L**, with optimal values being less than **7 µmol/L**.<sup>14,15</sup> Hcy is an inflammatory substance and has been shown to be elevated proportionally to the amount (volume) of prostate cancer.<sup>16,17</sup> A serum testosterone level was **509 ng/dL**, which was considered acceptable, but not at the optimal level of at least **550 ng/dL**.<sup>18</sup> The serum prolactin of **9.4 ng/mL** was not optimal and given that prolactin stimulates angiogenesis<sup>19-23</sup> and also sensitizes the androgen receptor to the effects of male hormones testosterone and dihydrotestosterone (DHT),<sup>24-26</sup> treatment with cabergoline (Dostinex®) to lower prolactin was recommended. A serum PAP (prostatic acid phosphatase) was normal at **1.5 ng/mL** indicating a lower risk for PC spreading beyond the capsule of the prostate.<sup>27-31</sup> All of the above investigations fine tune the care of any man with PC, and detects abnormalities that if uncorrected could lead to serious medical conditions that are then attributed to the treatment of PC. This is part of the Paul Harvey “and now for the rest of the story.” A few more examples of investigating the whole patient to understand his unique biology are given below. Indeed, MD should stand for medical detective.

A Comprehensive Fatty Acid (CFA) profile panel was obtained from the Mayo Medical Labs to evaluate various omega-3 and omega-6 fatty acids. Arachidonic acid (AA) and linoleic acid are two omega-6 fatty acids



**FIGURE 1: PSA SLOPE FOR ANDY.** The above is of concern since the slope is steeper than we would expect to see if only benign prostatic hyperplasia (BPH) was present. Whatever biological process this is, it does not appear to be a rapidly growing malignancy. The calculated PSA doubling time (PSADT) was 10.84 years and the natural log PSA slope was only 0.06.

Up-Regulated Gene	Agents that Down-regulate Gene Product	
	Supplements	Prescription Medications
COX-2	EGCG <sup>33,34</sup> curcumin <sup>35-37</sup> fish oil <sup>38,39</sup> rosemary compounds <sup>40-43</sup>	Celebrex <sup>®33,44</sup> Indocin <sup>44,45</sup> diclofenac <sup>45</sup>
FAS	EGCG <sup>46</sup> GLA <sup>47</sup> Vitamin D <sup>48,49</sup>	Alli <sup>®</sup> (Xenical <sup>®</sup> ) <sup>50-52</sup>
HSP-2	Quercetin <sup>53</sup> DHA <sup>54</sup>	Celebrex <sup>®54</sup> Ritonavir <sup>®55</sup> 17-AAG <sup>56</sup>
VEGF-R	methylselenol <sup>57</sup> curcumin <sup>58</sup> silibinin <sup>59</sup> indole-3-carbinol <sup>60</sup> EGCG <sup>61</sup>	Avastin <sup>®62</sup> Tetracycline <sup>63</sup> ADT <sup>64,65</sup> aminobisphosphonates <sup>66</sup>

**TABLE 3:** Applying the Patient's Tumor Biology to Individualize Treatment. Molecular profiling studies may be performed on the patient's prostate cancer biopsies or radical prostatectomy surgical specimen. These studies involve various methods to identify what gene products are used by the tumor for growth, invasion, and metastasis. This table relates the IHC findings on Andy's prostate cancer biopsy tissue. Based on the peer-reviewed literature, various supplements and/or prescription drugs can be recommended to block the vital processes of the tumor.

which are pro-inflammatory and act as growth stimulants for PC. The key omega-3 fatty acids such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) act to balance out the negative effects of the omega-6 fatty acids. The ratio of AA to EPA (AA/EPA) for Andy was optimal at **1.2**. His omega-6 to omega-3 ratio was close to optimal at **2.44**.<sup>32</sup> But we learned that Andy had already begun supplementing his diet with fish oil containing **1,400 mg** of EPA and **1,000 mg** of DHA per day prior to any baseline testing.

Further analysis of the PC tissue obtained at biopsy was obtained using the services of Dr. Helmut Bonkhoff, an international expert in PC pathology. He performed IHC (immunohistochemistry) analyses on the PC tissue to determine if Andy's PC relied on specific enzyme pathways (gene products) to enhance oncogenic signaling crucial to cancer growth and spread. Abnormal PC tissue expressions of cyclooxygenase-2 (COX-2), fatty acid synthase (FAS), heat shock protein (HSP) and vascular endothelial growth factor (VEGF) were found. Based on peer-reviewed medical publications about dietary, supplement and drug therapies to reduce (down-regulate) the effects of these gene products, recommendations were made to Andy (see Table 3).

With this more complete evaluation of Andy's status, "refined imaging" was next advised to obtain a more comprehensive sense of the PC volume and to establish Andy's baseline profile (see <http://bit.ly/LYerzy>).<sup>67</sup> An endorectal MRI and MR spectroscopy (MRS) was done at UCSF. It showed MRI abnormalities in the left apex and left base and in the central gland. MRS was abnormal in the central gland and left base. No extracapsular extension (ECE) nor semi-

nal vesicle or regional lymph node involvement were seen. A repeat *25-hydroxyvitamin D* blood test after one month of **5,000 IU** of vitamin D-3 showed a doubling to **52 ng/mL**. A further dose increase to **7,000 IU** per day was recommended.

Andy adjusted his supplements in response to the findings in Table 3 by adding EGCG at **472 mg/day**, silibinin at **85 mg/day**, ginger at **10 mg/day**, rosemary extract at **800 mcg/day** and also increased his total EPA + DHA dose to **3,600 mg/day**. He also began a natural COX-2 inhibitor product called Zyflamend<sup>®</sup> containing rosemary, turmeric, ginger, holy basil, green tea, and other agents.<sup>68-71</sup> In May of 2008 the (25-OH)-D3 level had risen to **67.9 ng/mL**. In October of 2008, Andy began Dostinex<sup>®</sup> at **2.5 mg** three times a week to lower serum prolactin. He also began a resistance exercise program to improve his bone density. In December 2008 his fasting morning prolactin level had dropped to **1.1 ng/mL** and he was told to reduce the Dostinex<sup>®</sup> dose to only twice a week. In early 2009, a repeat MRI at UCSF showed improvement with only a slight area of T-2 abnormality in the left aspect of the central gland remaining. No other pathology was apparent.

Since 2009, Andy has had dose adjustments of various supplements and medications based on periodically assessing BEPs (Biological End Points). BEPs are the test results that are objective data relating to diet, lifestyle or medication interventions. BEPs are identical to the LEDs on the dashboard of your car—they are status indicators. Andy has had additional BEPs that include a normal HbA1c of **5.6%** to assess his handling of carbohydrates and a Cystatin C of **0.62 mg/dL** which assesses renal function and inflammation.

In July 2010, an additional MRI and MRS was done at UCSF and **showed no abnormal findings**. However, a repeat QCT bone density showed the BMD to have decreased to **106.7 gm/cc** at the lumbar spine with an associated T score of **-2.6** indicating osteoporosis. Bone resorption markers (additional BEPs) that included urine testing for Dpd (deoxypyridinoline) was **2.7 nmol Dpd/mmol creatinine**, a normal result. A serum b-CTX (C-Terminal Telopeptide, b-Crosslaps) was slightly elevated at **375 pg/mL** (normal **87-345 pg/mL**). However, a repeat CTx to confirm the abnormal finding was normal at **266 pg/mL** in March 2011. A follow-up NMR LipoProfile indicated small particle LDL to be **<90 nmol/L** and total LDL particles to be **646 nmol/L**, both entirely normal.

Andy's PSA levels since his diagnosis of PC in September 2007 are shown below (Table 4). **These findings show no serial increase in PSA and coupled with normal imaging studies indicate no progression of PC, and perhaps regression.** Repeat prostate biopsies are being considered.

*The MD, or Medical Detective, investigates the biology of the patient i.e., gathers the facts, and gets as close to the truth of that patient's biologic status as possible.*

*"The facts, ma'am, just the facts."*

*—Jack Webb in Dragnet*

Andy is now 62 years of age. He was not pushed into any form of invasive treatment for his PC but instead he was given the various options that included RP (radical prostatectomy), RT (radiation therapy) using IMRT (intensity modulating radiation therapy), cryosurgery and HIFU (high intensity focused ultrasound). Andy has become an empowered patient that understands the value of obtaining baseline studies, follow-up BEPs, and determining strategy based on his personal status. The diagnosis of PC and the realization of the co-relationships with other areas of his health has resulted in major improvements in Andy's health (see Figure 2 on the next page).

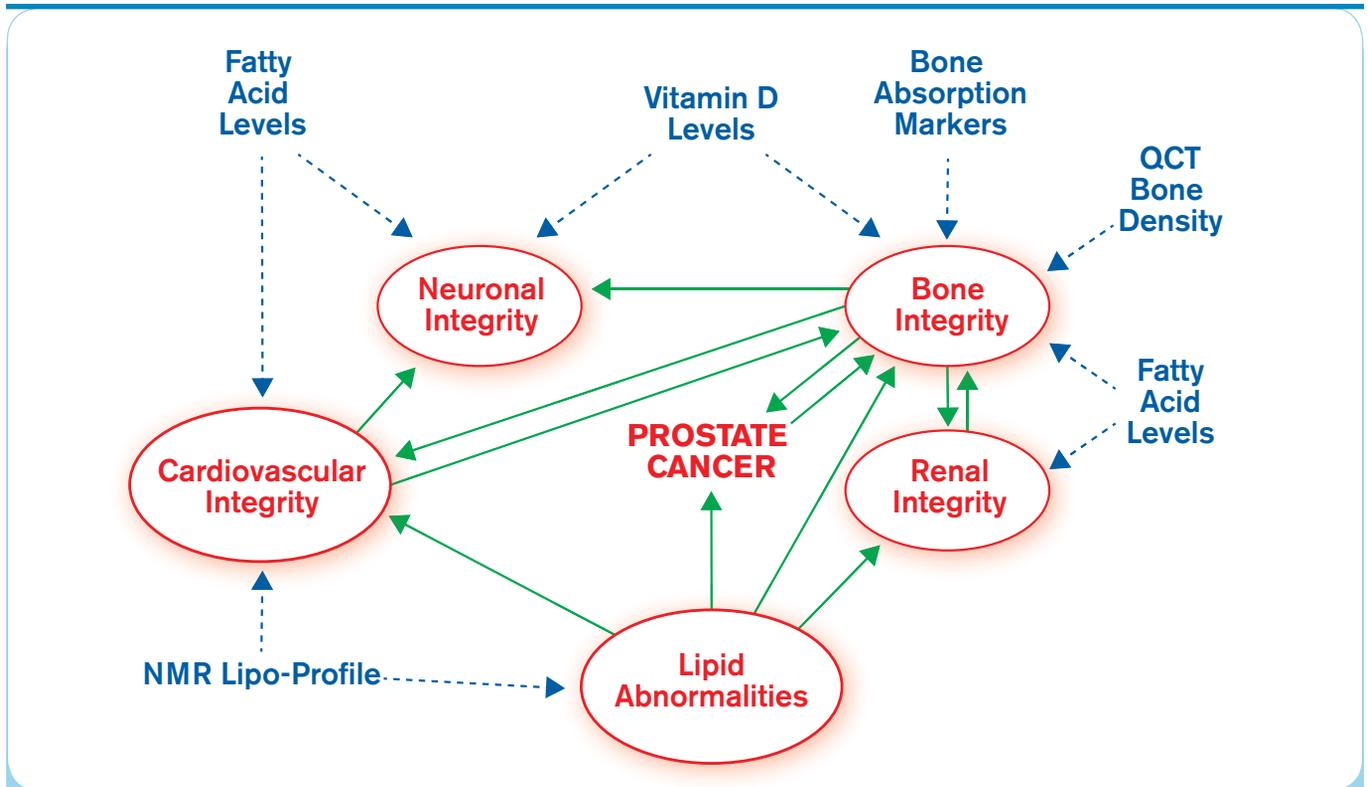
But Andy clearly understands that he still needs to focus on issues where abnormal findings have not been resolved. In this use of PSA screening for a man with a family history of PC, all of the principles discussed in the beginning sections of this article were employed. For Andy, he has not needed an invasive treatment to control his PC. The use of the PSA facilitated an early diagnosis of PC when tumor volume was low and the PC remained confined to the prostate.

Date	PSA RESULT (ng/mL)
12/6/07	2.6
12/8/08	5.1
1/6/09	4.3
2/17/09	3.9
6/12/09	4.0
10/26/09	3.6
4/9/10	3.8
7/8/10	3.7
10/5/10	3.6
2/8/11	3.8
6/13/11	3.6

**TABLE 4: ANDY'S PSA READINGS DURING PIC (PRO-ACTIVE INTEGRATIVE CARE).**

These are stable PSA readings that in the context of negative physical examination and radiologic findings almost always equate with lack of cancer progression.





**FIGURE 2: THE WHOLISTIC NATURE OF HEALTH IN RELATION TO PROSTATE CANCER.**  
 As we learn more about specific health issues we see evidence of the interconnectivity of all key processes involved in mind and body functions. This should come as no surprise since this phenomenon characterizes all living entities, from the atom to the universe.

Understanding the patient’s context, employing various medical artists to enhance an understanding of his status, educating the patient as to foundational concepts involved in optimizing health has evolved Andy’s health status compared to his state of ignorance prior to his diagnosis of PC.

PSA screening for this man has been a blessing. Not only was the message understood, but the messengers used worked together with Andy as a cohesive medical team in the spirit of collaboration and collegiality. Whether or not this can be done with the vast majority of other men who have PC are determined by the knowledge of physicians and other health care practitioners involved in the diagnosis and management of the most common malignancy affecting mankind.

### Summary

If Andy had followed the recommendations of the United States Preventative Services Task Force to not screen for PSA, he may have already undergone debilitating conventional therapies (surgery, radiation, hormone ablation, and/or chemotherapy) without the

cancer being eradicated. Unlike many other cancers, certain PC patients may exert a tremendous amount of control over their disease with the appropriate use of non-toxic treatments. ●

**This type of aggressive, yet non-toxic treatment is available to clients of the International Strategic Cancer Alliance.** This article provides highly technical details of a treatment program not only for Andy’s **prostate cancer**, but also one that corrected risk factors for **vascular disease, osteoporosis, and malignancies** that may have developed at other sites in Andy’s body. This kind of personal attention is what the **International Strategic Cancer Alliance** provides to its clients. If you have prostate cancer and want to avail yourself to the comprehensive diagnostics and treatments described in this article, you may consider enrolling as a client of the **International Strategic Cancer Alliance** by calling **1-888-868-2981**.

