

**METFORMIN: THE OVERLOOKED CANCER DRUG**

# LifeExtension®

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

November 2012

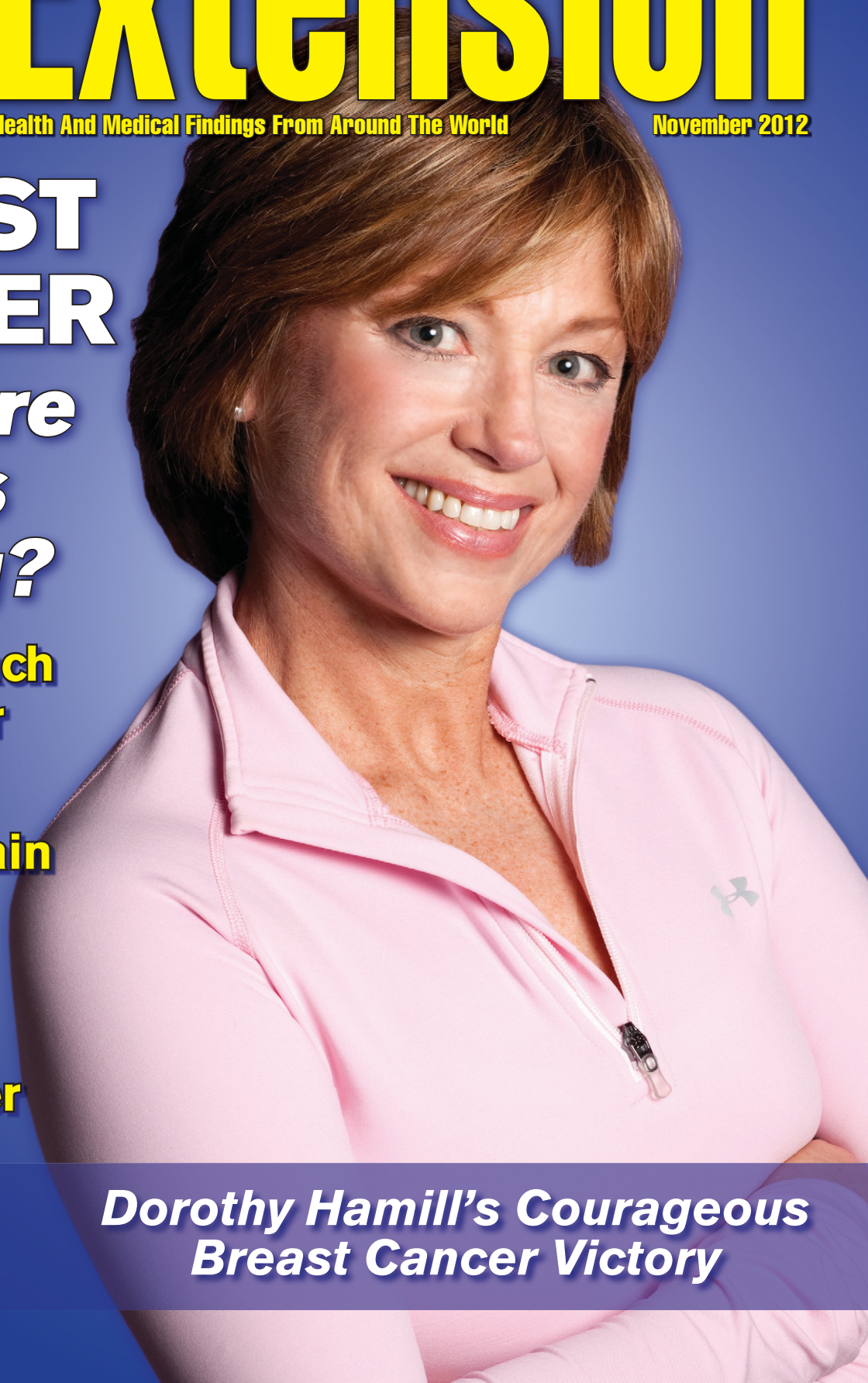
## **BREAST CANCER**

***What Are  
Doctors  
Missing?***

**Safer Approach  
to Slash Your  
Cholesterol**

**Why Your Brain  
Craves DHA**

**Novel Laser  
Therapy For  
Breast Cancer**



***Dorothy Hamill's Courageous  
Breast Cancer Victory***



# The Ultimate Two-Per-Day Formula



## Compare CENTRUM® to TWO-PER-DAY:

Sample Ingredient Comparison	LIFE EXTENSION® TWO-PER-DAY	Centrum® Silver® Adults 50+
Vitamin C	500 mg	60 mg
Vitamin D	2,000 IU	500 IU
Vitamin B1	75 mg	1.5 mg
Vitamin B2	50 mg	1.7 mg
Vitamin B6	75 mg	3 mg
Vitamin B12	300 mcg	25 mcg
Niacin (as niacinamide)	50 mg	20 mg
Pantothenic acid	100 mg	10 mg
Vitamin E	100 IU (natural)	50 IU (synthetic)
Natural Folate	400 mcg	400 mcg (synthetic)
Zinc	30 mg	11 mg
Selenium	200 mcg	55 mcg
Lutein	5,000 mcg	250 mcg
Lycopene	2,000 mcg	300 mcg
Biotin	300 mcg	30 mcg
Boron	3,000 mcg	150 mcg
Chromium	200 mcg	45 mcg
Molybdenum	100 mcg	45 mcg
Magnesium	100 mg	50 mg
Manganese	2 mg	2.3 mg
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)

Contains soybeans, rice, and corn.



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

To order Life Extension  
Two-Per-Day Tablets or Two-Per-Day  
Capsules, call 1-800-544-4440  
or visit [www.LifeExtension.com](http://www.LifeExtension.com)

Compared to conventional "one-a-day" products,  
**Life Extension Two-Per-Day** provides up to 50  
times more potency!

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

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



Item # 01615  
Tablets



Item # 01614  
Capsules

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