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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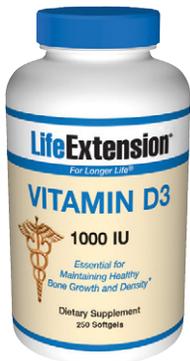
# D3

## 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 formula.

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**.

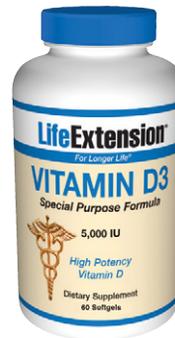


### Vitamin D3 1,000 IU 250 softgels

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, a 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

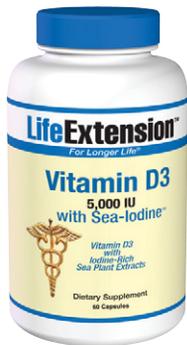


### Vitamin D3 5,000 IU 60 softgels

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

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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



Next-Generation Formula . . .

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

## Now with Dual-Action Support for Aging Joints!

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

You now have a more 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, preventing 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)

Contains corn.

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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.



Item # 01617

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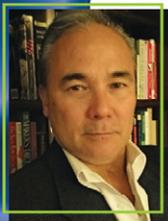


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**William Davis, MD**

Dr. Davis is a cardiologist and author of the *New York Times* Bestseller, *Wheat Belly: Lose the Wheat, Lose the Weight and Find Your Path Back to Health*, the book that introduced the dangers of modern high-yield wheat, altered by genetics research in the 1970s, to the public.



**Abraham Morgentaler, MD, FACS**

Dr. Morgentaler, the Director of Men's Health Boston, is an Associate Clinical Professor of Urology at Harvard Medical School, Beth Israel Deaconess Medical Center. Dr. Morgentaler and his clinical work with testosterone were featured in *The New Yorker*, and his comments have been published in journals such as *Newsweek* and *US News and World Report*.



**Daniel Amen, MD**

Dr. Amen is a psychiatrist, brain imaging and brain enhancement expert and four time *New York Times* bestselling author. He is the medical director of Amen Clinics, Inc. in Newport Beach and Fairfield, California, Bellevue, Washington, and Reston, Virginia, which have the world's largest database of brain SPECT studies.



**Michael A. Schmidt, PhD**

Dr. Schmidt did his Ph.D. research in molecular medicine within the Life Sciences Division at NASA Ames Research Center. He is a member of the Society for Neuroscience and the Metabolomics Society, and is the author of *Brain-Building Nutrition* and of *Beyond Antibiotics: Strategies for Living in a World of Emerging Infections and Antibiotic-Resistant Bacteria* (2009).

**TOPICS TO INCLUDE:**

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## SUPER FOODS

BY WILLIAM GAMONSKI

# YOGURT: A Spoonful of Powerful Nutritional Value

While yogurt is widely known for its healthy probiotics, it also boasts an impressive nutritional profile that makes it a frontrunner for the ultimate super food. Yogurt's health-promoting properties ward off a variety of health conditions, from gastrointestinal disorders to obesity to gum disease.

### Yogurt's History

The origin of yogurt remains uncertain, but it was documented as a favorite food of the conqueror Genghis Khan and his army in the 13th century. While yogurt has been a dietary mainstay across the Middle East, Asia, Russia, and Bulgaria for thousands of years, its health benefits only became apparent during the 20th century, due to the research performed by Dr. Elie Metchnikoff on lactic acid bacteria. Yogurt is becoming increasingly popular around the world, particularly in the United States, as well as Turkey, India, and Greece, where it's being used for culinary purposes.<sup>1</sup>



# SUPER FOODS

## Supporting Gastrointestinal Health

Yogurt is produced by fermenting milk with bacterial starter cultures *Lactobacillus bulgaricus* and *Streptococcus thermophilus*. Other live cultures such as *Lactobacillus casei* and *Lactobacillus acidophilus* are often added during the process.<sup>1</sup> These beneficial bacteria, known as probiotics, might improve digestion and prevent common gastrointestinal disorders.

**Lactose intolerance** refers to the inability to digest the sugar lactose in dairy products due to a deficiency in the enzyme lactase. Yogurt shows promise as an alternative to milk for individuals suffering from this condition, according to research reported in the *New England Journal of Medicine*.<sup>2</sup> Scientists found that lactose intolerant subjects consuming **18 grams** of lactose from yogurt digested and absorbed the lactose more efficiently than those who received the same amount of lactose from milk. This improved toleration resulted in less diarrhea and other gastrointestinal symptoms in the yogurt group.

Scientists believe that probiotics in yogurt boost the release of beta-galactosidase, an enzyme that enhances lactose digestion.<sup>3</sup>

It is estimated that one out of every four people experience antibiotic-associated diarrhea.<sup>4</sup> Scientists at Indiana University School of Medicine investigated whether the healthy bacteria in yogurt would help prevent the condition. A group of 202 hospitalized patients receiving oral or intravenous antibiotics were randomly selected for **8 ounces** of yogurt, or no yogurt, for eight days. The frequency of diarrhea was assessed during that time



period. The results showed a **24%** reduction in the incidence of diarrhea in the yogurt group, compared with a **12%** decrease in the control group.<sup>5</sup>

## Anti-Obesity Effects

Numerous studies have demonstrated the obesity fighting potential of yogurt. In animal research, scientists found that mice supplemented with yogurt powder while on a moderate-fat diet had significantly lower weight gain than control mice. This was attributed to increased lipid levels in the feces of the supplemented group, suggesting that yogurt works by reducing fat absorption in the small intestine.<sup>6</sup>

These favorable effects extend to humans as well. Individuals with the highest intake of dairy foods, such as yogurt, lowered their risk of weight gain by **67%** over a 10-year period compared to those with the lowest intakes, according to research published in the *Journal of the American*

## Selecting and Storing Yogurt<sup>1</sup>

Look for “active cultures” or “living yogurt cultures” on the label. This indicates the presence of gut friendly bacteria.

Avoid yogurt with flavorings and sweeteners.

Opt for the plain version instead of fruit-filled yogurt as the latter usually contains added sugar.

Store in the refrigerator after purchase. Yogurt stays fresh until one week after expiration date if unopened.

*Medical Association*.<sup>7</sup> Furthermore, researchers at Harvard School of Public Health studied the relationship between specific foods and long-term weight gain in more than 120,000 men and women.<sup>8</sup> After analyzing data from the 20 year follow-up, researchers concluded that yogurt was the food most associated with keeping weight off, even more so than fruits, vegetables, and whole grains.

To determine whether yogurt consumption can enhance weight loss in humans, researchers at the University of Tennessee randomly assigned 34 healthy obese participants **18 ounces** of fat-free yogurt or one serving of dairy daily for 12 weeks.<sup>9</sup> Both groups adhered to a similar calorie-reduced diet. At the end of the study, the yogurt group experienced an average weight



## Combating Heart Disease

Other research has shown that yogurt offers powerful cardiovascular support. In a study involving more than 1,000 women aged 70 and older, those with the highest yogurt intake not only had higher HDL cholesterol levels, but also significantly lower carotid artery thickness, a measurement of atherosclerosis, than those with the lowest intake.<sup>15</sup>

A study published in the *European Journal of Clinical Nutrition* further confirmed the HDL raising effects of yogurt in human volunteers. After consuming **10.5 ounces** of full-fat yogurt daily for 21 weeks, participants experienced an increase of nearly **12 mg/dL** in HDL cholesterol levels without any change in LDL levels. This in turn favorably altered their LDL/HDL cholesterol ratio by over **23%**.<sup>16</sup>

## Cancer Defense

Emerging evidence reveals that the addition of yogurt to your diet can protect against the development of several types of cancer, including those of the colon, bladder, and breast. In a study published in the *International Journal of Cancer*, a **35%** colon cancer reduction risk was found in those consuming the highest amount of yogurt compared to those with the lowest amount in more than 45,000 men and women over a 12-year period.<sup>12</sup>

Swedish scientists uncovered a strong association between yogurt intake and bladder cancer risk among 80,000 men and women. After 9-years of follow-up, findings showed a **38%** lower risk of the disease in those who regularly consumed yogurt versus those who ate little or none.<sup>13</sup>

In another study, researchers evaluated the intake of fermented dairy products in 133 breast cancer patients and 289 controls. They discovered that yogurt had a protective effect against breast cancer, as the highest intake was associated with a **37%** reduction risk.<sup>14</sup>

loss of **14** pounds, compared to **11** pounds in the control group. Additionally, those who consumed yogurt retained **31%** more muscle mass and lost **81%** more abdominal fat, which was reflected in a reduction of over **1.5** inches from the waist. By comparison, the control group lost **0.23** inches. This improvement is noteworthy since visceral fat accumulation has been associated with increased risk for cardiovascular disease and type II diabetes.<sup>10</sup>

Existing data indicates that calcium is the main component in yogurt responsible for its anti-obesity benefits. Although calcium may operate through multiple mechanisms, one mode of action relates to its ability to suppress the release of the hormone calcitriol, thereby halting fat storage and promoting fat break down.<sup>11</sup>



### Nutritional Value of Yogurt, One Cup<sup>1</sup>

Nutrients	Amount	DV(%)
Iodine	87.20 mcg	58.1%
Calcium	448.30 mg	44.8%
Phosphorus	352.80 mg	35.2%
Vitamin B2	0.52 mg	30.5%
Protein	12.80 g	25.7%
Vitamin B12	1.37 mcg	22.8%
Potassium	573.30 mg	16.4%
Zinc	2.18 mg	14.5%

# SUPER FOODS



## Fight Gum Disease

The chronic growth of bacteria in the mouth leads to inflammation and damages the gums and bones that support the teeth. This condition, known as periodontal disease or gum disease, has been associated with stroke and heart disease.<sup>17</sup> Japanese researchers found that a daily intake of at least **2 ounces** of yogurt among men and women was linked with a decreased risk of developing deep probing depth by **60%** and clinical attachment loss by **50%**, both periodontal disease parameters.<sup>18</sup>

## Summary

Incorporating yogurt into your diet offers healthy probiotics and other nutrients that may help protect against gastrointestinal disorders, cancer, cardiovascular disease, obesity, and gum disease. Please remember that yogurt is not a dietary supplement, and should be used to replace constituents of your diet that may be less healthy such as ice cream. If one intentionally added yogurt without removing another food, then the excess calories might counteract the beneficial effects of the yogurt. ●

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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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.B., 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.

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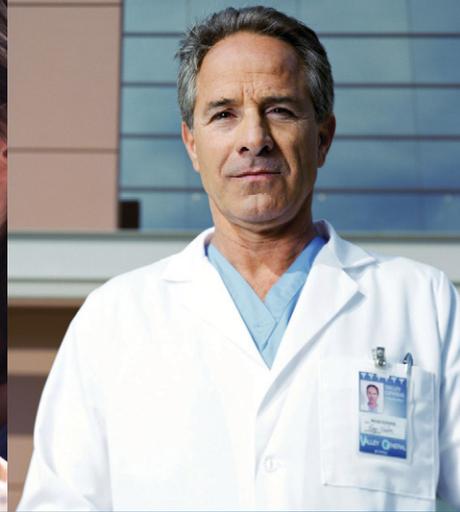


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\*\* "Enhancement of Learning and Memory by Elevating Brain Magnesium" — Neuron, Jan 2010.



## WELLNESS PROFILE

BY JON FINKEL

# Elena Pezzo's Innovative Thinking Saves Her Brother and Helps Her Find A New Career

Sometimes, you just have to take matters into your own hands. In the case of Elena Pezzo, the matter that needed to be dealt with was the rapidly deteriorating health of her brother, Anthony.

To hear Elena talk about it, Anthony was your average, ambitious American man. “My brother was a total meat and potatoes guy,” she explains. “He was an entrepreneur in New York City. He owned a car wash. He worked hard and fast and had that kind of personality. He was high stress.”

Whether that stress led to Anthony's eventual condition, nobody can be sure, but what we do know is that a seemingly healthy man with energy to burn suddenly dropped to the ground in a parking lot.

“On June 6<sup>th</sup>, 2011, Anthony had a seizure in a parking lot and it turned into a stroke,” she says. “He was found 24 hours later on the ground. As soon as I heard, I flew up from Florida to take care of him. He was in bad shape. He wasn't able to see and he couldn't speak or walk. The doctors even suggested pulling the plug.”

What a lot of people don't understand is that **strokes** do strike younger people, which is why controlling **blood pressure** and **vascular disease** risk factors such as **LDL** and **C-reactive protein** are important at any age. Anthony was only 46 when stricken by this severe stroke.



Elena and Anthony Pezzo

## WELLNESS PROFILE

Even more disturbing, the doctors suggested that she watch the movie *The Diving Bell and the Butterfly*, which chronicles one man's battle with 'locked-in' syndrome, which is a condition whereby someone is mentally aware of their surroundings, but their body is completely paralyzed. It is a horrific ordeal that can happen rarely following someone awakening from a stroke.

"I chose not to pull the plug and instead decided to give treatment with supplements a try," she says.

This tactic, of course, was not supported by her brother's physicians. They had concluded that Anthony had suffered such a severe lack of oxygen to the brain that there was no hope for recovery. Elena says she saw the scans herself and could see that his entire brain was affected, not just one side. In her own, general terms, "**His brain was fried.**"

"It was horrible," she says. "He was a vegetable and as far as his medical team was concerned, there was nothing they could do. He was in a **coma** and he was not coming out."

Prior to Anthony's stroke, he had not taken any supplements, but his sister says that he was in average health. Sitting there, watching him day after day, Elena became determined to not just let her brother slip away. She knew that she had to find some way to make him better or she should just pull the plug.

### Thinking Outside the Medical Box

Having been an avid Life Extension® reader for many years, Elena knew that many established positions in mainstream medicine are wrong. At this moment, with her brother's life hanging in the



balance, she turned to the knowledge that she had gained over the years about nutrients and how they can radically affect the brain. Particularly, she focused on two supplements: CoQ10 and omega-3 fish oils.

"I remembered reading several articles and news items in *Life Extension*® magazine about how good omega-3s are for the brain," she says. "I read the same things about CoQ10. Life Extension was the only place I trusted because me and my mom live with this magazine. We love it. The biggest message is what stress does to the body and how you can take holistic approaches to problems. I knew about the power of nutrition and supplementation."

She also remembered reading a profile that Life Extension did about Dr. Mark Hyman and how he mentioned both supplements as powerful brain boosters. At first, the doctors did not want to listen to what Elena was telling them about the powers of supplements, but she needed Anthony's doctor's permission to give them to him.

"It took a lot of convincing," she said. "But eventually they let me give him the supplements. They weren't thrilled about it."

Since he couldn't take the drugs orally, the nurses had to administer it through his feeding tube. She began treating him like this at the

end of June 2011 and he started to come out of the coma in October.

"Of course, my first reaction was that I wanted to call his doctors and let them know that he was doing great," she says. "Part of me also wanted to let them know that if I listened to them, he'd be in his grave. Thank God they couldn't find his will, which had a "Do Not Resuscitate" in it.

A year after coming out of his stroke, Anthony made a full recovery mentally and his physical recovery is coming along slowly. He began walking once again at the end of the summer of 2012.

### An Interesting Inspiration

With her brother on his way to what Elena one day hopes will be a full recovery, she turned her attention to starting a business that would help other people take care of themselves better.

"I looked at how well my brother was doing and I wanted to use it as an inspiration to teach people to eat healthy," she says. "My brother never stopped to smell the roses before his stroke. He now has a new appreciation of life and health and he was honored that I'd start my business with him in mind."

The business she's referring to is a healthy food truck that delivers nutritious foods throughout South Florida.

## WELLNESS PROFILE

“There are no healthy food trucks in Florida,” she said. “I love super foods and I wanted to open a truck that serves them. Eating healthy creates a balance in your life and detoxes your body. You are what you eat.”

Serving the area between Fort Lauderdale and West Palm Beach, Elena serves vegan raw super foods, as well as super food smoothies, with names like You Macha Me Crazy and Zen Berry.

She mostly serves gym events, health and wellness fairs, and yogi events, and she’s soon going to be introducing raw foods and boxed lunches into her menu.

Elena’s SUPERFOOD healthy truck can sometimes be seen parked outside seminars held at the **Life Extension Nutrition Center** in Ft. Lauderdale.

She calls her truck The Zenergy Truck, which is a combination of Zen and Energy. Next time you’re in South Florida, be sure to keep your eyes peeled on the road for Elena, the self-described Health Junkie on Wheels. ●

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



For more information on Elena Pezzo and her Zenergy Truck, visit: <http://elenapezzo.healthcoach.integrativenutrition.com/>



### HEALTHY ALMOND PANCAKES RECIPE

**Prep Time:** 10 minutes

**Cooking Time:** 10 minutes

**Yields:** 4 servings

#### Ingredients:

1 egg

1 1/2 cups almond,  
rice or soy milk

1/4 cup canola oil

1 3/4 cups oat or  
whole wheat pastry flour

1/2 cup almonds,  
finely chopped

1 tablespoon non-aluminum  
baking powder

1/2 teaspoon sea salt

#### Directions:

Mix egg, milk and oil in a medium-size bowl.

Mix flour, almonds, baking powder and salt into a small bowl.

Combine dry ingredients into the wet ingredients.

Mix until dry ingredients are moistened.

Using a 1/4 - 1/2 cup measuring cup drop pancakes onto a lightly oiled skillet and cook until golden brown on both sides.

Serve warm with maple syrup or honey.

#### Notes:

Try 1/2 cup of shredded coconut and/or 1/4 cup malt-sweetened chocolate chips instead of almonds.

Try a little lemon zest, the juice of one lemon (add a little less milk) and 1/2 cup poppy seeds for lemon poppy seed pancakes.

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<b>Watercress 4:1 extract</b>	<b>50 mg</b>
<b>Indole-3-Carbinol (I3C)</b>	<b>80 mg</b>
<b>Rosemary Extract</b>	<b>50 mg</b>
<b>Cat's Claw Extract</b>	<b>50 mg</b>
<b>Cabbage Extract</b>	<b>25 mg</b>
<b>DIM (di-indolyl-methane)</b>	<b>14 mg</b>
<b>Apigenin</b>	<b>25 mg</b>

Those who want to obtain the benefits of *trans-resveratrol* can order **Triple Action Cruciferous Vegetable Extract with Resveratrol**. Each capsule provides **20 mg of trans-resveratrol** in addition to the **vegetable extracts** and retails for \$32 per 60-capsule bottle. When a member buys four bottles, the price is reduced to only **\$22.20 per bottle**. *Contains corn.*

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**To order Triple Action Cruciferous Vegetable Extract, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

Scientists have identified specific extracts from **cruciferous vegetables**—such as broccoli, cauliflower, cabbage and Brussels sprouts—that help maintain healthy hormone metabolite balance. **Triple Action Cruciferous Vegetable Extract** combines some of these plant extracts into a comprehensive formula for optimal DNA protection.

**I3C (indole-3-carbinol)** and **DIM (di-indolyl-methane)** favorably modulate estrogen metabolism and induce liver detoxification enzymes to help neutralize potentially harmful estrogen metabolites and xenoestrogens (potentially toxic, estrogen-like environmental chemicals).<sup>1-4</sup>

Extracts of **broccoli**, **watercress**, and **rosemary** provide **glucosinolates**, **isothiocyanates**, **carnosic acid**, and **carnosol**—bioactive compounds that have a multitude of favorable effects on estrogen metabolism and cell division.<sup>5-8</sup> **Apigenin**, a powerful plant flavonoid found in plants such as **parsley** and **celery**, is also added to the formula to boost cell protection,<sup>9</sup> while 25 mg of a natural source of benzyl isothiocyanate (BITC), are included to maintain cell health.<sup>10</sup>

Consumers should be aware that while consumption of cruciferous vegetables is highly recommended, the cooking process depletes many of the beneficial compounds such as **I3C**.

For those weighing less than 160 pounds, just one capsule a day provides optimal potencies. Those weighing over 160 pounds should consider taking two capsules a day. A 60 vegetarian capsules bottle of **Triple Action Cruciferous Vegetable Extract** retails for \$24. If a member buys four bottles, the price is reduced to only **\$16.50 per bottle**.

# KRILL HEALTHY JOINT FORMULA

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## 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.



Item # 01600

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**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).**

Licensed from Valensa International.

Zanthin<sup>®</sup> is a registered trademark of Valensa International, Inc.

To order **Krill Healthy Joint Formula**  
call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

Restore  
Cellular  
Energy  
with...

NEXT-GENERATION

# COQ10

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>

## Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™



Item # 01426

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



Item # 01425

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



Item # 01431

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

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

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



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

#### References

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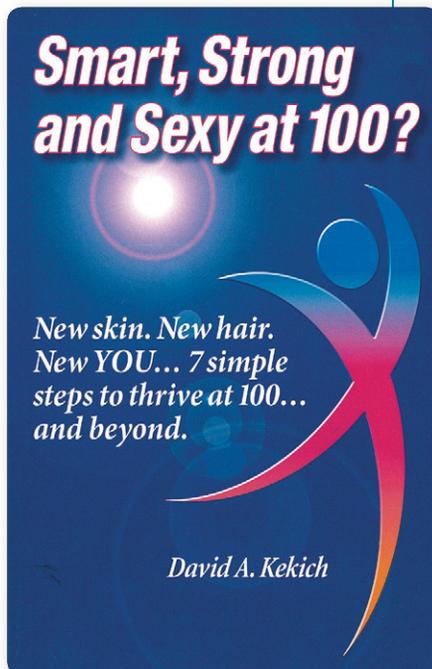
These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.



## BOOK REVIEW

*Smart, Strong  
and Sexy at 100?  
New skin. New hair.  
New YOU... 7 simple steps  
to thrive at 100... and beyond.*

BY DAVID A. KEKICH



*"As one who has devoted himself to radical life extension, and who has devoured nearly every book on the topic, I place Smart, Strong and Sexy at 100? at the top of my recommended reading list. David Kekich has managed to capture the essence of this complex topic and distill it down to a user friendly book." – Ray Kurzweil, inventor, futurist, author of *The Age of Spiritual Machines* and *The Singularity is Near**

When life extension expert Ray Kurzweil recommends a book in such glowing terms, the scientific literary community stands up to take notice. In the case of *Smart, Strong and Sexy at 100?*, such emphatic praise is certainly deserved.

The book, written by Maximum Life Foundation founder David Kekich, explores myriad ways that humans can beat aging once and for all. While the book is divided into three parts, the core of the longevity plan takes place in **Part II: Seven Steps You Can Take to Put Extreme Longevity Odds on Your Side.**

## BOOK REVIEW



The first step described in this process deals with nutrition. The reason Kekich places this topic first, ahead of even exercise and supplements, is because he feels that, "... the largest volume of chemicals to which your internal organs are exposed come from your food. The most powerful weapon you currently have for fighting the ravages of aging is a healthy diet."

One of the points Kekich aims to hit home in this chapter is the value of eating fresh or raw foods versus eating processed and overcooked foods. This chapter is filled with literally dozens and dozens of useful facts to help the reader understand how seemingly small diet or cooking decisions can have a giant impact on the quality of the food you ingest. Many of the strategies employed in this chapter will be familiar to Life Extension® readers, including minor tips like avoiding over-barbecued meat and major life changes like practicing calorie restriction.

Steps two and three in Kekich's plan deal with exercise and supplements. In the former, he talks about not only the importance of exercise, but also provides practical advice on how to get started with weight training, interval training and everything in between. His quote, "If exercise were a drug, it would dominate the headlines" permeates his entire thought process in convincing people about the importance of starting and maintaining a lifelong fitness routine.

The supplement chapter talks about many cutting edge vitamins, minerals, and enzymes that readers should include in their regimen. Kekich is a long-time Life Extension® member and he even touts some of our studies and products, including our research on the benefits of pyrroloquinoline quinone (PQQ) as a great companion to CoQ10.

The remaining steps in his **Seven Steps You Can Take to Put**

**Extreme Longevity Odds on Your Side** are Anti-Aging Medicine, Lifestyle, Stress Management, and Attitude. There are far too many excellent ideas and strategies dealing with each category to mention here, but suffice to say that those who buy the book will not be left wanting for details on how to live a longer, healthier life! ●

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

To order a copy of *Smart, Strong and Sexy at 100?*, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

Retail price \$17.95  
Member price \$13.46  
Item # 33853



# 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> L-Arginine HCl, Aspartic Acid, Pycnogenol® Dried French Maritime Pine ( <i>Pinus pinaster</i> ) Extract (bark)	<b>1440 mg</b>
<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**.

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



Item # 01373



**B**lood testing provides the ultimate information regarding correctable risk factors that may predispose you to disorders such as cancer, diabetes, cardiovascular disease, and more. Information about general health and nutritional status can also be gained through standard blood analysis. Standing behind the belief that blood testing is an essential component of any program designed to attain optimal health and longevity, *Life Extension*<sup>®</sup> offers this innovative and convenient service at a very affordable price. Not only is comprehensive blood testing an important step in safeguarding your health, it is a simple process from virtually anywhere in the United States.

#### 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.lifeextension.com](http://www.lifeextension.com).
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 sent 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.

# Blood Testing The Ultimate Information

## MOST POPULAR PANELS

### Life Extension Member Pricing

- |  |  |
|--|--|
| <p><b>COMPREHENSIVE PANELS</b></p> <p><b>MALE LIFE EXTENSION PANEL (LC322582) \$269</b><br/>           CBC/Chemistry Profile DHEA-S<br/>           Homocysteine TSH for thyroid function<br/>           Free Testosterone Total Testosterone<br/>           Estradiol Vitamin D 25- hydroxy<br/>           PSA (prostate-specific antigen)<br/>           C-Reactive Protein (high-sensitivity)</p> <p><b>FEMALE LIFE EXTENSION PANEL (LC322535) \$269</b><br/>           CBC/Chemistry Profile DHEA-S<br/>           Estradiol Homocysteine<br/>           Progesterone TSH for thyroid function<br/>           Free Testosterone Total Testosterone<br/>           C-Reactive Protein Vitamin D 25- hydroxy<br/>           (high sensitivity)</p> <p><b>MALE WEIGHT LOSS PANEL (LCWLM) \$299</b><br/>           CBC/Chemistry Profile DHEA-S<br/>           Insulin PSA<br/>           Free Testosterone (prostate-specific antigen)<br/>           Estradiol Total Testosterone<br/>           Free T3 TSH<br/>           C-Reactive Protein Free T4<br/>           (high sensitivity) SHBG</p> <p><b>FEMALE WEIGHT LOSS PANEL (LCWLF) \$299</b><br/>           CBC/Chemistry Profile DHEA-S<br/>           Progesterone Insulin<br/>           Free Testosterone Total Testosterone<br/>           Estradiol TSH<br/>           Free T3 Free T4<br/>           C-Reactive Protein SHBG<br/>           (high sensitivity)</p> <p><b>MALE HORMONE ADD-ON PANEL (LCADDM)* \$155</b><br/> <b>Pregnenolone and Dihydrotestosterone (DHT)</b><br/>           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 valuable information about a testosterone metabolite that can affect the prostate, and the mother hormone that acts as a precursor to all other hormones.</p> <p><b>FEMALE HORMONE ADD-ON PANEL (LCADD)* \$125</b><br/> <b>Pregnenolone and Total Estrogens</b><br/>           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 valuable information about total estrogen status, and the mother hormone that acts as a precursor to all other hormones.</p> <p><b>LIFE EXTENSION THYROID PANEL (LC304131) \$75</b><br/>           TSH, T4, Free T3, Free T4.</p> <p><b>FEMALE COMPREHENSIVE HORMONE PANEL* \$299</b><br/> <b>(LC100011)</b> CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.</p> <p><b>MALE COMPREHENSIVE HORMONE PANEL* \$299</b><br/> <b>(LC100010)</b> CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.</p> | <p><b>THE CBC/CHEMISTRY PROFILE (LC381822) \$35</b><br/> <b>OVER 40 PARAMETERS TESTED</b><br/> <b>CARDIOVASCULAR RISK PROFILE</b><br/>           Total Cholesterol Cholesterol/HDL Ratio<br/>           HDL Cholesterol Estimated CHD Risk<br/>           LDL Cholesterol Glucose<br/>           Triglycerides Iron</p> <p><b>LIVER FUNCTION PANEL</b><br/>           AST (SGOT) Total Bilirubin<br/>           ALT (SGPT) Alkaline Phosphatase<br/>           LDH</p> <p><b>KIDNEY FUNCTION PANEL</b><br/>           BUN BUN/Creatinine Ratio<br/>           Creatinine Uric Acid</p> <p><b>BLOOD PROTEIN LEVELS</b><br/>           Total Protein Globulin<br/>           Albumin Albumin/Globulin Ratio</p> <p><b>BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE</b><br/>           Red Blood Cell Count Monocytes<br/>           White Blood Cell Count Lymphocytes<br/>           Eosinophils Platelet Count<br/>           Basophils Hemoglobin<br/>           Polys (Absolute) Hematocrit<br/>           Lymphs (Absolute) MCV<br/>           Monocytes (Absolute) MCH<br/>           Eos (Absolute) MCHC<br/>           Baso (Absolute) Polynucleated Cells<br/>           RDW</p> <p><b>BLOOD MINERAL PANEL</b><br/>           Calcium Sodium<br/>           Potassium Chloride<br/>           Phosphorus Iron</p> <p><b>NOTE: CBC/Chemistry profile is included in the Male and Female Life Extension panels and Weight Loss Panels.</b></p> <p><b>GENERAL HEALTH</b></p> <p><b>HEMOGLOBIN A1C (HBA1C) (LC001453) \$31</b><br/>           Hemoglobin A1C evaluates long-term blood sugar control. Serum glucose sometimes reacts with important proteins in the body rendering them nonfunctional. Since this process, known as glycation is one of the leading theories of aging, Life Extension<sup>®</sup> believes everyone should check their A1C level.</p> <p><b>VITAMIN D (25OH) (LC081950) \$47</b><br/>           This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.</p> <p><b>FOOD SAFE ALLERGY TEST** (LCM73001) \$174</b><br/>           This test measures delayed (IgG) food allergies for 95 common foods.</p> <p><b>ASPIRINWORKS™* (LC501620) \$149</b><br/>           Taking aspirin to prevent heart attack? Is it working? This is a random urine test used to measure your resistance to aspirin.</p> <p><b>OMEGA SCORE™*** (LCOMEGA) \$131.25</b><br/>           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.</p> <p><b>COQ10* (COENZYME Q10) (LC120251) \$145</b><br/>           This test is used to check the blood level of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.</p> |
|--|--|

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

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



## Other Popular Panels Life Extension Member Pricing

- ENERGY PROFILE (LC100005)** **\$375**  
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.

- ANEMIA PANEL (LC100006)** **\$86**  
CBC/Chemistry Profile (see description), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.

- INFLAMMATION PANEL (LC100007)** **\$135**  
CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.

- THYROID ANTIBODY PROFILE (LC100004)** **\$99**  
Thyroid Antithyroglobulin Antibody (ATA) and Thyroid Peroxidase Antibody (TPO).

### Popular Single Tests

- HORMONES**  
 **CORTISOL (LC004051)** **\$39**  
This test is to measure adrenal function.

- DHEA-SULFATE (LC004020)** **\$61**  
This test shows if you are taking the proper amount of DHEA. This test normally costs \$100 or more at commercial laboratories.

- DIHYDROTESTOSTERONE (DHT)\* (LC500142)** **\$99**  
Measures serum concentrations of DHT.

- ESTRADIOL (LC004515)** **\$33**  
For men and women. Determines the proper amount in the body.

- INSULIN FASTING (LC004333)** **\$42**  
Can predict those at risk of diabetes, obesity, and heart and other diseases.

- PREGNENOLONE\* (LC140707)** **\$116**  
Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing's syndrome.

- PROGESTERONE (LC004317)** **\$55**  
Primarily for women. Determines the proper amount in the body.

- SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016)** **\$33**  
This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens.

- SOMATOMEDIN C (IGF-1) (LC010363)** **\$75**  
Indicates growth hormone secretion levels. Low levels have been associated with atherosclerosis as well as all-cause mortality.

**Blood tests available only in the continental United States. Not available in Maryland.**

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

- CARDIAC RISK** **\$125**  
**Lp-PLA2 (PLAC TEST)\* (LC123240)**

This test is used to aid in predicting risk for coronary heart disease, and ischemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries.

- C-REACTIVE PROTEIN (HIGH-SENSITIVITY) (LC120766)** **\$42**

Measures inflammation factors in arteries. Recent studies indicate that C-reactive protein may be the most accurate risk factor for predicting heart attack and stroke.

- CARDIAC PLUS\* (LC100008)** **\$145**

CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine.

- VAP PLUS\* (LC100009)** **\$330**

VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.

- FIBRINOGEN\* (LC001610)** **\$31**

High levels of this blood-clotting factor increase the risk of heart attack and stroke.

- HOMOCYSTEINE (LC706994)** **\$64**

Can indicate if you are likely to have a heart attack or stroke. Even if you take folic acid, you still may have dangerously high levels of this artery-clotting metabolic debris that can be lowered with high doses of TMG, vitamin B6, and vitamin B12.

- VAP™ TEST\* (LC804500)** **\$90**

The VAP cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. Direct measurements, not estimations, are provided for total cholesterol, LDL, HDL, VLDL, and cholesterol subclasses.

- MALE HEALTH**  
 **PSA (PROSTATE-SPECIFIC ANTIGEN) (LC010322)** **\$31**

Can provide an early warning sign for prostate disorders and possible cancer.

- FREE-PSA (INCLUDES TOTAL PSA)\* (LC480780)** **\$61**

Recommended to determine if an elevated PSA is indicative of prostate cancer.

- BONE HEALTH**  
 **OSTEOCALCIN\* (LC010249)** **\$91**

Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.

- DPD CROSS LINK URINE TEST (LC511105)** **\$79**

The deoxypyridinoline (DPD) urine test can be used to measure bone re-absorption rates in healthy individuals and in those with enhanced risk of developing metabolic bone diseases. Deoxypyridinoline can be used to monitor therapies (which may include bisphosphonate drugs) in people diagnosed with osteoporosis.

This is NOT a complete listing of LE blood test services. Call 1-800-208-3444 for additional information.

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

### TERMS AND CONDITIONS

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

Name

Date of Birth  
(required) / /

Address

City

State

Zip

Phone

Credit Card No.

Expiration Date /

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  
GABA Powder  
Glycine Capsules  
Glycine Powder  
L-Arginine Capsules  
L-Arginine Free Base Powder  
Arginine/L-Ornithine Capsules  
L-Carnitine Capsules  
L-Glutathione, L-Cysteine & C  
L-Glutamine Capsules  
L-Glutamine Powder  
L-Lysine Capsules  
L-Lysine Powder  
L-Tyrosine Tablets  
Mega L-Glutathione Capsules  
N-Acetyl-L-Cysteine Capsules  
Optimized Carnitine with GlycoCarn®  
PharmaGABA  
Super Carnosine Capsules  
Taurine Capsules

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ArthroMax™ Advanced with UC-II® and  
AprèsFlex™  
Bone-Up™  
Bone Restore  
Bone Restore w/Vitamin K2  
Bone Strength Formula w/KoAct™  
Chondroitin Sulfate  
Chondrox  
Fast Acting Joint Formula  
Glucosamine Chondroitin Capsules

## BRAIN HEALTH

Acetyl-L-Carnitine  
Acetyl-L-Carnitine-Arginate  
CDF 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  
Bromelain Powder  
Carnosoothe w/PicroProtect  
Digest RC™  
Enhanced Super Digestive Enzymes  
Extraordinary Enzymes  
Life Flora™  
Natural EsophaGuard  
Pancreatin  
Probiotic All-Flora®  
Probiotic Anti-Aging  
Probiotic Colon™  
Regimint  
Theralac Probiotics

## DURK AND SANDY PRODUCTS

Blast™  
Dual-C  
Inner Power™  
Memory Upgrade™

## EYE CARE

Bilberry Extract  
Blackcurrant Freeze Dried Extract  
Brite Eyes III  
Eye Pressure Support with Mirtogenol®  
Overcast Polarized Sunglasses  
Solarshield Sunglasses  
Super Zeaxanthin with Lutein &  
Meso-Zeaxanthin and C3G  
Vision Optimizer

## FIBER

AppleWise Polyphenol  
Fiber Food  
Hi-Lignan® Nutri-Flax®  
TruFiber®  
WellBabX PGX® Soluble Fiber Blend

## FOOD

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  
Life Extension Shampoo and Conditioner  
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®  
PhosphoOmega®  
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  
Sytrolin™  
Theaflavin Standardized Extract  
TMG Powder  
TMG Tablets

## HERBAL/PHYTO PRODUCTS

Artichoke Leaf Extract  
Astaxanthin  
Berry Complete  
Blueberry Extract  
Blueberry Extract w/Pomegranate  
Butterbur Extract w/Standardized  
Rosmarinic Acid  
Calcium D-Glucarate  
Cilantro Herbal Extract  
Citrus Bioflavonoid  
Enhanced Berry Complete with RZD™ Acai  
Floradix® Iron & Herbs  
Floravital® Iron & Herbs  
Full-Spectrum Pomegranate™  
Grapeseed Extract with Resveratrol &  
Pterostilbene  
Huperzine A with Natural Vitamin E  
Kyolic® Garlic Formula 105  
Kyolic® Reserve  
Mega Green Tea Extract  
Mega Green Tea Extract (Decaffeinated)  
(also w/ CoffeeGenic™ Green Coffee Extract)  
Mega Lycopene Extract  
Nutrim  
Optimized Ashwagandha Extract  
Optimized Garlic  
Pomegranate Extract  
Pomegranate Juice Concentrate  
ProGreens®  
Pure-Gar™  
Pycnogenol  
Optimized Quercetin  
Resveratrol with Synergistic Grape-Berry Actives  
Rhodiola Extract  
Rosmarinic Acid Extract  
Silymarin  
SODzyme™ with GliSODin®  
Stevia Extract

Super Bio-Curcumin®  
Super Ginkgo Extract  
Triple Action Cruciferous Vegetable Extract  
Venotone  
Whole Grape Extract

## HORMONES

Advanced Natural Sex for Women® 50+  
Cordyceps CS-4  
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  
Enhanced Life Extension Whey Protein  
i26 Hyperimmune Egg  
Immune Protect with PARACTIN®  
Lactoferrin  
Maitake SX-Fraction  
Norwegian Shark Liver Oil  
Optimized Fucoidan w/Maritech® 926  
Primal Defense™  
ProBoost™ Thymic Protein A  
Pure Gar™  
Reishi Extract Mushroom Complex  
Sambu® Guard  
Thymic Immune Factors  
Vitamin C with Dihydroquercetin  
Zinc Lozenges with Vitamin C

## INFLAMMATORY REACTIONS

Arthro-Immune Joint Support  
ArthroMax™ with Theaflavins  
Boswella  
Boswella™ Topical Cream  
Bromelain (Specially-coated)  
DHA (Vegetarian Sourced)  
Emulsified Norwegian Cod Liver Oil  
Emulsified Super Twin EPA/DHA  
Fast Acting Joint Formula  
Ginger Force  
Krill Oil  
5-LOX Inhibitor w/AprèsFlex™  
Mega EPA/DHA  
Mega GLA with Sesame Lignans  
MSM  
Natural Relief 1222™ Cream  
Omega-3 Whirl  
Serrafazyme  
SODzyme™ with GliSODin® and Wolfberry  
Super Omega-3 EPA/DHA with Sesame  
Lignans & Olive Fruit Extract  
Tart Cherry  
Udo's Choice Oil  
Zyflamend® Tiny Caps®

## LIVER HEALTH

Branch Chain Amino Acids  
N-Acetyl Cysteine  
Liver Force  
Liver Efficiency Formula  
Certified European Milk Thistle  
Hepatopro  
SAME  
Silymarin

## MINERALS

Biosil  
Bone Restore  
Bone Strength Formula w/KoAct®  
Bone-Up™  
Boron Capsules  
Calcium Citrate with D3  
Chromium Ultra  
Copper  
Dr. Strum's Intensive Bone Formula

Floradix® Iron & Herbs  
 Floravital® Iron & Herbs  
 Iodoral  
 Iron Protein Plus  
 Magnesium  
 Magnesium Citrate  
 Mineral Formula for Men  
 Mineral Formula for Women  
 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  
 Empty Gelatin Capsules  
 The Capsule Filler Machine

## MITOCHONDRIAL SUPPORT

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

## MOOD RELIEF

Adrenal Energy Formula™  
 Bioactive Milk Peptides  
 L-Theanine  
 5 HTP  
 Enhanced Natural Sleep® w/ Melatonin  
 Enhanced Natural Sleep® w/o Melatonin  
 Natural Stress Relief  
 Stabilium® 200  
 SAME  
 St. John's Wort Extract

## MOUTH CARE

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

## MULTIVITAMIN

Children's Formula Life Extension Mix  
 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

BetterWOMAN®  
 Optimized Cran-Max® with UTIRose™  
 5-LOXIN®  
 (Water-Soluble) Pumpkin Seed Extract  
 Super Saw Palmetto with Beta-Sitosterol  
 Super Saw Palmetto/Nettle Root Formula  
 w/Beta-Sitosterol  
 Ultra Natural Prostate Formula

## SKIN CARE

Advanced Under Eye Serum with Stem Cells  
 Amber Self MicroDermAbrasion  
 Anti-Aging Mask  
 Anti-Glycation Serum

Antioxidant Rejuvenating Foot Cream  
 Antioxidant Rejuvenating Foot Scrub  
 Antioxidant Rejuvenating Hand Cream  
 Antioxidant Rejuvenating Hand Scrub  
 Anti-Redness & Blemish Lotion  
 Bio-Collagen w/Patented UC-II®  
 Bioflavonoid Cream  
 Broccoli Sprout  
 Corrective Clearing Mask  
 DermaWhey  
 DNA Repair Cream  
 Dual-Action MicroDermAbrasion  
 Elastin Collagen Body Firming Lotion  
 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®  
 Lavilin Underarm Deodorant  
 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/ Progesterone  
 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  
 Soy Protein Concentrate  
 Super Absorbable Soy Isoflavones  
 Ultra Soy Extract

## 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+  
 EDTA  
 European Leg Solution Diosmin 95  
 Fem Dophilus  
 Femmenessence MacaPause®  
 GlucoFit™  
 Hearos™ Ear Plugs  
 Ideal Bowel Support 299  
 Maitake SX-Fraction™  
 Migra-eeze™  
 Natural Female Support  
 Organic Total Body Cleanse

Pecta-Sol®  
 Potassium Iodide  
 PQQ Caps 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  
 Creatine Powder  
 Enhanced Life Extension Protein  
 DMG (N, N-dimethylglycine)  
 Inosine  
 L-Glutamine Capsules  
 L-Glutamine Powder

## VITAMINS

Ascorbic Acid Powder  
 Ascorbyl Palmitate Capsules  
 B1  
 B2  
 B12  
 Beta-Carotene  
 Biotin Capsules  
 Biotin Powder  
 Buffered Vitamin C Powder  
 Complete B Complex  
 Folic Acid + B12  
 Gamma E Tocopherol w/Sesame Lignans  
 Gamma E Tocopherol/Tocotrienols  
 Inositol Capsules  
 Inositol Powder  
 Mega Lycopene Extract  
 Methylcobalamin  
 MK-7  
 No-Flush Niacin  
 Optimized Folate  
 PABA Capsules  
 Super Ascorbate C Capsules  
 Super Ascorbate C Powder  
 Super K w/Advanced K2 Complex  
 Supercritical Omega 7™  
 Tocotrienols w/Sesame Lignans  
 Vitamin A Nutrisorb  
 Vitamin B3 (Niacin) Capsules  
 Vitamin B6  
 Vitamin B12 Tablets  
 Vitamin C  
 Vitamin D  
 Vitamin D3  
 Vitamin D3 w/Sea-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®  
 Anti-Adipocyte Formula w/AdipoStat  
 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  
 Stevia Liquid Extract  
 Super CLA Blend w/Guarana and Sesame Lignans  
 Super CLA Blend w/Sesame Lignans  
 Udo's Choice Wholesome Fast Food Blend  
 WellBetX PGX® Soluble Fiber Blend

# 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>					
00449	<b>ACETYL-L-CARNITINE</b> - 500 mg, 100 caps Buy 4 bottles, price each	\$34.00 30.00	\$25.50 22.50		
00788	<b>ACETYL-L-CARNITINE ARGINATE</b> - 100 caps Buy 4 bottles, price each	59.00 50.99	44.25 38.24		
01628	<b>ADRENAL ENERGY FORMULA™</b> - 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01308	<b>ADVANCED LIPID CONTROL</b> - 60 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01521	<b>ADVANCED ORAL HYGIENE</b> - 60 veg. mint lozenges Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00681	<b>AHCC</b> - 500 mg, 30 caps Buy 4 bottles, price each	59.98 53.33	44.99 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 Buy 4 bottles, price each	37.00 32.00	27.75 24.00		
01440	<b>ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO</b> - 100 caps Buy 4 bottles, price each	26.00 23.00	19.50 17.25		
01510	<b>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT</b> - 60 veg. caps Buy 4 bottles, price each	35.00 32.00	26.25 24.00		
01509	<b>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT &amp; INTEGRA LEAN®(ADVANCED)</b> - 60 veg. caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
01625	<b>APPLEWISE POLYPHENOL EXTRACT</b> - 600 mg, 30 veg. caps Buy 4 bottles, price each	21.00 19.00	15.75 14.25		
01039	<b>ARGININE/ORNITHINE</b> - 500/250, 100 caps Buy 4 bottles, price each	16.00 14.50	12.00 10.88		
00038	<b>ARGININE/ORNITHINE POWDER</b> - 150 grams Buy 4 bottles, price each	22.95 19.00	17.21 14.25		
01624	<b>(L)-ARGININE CAPS</b> - 700 mg, 200 veg. caps Buy 4 bottles, price each	26.50 23.25	19.88 17.44		
01025	<b>(L)-ARGININE FREE-FORM POWDER</b> - 100 grams Buy 4 bottles, price each	15.98 14.31	11.99 10.73		
01617	<b>ARTHROMAX™ w/THEAFLAVINS &amp; APRESFLEX™</b> - 120 veg. caps Buy 4 bottles, price each	44.00 40.00	33.00 30.00		
01618	<b>ARTHROMAX™ ADVANCED w/UC-II® &amp; APRESFLEX™</b> - 60 caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01404	<b>ARTHRO-IMMUNE JOINT SUPPORT</b> - 60 veg. caps Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
00919	<b>ARTICHOKE LEAF EXTRACT</b> - 500 mg, 180 veg. caps Buy 4 bottles, price each	28.00 25.38	21.00 19.04		
00080	<b>ASCORBIC ACID POWDER</b> - 454 grams Buy 4 bottles, price each	38.00 34.93	28.50 26.20		
00082	<b>ASCORBYL PALMITATE</b> - 500 mg, 100 caps Buy 4 bottles, price each	22.50 20.00	16.88 15.00		
00888	<b>ASHWAGANDHA EXTRACT (OPTIMIZED)</b> - 60 veg. caps Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
01066	<b>ASPIRIN</b> - 81 mg, 300 enteric coated tablets Buy 4 bottles, price each	6.00 5.33	4.50 4.00		
00708	<b>ASTAXANTHIN</b> - 2 mg, 30 softgels	10.25	7.69		

**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 Buy 4 bottles, price each	\$19.95 18.60	\$14.96 13.95		
00925	<b>BENFOTIAMINE (MEGA)</b> - 250 mg, 120 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01206	<b>BERRY COMPLETE</b> - 30 veg. caps Buy 4 bottles, price each	21.00 18.67	15.75 14.00		
01406	<b>BERRY COMPLETE w/RZD™ ACAI (ENHANCED)</b> - 60 veg. caps Buy 4 bottles, price each	29.00 26.00	21.75 19.50		
00664	<b>BETA-CAROTENE</b> - 25,000 IU, 100 softgels Buy 4 bottles, price each	11.25 10.13	8.44 7.60		
00653	<b>BETTERWOMAN®</b> - 40 caps Buy 4 bottles, price each	40.00 38.00	30.00 28.50		
01622	<b>BIFIDO GI BALANCE</b> - 60 caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01073	<b>BILBERRY EXTRACT</b> - 100 mg, 100 veg. caps Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
01512	<b>BIOACTIVE MILK PEPTIDES</b> - 30 caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01631	<b>BIO-COLLAGEN w/PATENTED UC-II®</b> - 60 caps Buy 4 bottles, price each	36.00 32.00	27.00 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 Buy 4 bottles, price each	7.50 6.50	5.63 4.88		
00145	<b>BIOTIN POWDER</b> - 30 grams Buy 4 bottles, price each	12.50 11.00	9.38 8.25		
01709	<b>BLACK CUMIN SEED OIL</b> - 60 softgels Buy 4 bottles, price each	16.00 14.00	12.00 10.50		
01710	<b>BLACK CUMIN SEED OIL w/BIO-CURCUMIN®</b> - 60 softgels Buy 4 bottles, price each	32.00 30.00	24.00 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 Buy 4 bottles, price each	22.50 20.00	16.88 15.00		
01438	<b>BLUEBERRY EXTRACT w/ POMEGRANATE</b> - 60 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01506	<b>BONE FORMULA (DR. STRUM'S INTENSIVE)</b> - 300 veg. caps Buy 4 bottles, price each	56.00 50.00	42.00 37.50		
01611	<b>BONE RESTORE</b> - 150 caps Buy 4 bottles, price each	22.50 19.50	16.88 14.63		
01711	<b>BONE RESTORE w/VITAMIN K2</b> - 150 caps Buy 4 bottles, price each	26.00 23.00	19.50 17.25		
01211	<b>BONE STRENGTH FORMULA w/KOACT®</b> - 120 caps Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
00313	<b>BONE-UP®</b> - 240 caps Buy 4 bottles, price each	24.95 22.50	18.71 16.88		
01379	<b>BOOSTER</b> - 60 softgels Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01680	<b>BOOSTER w/ADVANCED K2 COMPLEX (SUPER)</b> - 60 softgels Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
00621	<b>BORON</b> - 3 mg, 100 caps Buy 4 bottles, price each	5.95 5.25	4.46 3.94		

**SUB-TOTAL OF COLUMN 2**

No.		Retail Each	Member Each	Qty	Total
00202	<b>BOSWELLA</b> - 100 caps Buy 4 bottles, price each	\$38.00 30.00	\$28.50 22.50		
00258	<b>BOSWELLA TOPICAL CREAM</b> - 4 oz Buy 4 jars, price each	15.00 13.00	11.25 9.75		
01253	<b>BRANCHED CHAIN AMINO ACIDS</b> - 90 veg. caps Buy 4 bottles, price each	19.50 17.00	14.63 12.75		
00999	<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		
00136	<b>BROMELAIN POWDER</b> - 100 grams Buy 4 bottles, price each	21.00 18.75	15.75 14.06		
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>					
01015	<b>CALCIUM CITRATE w/VITAMIN D</b> - 300 caps Buy 4 bottles, price each	\$24.00 21.25	\$18.00 15.94		
00535	<b>CALCIUM D-GLUCARATE</b> - 200 mg, 60 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		
00118	<b>CAPSULE FILLER MACHINE FOR "00" CAPSULES</b> Buy 4 machines, price each	18.95 18.25	14.21 13.69		
00613	<b>CAPSULE FILLER MACHINE FOR "0" CAPSULES</b> Buy 4 machines, price each	18.95 18.25	14.21 13.69		
01700	<b>CARDIO PEAK™ w/STANDARDIZED HAWTHORN &amp; ARJUNA</b> - 120 veg. caps Buy 4 machines, 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		
01041	<b>L-CARNITINE</b> - 500 mg, 30 caps Buy 4 bottles, price each	15.00 13.20	11.25 9.90		
01258	<b>CARNOSOOTHE w/PICROPROTECT™</b> - 60 veg. caps Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
01287	<b>CARNOSINE (SUPER)</b> - 500 mg, 90 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		
00390	<b>CDP CHOLINE CAPS</b> - 250 mg, 60 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		

**SUB-TOTAL OF COLUMN 3**

No.		Retail Each	Member Each	Qty	Total
00541	<b>CHOLINE CHLORIDE</b> - 16 oz liquid Buy 4 bottles, price each	\$12.95 12.17	\$9.71 9.13		
00364	<b>CHONDROITIN SULFATE CONCENTRATE</b> - 400 mg, 60 tablets Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
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		
00551	<b>CILANTRO HERBAL EXTRACT</b> - 1 oz Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
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		
00069	<b>CITRUS BIOFLAVONOID</b> - 100 caps Buy 4 bottles, price each	17.63 16.40	13.22 12.30		
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		
00050	<b>COD LIVER OIL (EMULSIFIED)</b> - 12 fl oz (355 ml) Buy 4 bottles, price each	15.59 13.10	11.69 9.83		
00293	<b>COD LIVER OIL (EMULSIFIED)</b> - 100 softgels (Emulsified) Buy 4 bottles, price each	10.97 10.34	8.23 7.76		
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 12 bottles, price each	74.00 66.60 64.00	55.50 49.95 48.00		
01696	<b>COGNITEX® w/o PREGNENOLONE w/NEUROPROTECTION COMPLEX</b> - 90 softgels Buy 4 bottles, price each Buy 12 bottles, price each	72.00 64.00 62.00	54.00 48.00 46.50		
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		
00110	<b>COMPLETE B-COMPLEX</b> - 180 caps Buy 4 bottles, price each	21.50 18.00	16.13 13.50		
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		

**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>					
01431	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-200 mg, 30 softgels</b>	\$62.00	\$46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01397	<b>CORDYCEPS CS-4™ - 60 veg. caps</b>	29.99	22.49		
01053	<b>CORIOLUS SUPER STRENGTH - 600 mg, 150 veg. caps</b>	99.95	74.96		
80140	<b>COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS - .33 oz</b>	49.00	36.75		
	Buy 2 bottles, price each	42.00	31.50		
80139	<b>COSMESIS AMBER SELF MICRODERMABRASION - 2 oz</b>	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80118	<b>COSMESIS ANTI-AGING MASK - 2 oz</b>	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
80134	<b>COSMESIS ANTI-GLYCATION SERUM - 1 oz</b> <b>W/BLEUBERRY &amp; POMEGRANATE EXTRACTS</b>	33.00	24.75		
	Buy 2 bottles, price each	31.35	23.51		
80133	<b>COSMESIS ANTIOXIDANT FACIAL MIST - 2 oz</b>	32.00	24.00		
	Buy 2 bottles, price each	30.40	22.80		
80127	<b>COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM - 2 oz</b>	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		
80128	<b>COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB - 2 oz</b>	59.00	44.25		
	Buy 2 jars, price each	51.92	38.94		
80117	<b>COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM - 2 oz</b>	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
80121	<b>COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB - 2 oz</b>	58.00	43.50		
	Buy 2 jars, price each	51.04	38.28		
80105	<b>COSMESIS ANTI-REDNESS &amp; BLEMISH LOTION - 1 oz</b>	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80147	<b>COSMESIS BIOFLAVONOID CREAM - 1 oz jar</b>	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80144	<b>COSMESIS BROCCOLI SPROUT CREAM - 1 oz</b>	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80120	<b>COSMESIS CORRECTIVE CLEARING MASK - 2 oz</b>	64.50	48.38		
	Buy 2 jars, price each	56.76	42.57		
80141	<b>COSMESIS DNA REPAIR CREAM - 1 oz jar</b>	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80108	<b>COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 oz</b>	74.95	56.21		
	Buy 2 bottles, price each	65.95	49.46		
80123	<b>COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM - 2 oz</b>	69.50	52.13		
	Buy 2 jars, price each	61.16	45.87		
80107	<b>COSMESIS FINE LINE-LESS - 1 oz</b>	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80131	<b>COSMESIS HAIR SUPPRESS FORMULA - 4 oz</b>	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80137	<b>COSMESIS HEALING FORMULA ALL-IN-ONE CREAM - 1 oz</b>	53.00	39.75		
	Buy 2 jars, price each	45.43	34.07		
80115	<b>COSMESIS HEALING MASK - 2 oz</b>	64.50	48.38		
	Buy 2 bottles, price each	56.76	42.57		
80102	<b>COSMESIS HEALING VITAMIN K CREAM - 1 oz</b>	79.50	59.63		
	Buy 2 bottles, price each	69.96	52.47		
80109	<b>COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 oz</b>	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80110	<b>COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER - 1 oz</b>	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80138	<b>COSMESIS HYDRATING ANTI-OXIDANT FACE MIST - 4 oz</b>	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50		

**SUB-TOTAL OF COLUMN 5**

No.		Retail Each	Member Each	Qty	Total
80103	<b>COSMESIS LIFTING &amp; TIGHTENING COMPLEX - 1 oz</b>	\$74.50	\$55.88		
	Buy 2 tubes, price each	65.56	49.17		
80146	<b>COSMESIS LYCOPENE CREAM - 1 oz jar</b>	28.00	21.00		
	Buy 2 jars, price each	25.40	19.05		
80135	<b>COSMESIS MELATONIN CREAM - 1 oz</b>	33.00	24.75		
	Buy 2 jars, price each	27.10	20.33		
80114	<b>COSMESIS MILD FACIAL CLEANSER - 8 oz</b>	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80122	<b>COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM - 2 oz</b>	64.00	48.00		
	Buy 2 jars, price each	56.32	42.24		
80111	<b>COSMESIS PIGMENT CORRECTING CREAM - 1/2 oz</b>	74.00	55.50		
	Buy 2 bottles, price each	65.12	48.84		
80106	<b>COSMESIS REJUVENATING SERUM - 1 oz</b>	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80142	<b>COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 oz</b>	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
80112	<b>COSMESIS SKIN LIGHTENING SERUM - 1/2 oz</b>	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80130	<b>COSMESIS SKIN STEM CELL SERUM - 1 oz</b>	74.00	55.50		
	Buy 2 bottles, price each	69.00	51.75		
80143	<b>COSMESIS STEM CELL CREAM W/ALPINE ROSE - 1 oz jar</b>	66.00	49.50		
	Buy 2 jars, price each	58.00	43.50		
80116	<b>COSMESIS ULTRA LIP PLUMPER - 1/3 oz</b>	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	<b>COSMESIS ULTRA WRINKLE RELAXER - 1 oz</b>	89.95	67.46		
	Buy 2 bottles, price each	79.76	59.82		
80113	<b>COSMESIS UNDER EYE REFINING SERUM - 1/2 oz</b>	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80104	<b>COSMESIS UNDER EYE RESCUE CREAM - 1/2 oz</b>	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80129	<b>COSMESIS VITAMIN C SERUM - 1 oz</b>	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80136	<b>COSMESIS VITAMIN D LOTION - 4 oz</b>	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25		
80145	<b>COSMESIS VITAMIN E-ESSENTIAL CREAM - 1 oz</b>	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
00862	<b>CRAN-MAX® - 500 mg, 60 veg. caps</b>	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
01424	<b>CRAN-MAX® with UTIROS®™ (OPTIMIZED) - 60 veg. caps</b>	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00609	<b>CREATINE CAPSULES - 120 caps</b>	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
00610	<b>CREATINE POWDER - 500 grams</b>	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50		
01646	<b>CREATINE WHEY GLUTAMINE POWDER - 454 grams (vanilla)</b>	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01429	<b>CR MIMETIC LONGEVITY FORMULA - 60 veg. caps</b>	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) - 400 mg, 60 veg. caps</b>	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		

**SUB-TOTAL OF COLUMN 6**

No.		Retail Each	Member Each	Qty	Total
<b>D</b>					
01313	<b>DERMAWHEY</b> - 400 mg, 60 caps Buy 4 bottles, price each	\$65.00 59.00	\$48.75 44.25		
00658	<b>7-KETO® DHEA METABOLITE</b> - 25 mg, 100 caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
01479	<b>7-KETO® DHEA METABOLITE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
01640	<b>DHA (VEGETARIAN SOURCED)</b> - 200 mg, 30 veg. softgels Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00607	<b>DHEA</b> - 25 mg, 100 tablets (dissolve in mouth) Buy 4 bottles, price each	14.00 11.75	10.50 8.81		
01478	<b>DHEA COMPLETE</b> - 60 veg. caps Buy 4 bottles, price each	48.00 43.20	36.00 32.40		
00335	<b>DHEA</b> - 25 mg, 100 caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
00454	<b>DHEA</b> - 15 mg, 100 caps Buy 4 bottles, price each	14.00 12.00	10.50 9.00		
00882	<b>DHEA</b> - 50 mg, 60 caps Buy 4 bottles, price each	19.00 17.00	14.25 12.75		
00883	<b>DHEA</b> - 100 mg, 60 caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01358	<b>DIGEST RC</b> - 30 tablets Buy 4 boxes, price each	19.95 17.00	14.96 12.75		
01272	<b>DIGESTIVE ENZYMES (ENHANCED SUPER)</b> - 100 veg. caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
00034	<b>D,L-PHENYLALANINE CAPSULES</b> - 500 mg, 100 caps Buy 4 bottles, price each	18.75 16.00	14.06 12.00		
00257	<b>DMAE BITARTRATE</b> - 150 mg, 200 caps Buy 4 bottles, price each	14.00 10.50	10.50 7.88		
00059	<b>DMG</b> - 125 mg, 60 tablets Buy 4 boxes, price each	22.80 21.00	17.10 15.75		
01570	<b>DNA PROTECTION FORMULA</b> - 60 veg. caps Buy 4 bottles, price each	34.00 32.00	25.50 24.00		
00544	<b>DOG MIX</b> - 100 grams powder Buy 4 jars, price each	19.50 16.00	14.63 12.00		
00321	<b>DR. PROCTOR'S ADVANCED HAIR FORMULA</b> - 2 oz Buy 4 bottles, price each	39.95 32.00	29.96 24.00		
00320	<b>DR. PROCTOR'S HAIR FORMULA SHAMPOO</b> - 8 oz Buy 4 bottles, price each	24.95 22.00	18.71 16.50		
00899	<b>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE</b> - 2.4 oz Buy 4 jars, price each	39.95 38.95	29.96 29.21		
00240	<b>DUAL-C</b> - 90 caps Buy 4 bottles, price each	12.00 10.50	9.00 7.88		
<b>E</b>					
00388	<b>ECHINACEA EXTRACT</b> - 250 mg, 60 caps Buy 4 bottles, price each	\$14.35 12.50	\$10.76 9.38		
01395	<b>EDTA</b> - 500 mg, 60 caps	9.98	7.49		
01321	<b>ELASTIN &amp; COLLAGEN BODY FIRING LOTION</b> - 8 fl. oz.	10.00	7.50		
01498	<b>ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™</b> - 60 softgels Buy 4 bottles, price each	56.00 52.00	42.00 39.00		
00997	<b>ENDOTHELIAL DEFENSE™ w/GLISODIN®</b> - 60 veg. caps Buy 4 bottles, price each	52.00 46.00	39.00 34.50		
00625	<b>EPA/DHA (MEGA)</b> - 120 softgels Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
01042	<b>EUROPEAN LEG SOLUTION DIOSMIN 95</b> - 600 mg, 30 veg. tabs Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01706	<b>EXTRAORDINARY ENZYMES</b> - 60 caps Buy 4 bottles, price each	26.00 24.00	19.50 18.00		

**SUB-TOTAL OF COLUMN 7**

No.		Retail Each	Member Each	Qty	Total
01514	<b>EYE PRESSURE SUPPORT w/MIRTOGENOL®</b> - 30 veg. caps Buy 4 bottles, price each	\$38.00 34.00	\$28.50 25.50		
<b>F</b>					
01054	<b>FACE MASTER® PLATINUM</b>	\$199.00	\$199.00		
00965	<b>FAST-ACTING JOINT FORMULA</b> - 30 caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
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 MACAPAUSE®</b> - 120 veg. caps	34.99	26.24		
01311	<b>FERNBLOCK® w/SENDARA®(ENHANCED)</b> - 30 veg. caps Buy 4 bottles, price each	39.00 35.00	29.25 26.25		
00229	<b>FIBER FOOD CAPS</b> - 200 caps Buy 4 bottles, price each Buy 10 bottles, price each	15.00 12.50 11.90	11.25 9.38 8.93		
00718	<b>FIBRINOGEN RESIST™</b> - 30 veg. caps Buy 4 bottles, price each	49.00 44.00	36.75 33.00		
00873	<b>FLAXSEED POWDER (HI-LIGNAN® NUTRI-FLAX®)</b> - 16 oz powder	9.95	7.46		
01384	<b>FLORADIX® IRON &amp; HERBS</b> - 17 fl. oz	43.99	35.19		
01382	<b>FLORAVITAL® IRON &amp; HERBS</b> - 17 fl. oz	43.99	35.19		
01439	<b>FOLATE (OPTIMIZED) (L-METHYLFOLATE)</b> 1000 mcg - 100 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
00347	<b>FOLIC ACID + B12 CAPSULES</b> - 200 caps Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
00300	<b>FORSKOLIN</b> - 10 mg, 60 caps Buy 4 bottles, price each	15.00 12.50	11.25 9.38		
01513	<b>FUCOIDAN w/MARITECH® 926 (OPTIMIZED)</b> - 60 veg. caps Buy 4 bottles, price each	36.00 33.00	27.00 24.75		
00993	<b>FUCOXANTHIN-SLIM™</b> - 90 softgels Buy 4 bottles, price each	44.00 39.00	33.00 29.25		
<b>G</b>					
00127	<b>GABA POWDER</b> - 100 grams Buy 4 bottles, price each	\$23.75 22.50	\$17.81 16.88		
00559	<b>GAMMA E TOCOPHEROL/TOCOTRIENOLS</b> - 60 softgels Buy 4 bottles, price each	42.00 37.00	31.50 27.75		
00759	<b>GAMMA E TOCOPHEROL W/SESAME LIGNANS</b> - 60 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01394	<b>(OPTIMIZED) GARLIC</b> - 200 veg. caps Buy 4 bottles, price each	24.95 21.00	18.71 15.75		
00117	<b>GELATIN CAPSULES</b> - 1000 empty caps size "00" Buy 4 bags, price each	19.00 18.00	14.25 13.50		
01301	<b>GH PITUITARY SUPPORT DAY FORMULA</b> - 120 vegetarian tabs Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01302	<b>GH PITUITARY SUPPORT NIGHT FORMULA</b> - 120 veg. caps Buy 4 bottles, price each	25.00 22.50	18.75 16.88		
01228	<b>GINGER FORCE</b> - 60 softgels	29.95	22.46		
00778	<b>GINKGO BILOBA CERTIFIED EXTRACT™</b> - 120 mg, 365 caps Buy 2 bottles, price each	46.00 43.50	34.50 32.63		
00504	<b>GINKGO EXTRACT (SUPER)</b> - 120 mg, 100 caps Buy 4 bottles, price each	29.00 26.50	21.75 19.88		
01032	<b>(PANAX RED) GINSENG</b> - 60 veg. caps	29.99	22.49		
00756	<b>GLA WITH SESAME LIGNANS (MEGA)</b> - 60 softgels Buy 4 bottles, price each	19.50 18.00	14.63 13.50		
00345	<b>(L) GLUTAMINE CAPSULES</b> - 500 mg, 100 caps Buy 4 bottles, price each	14.95 13.50	11.21 10.13		
00141	<b>(L)-GLUTAMINE POWDER</b> - 100 grams Buy 4 bottles, price each	22.00 20.00	16.50 15.00		

**SUB-TOTAL OF COLUMN 8**

# Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
00522	<b>GLUCOSAMINE/CHONDROITIN CAPSULES</b> - 100 caps Buy 4 bottles, price each	\$38.00 32.00	\$28.50 24.00		
00512	<b>GLUCOFIT™</b> - 100 softgels Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
00113	<b>GLUTATHIONE, CYSTEINE &amp; C</b> - 750 mg, 100 caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00314	<b>L-GLUTATHIONE (MEGA)</b> - 250 mg, 60 caps Buy 4 bottles, price each	39.64 35.68	29.73 26.76		
00795	<b>GLYCINE</b> - 1000 mg, 100 caps Buy 4 bottles, price each	12.00 10.80	9.00 8.10		
00128	<b>GLYCINE POWDER</b> - 300 grams Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01091	<b>GRAPE EXTRACT w/RESVERATROL (WHOLE)</b> - 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01411	<b>GRAPE SEED EXTRACT w/RESVERATROL &amp; PTEROSTILBENE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01604	<b>GREEN COFFEE EXTRACT COFFEEGENIC™</b> - 200 mg, 90 veg. caps Buy 4 bottles, price each	25.00 22.00	18.75 16.50		
01620	<b>GREEN COFFEE EXTRACT COFFEEGENIC™</b> - 400 mg, 90 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
00953	<b>GREEN TEA EXTRACT (MEGA)</b> - lightly caffeinated - 100 veg. caps Buy 4 bottles, price each	28.00 26.50	21.00 19.88		
00954	<b>GREEN TEA EXTRACT (MEGA)</b> - decaffeinated - 100 veg. caps Buy 4 bottles, price each	28.00 26.50	21.00 19.88		

## H

01074	<b>5 HTP</b> - 100 mg, 60 caps	\$27.95	\$20.96		
00010	<b>HAIR CONDITIONER</b> - 16 oz Buy 4 bottles, price each	6.00 4.50	4.50 3.38		
00230	<b>HCA</b> - 90 caps Buy 4 bottles, price each	18.00 15.50	13.50 11.63		
01629	<b>HEAROS™ EAR PLUGS</b> - 1 pack - regular size	14.00	10.50		
01635	<b>HEAROS™ EAR PLUGS</b> - 1 pack - small size	14.00	10.50		
01393	<b>HEPATOPRO</b> - 900 mg, 60 softgels Buy 4 bottles, price each	50.00 46.00	37.50 34.50		
01435	<b>HOMOCYSTEINE RESIST</b> - 100 caps Buy 4 bottles, price each	24.00 21.60	18.00 16.20		
01527	<b>HUPERZINE A</b> - 200 mcg, 60 veg caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00661	<b>HYDRODERM®</b> - 1 oz Buy 2 bottles, price each	79.95 65.33	59.96 49.00		

## I

*01060	<b>i26® HYPERIMMUNE EGG</b> - 140 grams powder	\$49.99	\$42.00		
*01319	<b>i26® HYPERIMMUNE EGG</b> - 135 capsules	31.99	25.59		
*01318	<b>i26® HYPERIMMUNE EGG CHEWABLES</b> - (vanilla) 45 tablets	31.99	25.59		
01065	<b>IDEAL BOWEL SUPPORT 299V</b> - 30 veg. caps	21.95	16.46		
00955	<b>IMMUNE PROTECT W/PARACTIN®</b> - 30 veg. caps Buy 4 bottles, price each	29.50 26.55	22.13 19.91		
01049	<b>INNERPOWER™</b> - 555 grams powder	42.00	31.50		
00155	<b>INOSINE</b> - 500 mg, 60 caps Buy 4 bottles, price each	22.95 21.00	17.21 15.75		
00410	<b>INOSITOL CAPSULES</b> - 1000 mg, 360 caps Buy 4 bottles, price each	48.00 43.75	36.00 32.81		
00108	<b>INOSITOL POWDER</b> - 100 grams Buy 4 bottles, price each	18.00 16.88	13.50 12.66		

**SUB-TOTAL OF COLUMN 9**

No.		Retail Each	Member Each	Qty	Total
01292	<b>INTEGRA-LEAN® IRVINGIA</b> - 150 mg, 60 veg. caps Buy 4 bottles, price each	\$28.00 24.00	\$21.00 18.00		
01002	<b>IODORAL®</b> - 180 tabs	50.00	37.50		
00563	<b>IRON PROTEIN PLUS</b> - 300 mg, 100 caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01492	<b>IRVINGIA W/PHASE 3™</b> - 120 veg. caps <b>CALORIE CONTROL COMPLEX (OPTIMIZED)</b> Buy 4 bottles, price each	56.00 48.00	42.00 36.00		

## J, K

00056	<b>JARRO-DOPHILUS EPS™</b> - 60 veg. caps	\$21.95	\$16.46		
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 Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01600	<b>KRILL HEALTHY JOINT FORMULA</b> - 30 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01050	<b>(NKO) KRILL OIL</b> - 60 softgels	33.95	25.46		
00316	<b>KYOLIC® GARLIC FORMULA 102</b> - 200 caps Buy 4 bottles, price each	23.95 20.50	17.96 15.38		
00214	<b>KYOLIC® GARLIC FORMULA 105</b> - 200 caps Buy 4 bottles, price each	22.95 18.25	17.21 13.69		
00789	<b>KYOLIC® RESERVE</b> - 600 mg, 120 caps Buy 4 bottles, price each	24.75 21.45	18.56 16.09		

## L

00513	<b>LACTOFERRIN (APOLACTOFERRIN) CAPS</b> - 60 caps Buy 4 bottles, price each	\$44.00 40.00	\$33.00 30.00		
00017	<b>LAVILIN UNDERARM DEODORANT</b> - 12.5 grams cream Buy 4 jars, price each	16.99 15.75	12.74 11.81		
00020	<b>LECITHIN</b> - 16 oz. granules Buy 4 jars, price each	15.00 12.50	11.25 9.38		
01755	<b>LIFE EXTENSION MIX™</b> - 315 tablets Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01757	<b>LIFE EXTENSION MIX™ W/EXTRA NIACIN</b> - 315 tablets Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01754	<b>LIFE EXTENSION MIX™</b> - 490 caps Buy 4 bottles, price each Buy 10 bottles, price each	110.00 98.00 85.00	82.50 73.50 63.75		
01756	<b>LIFE EXTENSION MIX™ POWDER</b> - 14.81 oz Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 72.00	73.50 64.50 54.00		
01765	<b>LIFE EXTENSION MIX™</b> - 315 tablets w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01767	<b>LIFE EXTENSION MIX™ W/EXTRA NIACIN</b> 315 tablets w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01764	<b>LIFE EXTENSION MIX™</b> - 490 caps w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	110.00 98.00 85.00	82.50 73.50 63.75		
01766	<b>LIFE EXTENSION MIX™ POWDER</b> - 14.81 oz w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 72.00	73.50 64.50 54.00		

**SUB-TOTAL OF COLUMN 10**

No.		Retail Each	Member Each	Qty	Total
00263	<b>LIFE FLORA™</b> - 300 mg, 120 caps Buy 4 bottles, price each	\$20.50 18.75	\$15.38 14.06		
01608	<b>LIVER EFFICIENCY FORMULA</b> - 30 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01227	<b>LIVER FORCE</b> - 60 veg. caps	34.95	26.21		
01639	<b>5-LOX INHIBITOR W/APRESFLEX™</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01013	<b>L-LYSINE</b> - 620 mg, 100 caps Buy 4 bottles, price each	9.00 8.00	6.75 6.00		
00129	<b>L-LYSINE POWDER</b> - 300 grams Buy 4 bottles, price each	16.00 13.75	12.00 10.31		
01470	<b>LURALEAN® CAPS SPECIAL PROPOLMANNAN</b> <b>PARTICLE SIZE</b> - 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		
00704	<b>MAITAKE™ SX-FRACTION</b> - 90 veg. tablets	49.95	37.46		
00547	<b>MELATONIN</b> - 300 mcg, 100 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		
01086	<b>MELATONIN</b> - 3 mg, 60 time-release veg. caps Buy 4 bottles, price each	10.50 9.38	7.88 7.04		
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 lozenges Buy 4 bottles, price each	8.00 6.88	6.00 5.16		
01087	<b>MELATONIN TIME RELEASE</b> - 300 mcg, 100 veg. caps Buy 4 bottles, price each	6.25 5.63	4.69 4.22		
01088	<b>MELATONIN TIME RELEASE</b> - 750 mcg, 60 veg. caps Buy 4 bottles, price each	5.75 5.00	4.31 3.75		
01009	<b>MEMORY UPGRADE™</b> - 600 grams powder	26.95	20.21		
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-EZZE™ (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		

**SUB-TOTAL OF COLUMN 11**

No.		Retail Each	Member Each	Qty	Total
00623	<b>MINERAL FORMULA FOR MEN</b> - 100 caps Buy 4 bottles, price each Buy 12 bottles, price each	\$15.00 12.50 10.83	\$11.25 9.38 8.13		
00624	<b>MINERAL FORMULA FOR WOMEN</b> - 100 caps Buy 4 bottles, price each Buy 12 bottles, price each	15.00 12.50 10.83	11.25 9.38 8.13		
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		
01568	<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		
<b>N</b>					
00215	<b>N-ACETYL-L-CYSTEINE</b> - 600 mg, 60 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		
00712	<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 veg. 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		

**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
<b>N CONTINUED</b>					
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		
01035	<b>NUTRIM</b> - 225 grams powder	25.95	19.46		
<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	18.00 16.00	13.50 12.00		
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> - 120 enteric coated softgels Buy 4 bottles, price each Buy 10 bottles, price each	34.00 31.00 28.00	25.50 23.25 21.00		
01619	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL)</b> Buy 4 bottles, price each Buy 10 bottles, price each	32.00 28.00 24.90	24.00 21.00 18.68		
01632	<b>OMEGA-3 LEMON WHIRL</b> - 16 oz bottle Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01633	<b>OMEGA-3 TROPICAL WHIRL</b> - 16 oz bottle Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01701	<b>ONE-PER-DAY</b> - 60 veg. tablets Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01328	<b>ONLY TRACE MINERALS</b> - 90 caps Buy 4 bottles, price each	15.00 12.50	11.25 9.38		
00915	<b>OPTIZINC®</b> - 30 mg, 90 veg. caps Buy 4 bottles, price each	5.95 5.00	4.46 3.75		
01070	<b>ORGANIC TOTAL BODY CLEANSE™</b> - 14-day supply	34.99	26.24		
<b>P</b>					
00107	<b>PABA CAPS</b> - 500 mg, 100 caps Buy 4 bottles, price each	\$15.42 13.59	\$11.57 10.19		
00073	<b>PANCREATIN</b> - 500 mg, 50 caps Buy 4 bottles, price each	13.22 12.12	9.92 9.09		
01323	<b>PEAK ATP® WITH GLYCO-CARN®</b> - 60 veg. caps Buy 4 bottles, price each	59.00 56.00	44.25 42.00		
00342	<b>PECTA SOL-C® MODIFIED CITRUS PECTIN</b> - 454 grams powder Buy 4 jars, price each	99.95 95.70	74.96 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 Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
00368	<b>PHOSPHATIDYLSERINE CAPS</b> - 100 mg, 100 caps Buy 4 bottles, price each	54.00 48.00	40.50 36.00		
01390	<b>PHOSPHOMEGA®</b> - 60 softgels	39.95	26.96		

**SUB-TOTAL OF COLUMN 13**

No.		Retail Each	Member Each	Qty	Total
00561	<b>POLICOSANOL</b> - 10 mg, 60 tablets Buy 6 bottles, price each	\$24.00 18.00	\$18.00 13.50		
01423	<b>POMEGRANATE™ (FULL-SPECTRUM)</b> - 30 softgels Buy 4 bottles, price each	24.00 21.00	18.00 15.75		
00956	<b>POMEGRANATE EXTRACT</b> - 30 veg. caps Buy 4 bottles, price each	19.50 17.55	14.63 13.16		
00957	<b>POMEGRANATE JUICE CONCENTRATE</b> - 16 oz. liquid Buy 4 bottles, price each	25.95 24.00	19.46 18.00		
00577	<b>POTASSIUM IODIDE</b> - 1 box, 14 tablets Buy 4 boxes, price each	6.95 5.25	5.21 3.94		
01500	<b>PQQ CAPS W/BIOPQQ™</b> - 10 mg, 30 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01647	<b>PQQ CAPS W/BIOPQQ™</b> - 20 mg, 30 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00302	<b>PREGNENOLONE</b> - 50 mg, 100 caps Buy 4 bottles, price each	26.00 22.00	19.50 16.50		
00700	<b>PREGNENOLONE</b> - 100 mg, 100 caps Buy 4 bottles, price each	26.00 22.50	19.50 16.88		
***01373	<b>PRELOX® NATURAL SEX FOR MEN®</b> - 60 tablets Buy 4 bottles, price each	52.00 48.00	39.00 36.00		
00571	<b>PRIMAL DEFENSE™</b> - 90 caplets Buy 4 bottles, price each	49.95 48.50	37.46 36.38		
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		
01322	<b>PROBIOTIC COLON™</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		
01020	<b>PROGREENS®</b> - 15 stick pack	22.50	16.88		
01072	<b>PRO-M INTERNAL DEODORIZER</b> - 500 mg, 100 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01695	<b>PROSTATE FORMULA W/APRESFLEX™ STAND. LIGNANS (ULTRA NAT)</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		
01642	<b>PROTEIN - VANILLA</b> - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01643	<b>PROTEIN - CHOCOLATE</b> - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01644	<b>PROTEIN - NATURAL</b> - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01645	<b>PROTEIN - BERRY</b> - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01508	<b>PTEROPURE™</b> - 50 mg Pterostilbene 60 veg. caps Buy 4 bottles, price each	32.00 30.00	24.00 22.50		
01075	<b>PURE PLANT PROTEIN</b> - Natural Vanilla 450 grams powder Buy 4 jars, price each	36.00 33.00	27.00 24.75		
01209	<b>PUMPKIN SEED EXTRACT (WATER-SOLUBLE)</b> - 60 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01210	<b>PUMPKIN SEED EXT w/SOY ISOFLAVONES (WATER-SOLUBLE)</b> - 60 veg. caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01637	<b>PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT</b> -100 mg, 60 veg. caps Buy 4 bottles, price each	64.00 60.00	48.00 45.00		
01217	<b>PYRIDOXAL 5'-PHOSPHATE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	22.00 19.80	16.50 14.85		

**SUB-TOTAL OF COLUMN 14**

No.		Retail Each	Member Each	Qty	Total
<b>Q, R</b>					
01309	<b>QUERCETIN (OPTIMIZED)</b> - 250 mg, 60 veg. caps	\$18.00	\$13.50		
	Buy 4 bottles, price each	17.00	12.75		
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 jars, 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 FIRING SERUM</b> - 1.7 oz	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		
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		
00706	<b>REJUVENIGHT® w/PROGESTERONE (ULTRA)</b> - 2 oz	42.00	31.50		
	Buy 4 jars, price each	38.00	28.50		
01413	<b>RESVERATROL W/PTEROSTILBENE</b> - 20 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01410	<b>RESVERATROL W/PTEROSTILBENE</b> - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01430	<b>RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED)</b> - 250 mg, 60 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	41.33	31.00		
00889	<b>RHODIOLA EXTRACT</b> - 250 mg, 60 veg. caps	11.75	8.81		
	Buy 4 bottles, price each	10.58	7.94		
00972	<b>(D) RIBOSE POWDER</b> - 150 grams	27.50	20.63		
	Buy 4 jars, price each	24.75	18.56		
01473	<b>(D) RIBOSE TABLETS</b> - 100 veg. tabs	32.00	24.00		
	Buy 4 bottles, price each	28.00	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		
01530	<b>RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP</b> - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	<b>RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP</b> - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01705	<b>RICH REWARDS™ LENTIL VEGETABLE SOUP</b> - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01208	<b>R-LIPOIC ACID (SUPER)</b> - 300 mg, 60 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	45.00	33.75		
00070	<b>RNA CAPSULES</b> - 500 mg, 100 caps	17.95	13.46		
	Buy 4 bottles, price each	16.16	12.12		

**SUB-TOTAL OF COLUMN 15**

No.		Retail Each	Member Each	Qty	Total
00917	<b>ROSMARINIC ACID EXTRACT</b> - 60 veg. caps	\$59.00	\$44.25		
	Buy 4 bottles, price each	53.00	39.75		
<b>S</b>					
01067	<b>SACCHAROMYCES BOULARDII + MOS</b> - 90 veg. caps	\$21.95	\$16.46		
01432	<b>SAFFRON w/SATIREAL (OPTIMIZED)</b> - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
*00573	<b>SAMBU® GUARD</b> - 175 ml	17.79	14.23		
00358	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 200 mg, 20 enteric coated tablets	16.00	12.00		
	Buy 8 boxes, price each	14.00	10.50		
00453	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 200 mg, 50 enteric coated tablets	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00557	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 20 enteric coated tablets	28.00	21.00		
	Buy 6 boxes, price each	24.00	18.00		
01055	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 50 enteric coated tablets	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01543	<b>SEA-IODINE™</b> - 1000 mcg, 60 caps	8.00	6.00		
	Buy 4 bottles, price each	7.20	5.40		
00046	<b>SELENIUM</b> - 2 oz dropper bottle	9.95	7.46		
	Buy 4 bottles, price each	9.45	7.09		
00567	<b>SE-METHYL L-SELENOCYSTEINE</b> - 200 mcg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
00318	<b>SERRAFLAZYME</b> - 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00011	<b>SHAMPOO</b> - 16 fl oz	6.00	4.50		
	Buy 4 bottles, price each	4.75	3.56		
00284	<b>SHARK LIVER OIL (NORWEGIAN)</b> - 1000 mg, 30 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01684	<b>SILYMARIN</b> - 100 mg, 50 veg. caps	9.25	6.94		
	Buy 4 bottles, price each	8.25	6.19		
01502	<b>SKIN RESTORING PHYTOCERAMIDES w/LIPOHEAT™</b> - 30 liquid caps	25.00	18.75		
	Buy 4 bottles, price each	23.00	17.25		
00961	<b>SODZYME® w/GLISODIN® AND WOLFBERRY</b> - 90 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
00657	<b>SOLARSHIELD SUNGLASSES</b> - 1 pair smoke color	12.99	9.74		
	Buy 2 pairs, price each	11.50	8.63		
01097	<b>SOY EXTRACT (ULTRA)</b> - 150 veg. caps	87.00	65.25		
	Buy 4 bottles, price each	78.00	58.50		
00286	<b>SOY PROTEIN CONCENTRATE</b> - 16 oz of powder	16.00	12.00		
	Buy 4 jars, price each	14.00	10.50		
01099	<b>STABILIMUM® 200</b> - 30 caps	30.00	22.50		
00432	<b>STEVIA EXTRACT</b> - 100 packets, 1 gram each	9.95	7.46		
	Buy 4 boxes, price each	9.00	6.75		
01396	<b>ST. JOHN'S WORT EXTRACT</b> - 300 mg, 60 veg. caps	10.98	8.24		
	Buy 4 bottles, price each	10.00	7.50		
00327	<b>ST. JOHN'S WORT EXTRACT (PLANETARY)</b> - 600 mg, 60 tablets	16.75	12.56		
	Buy 4 bottles, price each	13.85	10.39		
01476	<b>STRONTIUM</b> - 750 mg, 90 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00747	<b>SUNGLASSES (OVERCAST POLARIZED)</b> - gray color, large	27.00	20.25		
	Buy 2 pairs, price each	21.00	15.75		

**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>S CONTINUED</b>					
00748	<b>SUNGLASSES (OVERCAST POLARIZED)</b> - gray color, medium 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		
01381	<b>SUPERCritical OMEGA 7™</b> - 60 softgels caps	56.95	42.71		
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		
00674	<b>SYTRINOL™</b> - 60 softgels Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
<b>T</b>					
<b>TAL-SHI™ COSMETICS</b> • For information please call 1-800-544-4440 or visit www.LifeExtension.com					
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		
00555	<b>(L) THEANINE</b> - 100 mg, 60 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		
00224	<b>THYMIC IMMUNE FACTORS</b> - 100 caps Buy 4 bottles, price each	18.00 14.00	13.50 10.50		
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		
00359	<b>TMG</b> - 500 mg, 180 tablets Buy 4 bottles, price each	18.00 15.50	13.50 11.63		
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		
01469	<b>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL</b> -60 veg. caps Buy 4 bottles, price each	32.00 29.60	24.00 22.20		
01386	<b>TRUFIBER®</b> - 180 grams	32.95	24.71		
01389	<b>TRUFLORA PROBIOTICS &amp; ENZYMES</b> - 32 veg. caps	42.95	32.21		
01716	<b>TWO-PER-DAY</b> - 60 tablets Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
01715	<b>TWO-PER-DAY</b> - 120 tablets Buy 4 bottles, price each	20.00 18.00	15.00 13.50		

**SUB-TOTAL OF COLUMN 17**

No.		Retail Each	Member Each	Qty	Total
01714	<b>TWO-PER-DAY</b> - 120 caps Buy 4 bottles, price each	\$22.00 20.00	\$16.50 15.00		
00326	<b>L-TYROSINE</b> - 500 mg, 100 tablets Buy 4 bottles, price each	12.98 11.81	9.74 8.86		
<b>U</b>					
* 00310	<b>UDO'S OIL 3-6-9 BLEND</b> - 17 fl oz	\$27.79	\$22.23		
* 00311	<b>UDO'S 3-6-9 OIL BLEND</b> - 180 caps	34.79	27.83		
* 00322	<b>UDO'S CHOICE® WHOLESOME FAST FOOD</b> - 16 oz bottle	27.99	22.39		
<b>V</b>					
00213	<b>VANADYL SULFATE</b> - 7.5 mg, 100 tablets Buy 4 bottles, price each	\$15.00 12.50	\$11.25 9.38		
00408	<b>VENOTONE</b> - 60 caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
01327	<b>VINPOCETINE</b> - 10 mg, 100 tablets Buy 4 bottles, price each	18.00 14.00	13.50 10.50		
01033	<b>VISION OPTIMIZER</b> - 90 caps	29.95	22.46		
01219	<b>VITAMIN A NUTRISORB</b> - 0.6 fl oz	27.00	20.25		
00091	<b>VITAMIN B1 CAPS</b> - 500 mg, 100 caps Buy 4 bottles, price each	18.73 17.00	14.05 12.75		
00093	<b>VITAMIN B2 CAPS</b> - 100 mg, 100 caps Buy 4 bottles, price each	14.32 13.00	10.74 9.75		
00096	<b>VITAMIN B3 NIACIN</b> - 1000 mg, 100 caps Buy 4 bottles, price each	12.75 12.00	9.56 9.00		
00372	<b>VITAMIN B3 NIACIN</b> - 500 mg, 100 caps Buy 4 bottles, price each	7.65 6.65	5.74 4.99		
00098	<b>VITAMIN B5</b> - 500 mg, 100 caps (Pantothenic Acid) Buy 4 bottles, price each	10.50 9.38	7.88 7.04		
00556	<b>VITAMIN B6</b> - 250 mg, 100 caps Buy 4 bottles, price each	12.50 11.00	9.38 8.25		
00361	<b>VITAMIN B12</b> - 500 mcg, 100 lozenges Buy 4 bottles, price each	8.75 7.25	6.56 5.44		
01634	<b>VITAMIN C w/ DIHYDROQUERCETIN</b> - 1000 mg, 60 tablets Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
00927	<b>VITAMIN C w/ DIHYDROQUERCETIN</b> - 1000 mg, 250 tablets Buy 4 bottles, price each	25.50 23.25	19.13 17.44		
00084	<b>VITAMIN C (BUFFERED) POWDER</b> - 454.6 grams Buy 4 bottles, price each	23.95 22.00	17.96 16.50		
00864	<b>VITAMIN D3</b> - 2000 IU, 1 fl oz Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01751	<b>VITAMIN D3</b> - 1000 IU, 250 softgels Buy 4 bottles, price each	12.50 11.25	9.38 8.44		
01713	<b>VITAMIN D3</b> - 5000 IU, 60 softgels Buy 4 bottles, price each	11.00 9.90	8.25 7.43		
01718	<b>VITAMIN D3</b> - 7000 IU, 60 softgels Buy 4 bottles, price each	14.00 12.60	10.50 9.45		
01573	<b>VITAMIN D3 w/SEA-IODINE™</b> - 5000 IU, 60 caps Buy 4 bottles, price each	14.00 12.50	10.50 9.38		
01572	<b>VITAMINS D AND K w/SEA-IODINE™</b> - 60 caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01663	<b>VITAMIN E (PURE NATURAL)</b> - 400 IU, 100 veg. caps Buy 4 bottles, price each Buy 10 bottles, price each	30.00 28.00 26.00	22.50 21.00 19.50		

**SUB-TOTAL OF COLUMN 18**

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No.		Retail Each	Member Each	Qty	Total
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>					
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		
01029	<b>ZYFLAMEND® TINY CAPS®</b> - 180 softgels	31.95	23.96		

**SUB-TOTAL OF COLUMN 19**

\* 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.

\*Member pricing not valid on this item.

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PHONE  FAX

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EXP. DATE

SIGNATURE

### SHIP TO ADDRESS

NAME  E-MAIL

ADDRESS

CITY/STATE/ZIP-POSTAL CODE  COUNTRY

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SIGNATURE

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33848	YOUR BEST INVESTMENT SECRETS TO A HEALTHY BODY AND MIND • by Edwin Lee, MD	2012	\$24.95	\$18.71		
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33842	HEART ATTACK PROOF • by Michael Ozner, MD	2012	\$19.95	\$14.96		
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33836	WEIGHT LOSS GUIDE • by Steven V. Joyal, MD and William Faloon (hardcover) (3rd Edition)	2010	\$29.95	\$8.99		
33816	FDA: FAILURE, DECEPTION, ABUSE • by Life Extension Foundation	2010	\$20.00	\$15.00		
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33811	THE GREAT AMERICAN HEART HOAX • by Michael Ozner, MD, FACC, FAHA	2009	\$24.95	\$17.47		
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33599	YOUNGER YOU • by Eric Braverman, MD	—	\$24.95	\$15.75		
33600	DISEASE PREVENTION AND TREATMENT, EXPANDED FOURTH EDITION (hardcover)	2003	\$49.95	\$37.46		
	Price per book when 4 books purchased	—	\$44.00	\$33.00		
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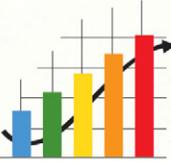
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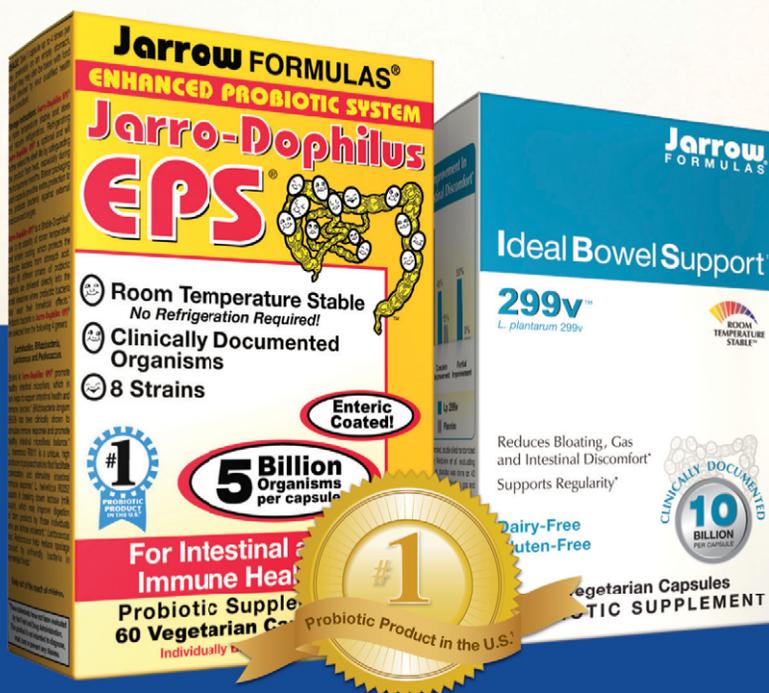
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# ANTI-AGING EFFECTS OF **PYCNOGENOL®**

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

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

**MEMBRANE FUNCTION:** *Pycnogenol®* promotes the integrity and normal characteristics of cell membranes.<sup>1-4</sup>

**DNA FUNCTION:** *Pycnogenol®* helps support normal DNA function through antioxidant activity and possibly other mechanisms.<sup>5-8</sup>

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

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

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

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

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

<b>Pycnogenol® dried French Maritime pine (<i>Pinus pinaster</i>) extract (bark)[std. to 65% procyanidins (65 mg)]</b>	<b>100 mg</b>
<b>Vitamin C (as ascorbyl palmitate)</b>	<b>4 mg</b>



Item # 01637

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*Pycnogenol®* is a registered trademark of Horphag Research Ltd. Use of this product may be protected by one or more U.S. patents and other international patents. Supported by over 40 years of research.

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# Optimized Cran-Max<sup>®</sup> with UTIRose<sup>™</sup>

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The anatomy of the female **urinary tract** differs greatly from men, resulting in the need for additional nutritional support for women.

A wealth of published studies indicates that **cranberry polyphenols** may help to support a healthy urinary tract.<sup>1-5</sup>

Of particular importance is the flavonoid content of the cranberry, including **anthocyanins** and **proanthocyanidins**. These natural compounds exert powerful antioxidant effects that can reduce oxidative stress.

Recent clinical data suggest that the proanthocyanidins found only in cranberries also possess **unique** molecular features that specifically promote urinary system health.<sup>6-8</sup>

### **A Synergistic Compound Available Only in Europe—Until Now**

In a significant advance, **Life Extension<sup>®</sup>** has identified a unique compound available overseas but little-known in the United States that provides a **synergistic complement** to the whole cranberry's phytonutrient profile.

**UTIRose<sup>™</sup>** is derived from *Hibiscus sabdariffa*, a species native to Europe, Asia, and Africa. Scientific analysis has shown that this species' flower and calyx (the green floral envelope surrounding the blossom) are rich in active polyphenols, including **flavonoids**, **sambubiosides**, and **proanthocyanidins**.

**Life Extension<sup>®</sup>** uses a unique, patented process in the manufacture of Optimized Cran-Max<sup>®</sup> with UTIRose<sup>™</sup>. Each daily serving supplies the complete phenolic profile of the whole cranberry *plus* hibiscus polyphenols in a standardized, highly absorbable, *concentrated* form. Two capsules of Optimized Cran-Max<sup>®</sup> with UTIRose<sup>™</sup> contain:

<b>UTIRose<sup>™</sup> (<i>Hibiscus sabdariffa</i>) extract (flower, calyx)</b>	<b>200 mg</b>
<b>Cran-Max<sup>®</sup> Cranberry infused whole fruit extract</b>	<b>500 mg</b>

The suggested daily amount of Cran-Max<sup>®</sup> in this formula alone (**500 mg**) was demonstrated to provide the **anthocyanin** equivalent of **seven 8 oz glasses** of Ocean Spray<sup>®</sup> Cranberry Juice Cocktail.<sup>9</sup>

The price for one bottle of **Optimized Cran-Max<sup>®</sup> with UTIRose<sup>™</sup>** containing 60 vegetarian capsules is \$18. If a member buys four bottles, the price is reduced to **\$12** per bottle.

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Item # 01424



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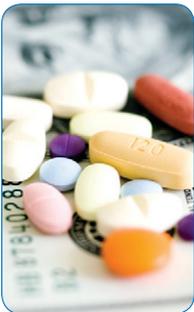
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## WHAT'S INSIDE

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# LifeExtension® Magazine



### 7 FORMER COMMISSIONER CITES FDA FAILURE

Medical innovation has been suffocated by **FDA's** flawed drug approval process. An increasing number of scholarly individuals recognize the lethal impact when lifesaving therapies are **delayed**, including a former **FDA Commissioner**.



### 24 FIGHT AGE-RELATED WEIGHT GAIN

**Weight gain** occurs as we age partly because of a decline in **resting metabolic rate**. In placebo-controlled studies, scientists have verified that **7-Keto DHEA** restores *resting metabolic rate* and safely induces **fat loss**.



### 36 WHY LYCOPENE HAS BECOME SO POPULAR

**Lycopene** is a plant extract that slashes disease risk and improves cellular communication. Health conscious people increasingly understand that cooked tomato products or supplements are the only way to ensure protective **lycopene blood levels**.



### 50 REVERSING MALE INFERTILITY

As male infertility increases at an alarming rate, researchers have identified specific nutrients that improve male fertility *without* drugs or expensive IVF treatments.



### 62 THE PSA CONTROVERSY-Part I

The federal government has chosen to ignore the critical role PSA testing plays in prostate cancer prevention and treatment by advising aging men to avoid **PSA** screening. Oncologist Stephen B. Strum, MD, FACP, provides the first of three rebuttals to the government's absurd position that will cause tens of thousands of needless deaths.



### 74 THE PSA CONTROVERSY-Part II

This real-world case history shows how PSA screening can be used as a tool to diagnose and treat **prostate cancer** without resorting to the inappropriate use of side effect-laden therapies.