- 4 times more Vitamin D
- 8 times more Vitamin C
- 2 times more Vitamin E
- 10 times 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

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

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

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.



## REPORTS

**30 LASER THERAPY FOR BREAST CANCER PATIENTS**

In a human clinical research trial supported by **Life Extension®**, scientists are testing an innovative, **laser-assisted immune therapy** against advanced breast cancer. This sophisticated technique not only destroys primary tumors but also appears to act as a cancer vaccine, preventing recurrences. Results so far are encouraging.

**42 DOROTHY HAMILL: AN INSPIRATION ON AND OFF THE ICE**

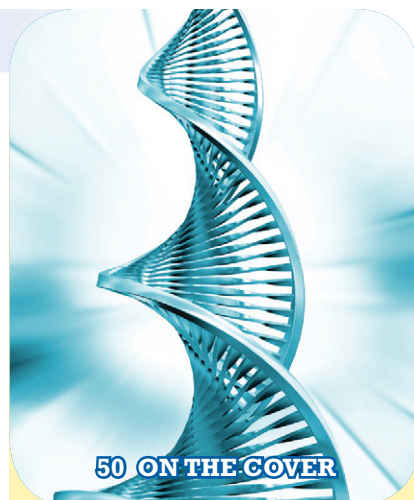
Five years ago, America's Sweetheart—Olympic Gold Medal winner and longtime Ice Capades star Dorothy Hamill—was diagnosed with breast cancer. Her return to vibrant health has involved participation in research studies, diet, exercise, and supplements.

**66 DHA: AN ESSENTIAL BRAIN FOOD**

Studies show that brain tissue contains the highest concentration of DHA in the body. For those wishing to boost their DHA levels to avoid cognitive degeneration, NASA scientists have found a rich source of *vegetarian* DHA available from marine algae.

**78 HOW BIOFLAVONOIDS CREATE YOUTHFUL SKIN TONE**

A topical formulation harnesses the rejuvenating **synergy** of three *flavonoids*—**quercetin**, **hesperidin**, and **rutin**—to nourish and heal skin cells through multiple pathways. Combined, these flavonoids minimize uneven skin tone, age spots, wrinkles, and spider veins.

**50 ON THE COVER****EPIGENETICS HALTS BREAST CANCER DEVELOPMENT**

Up to **50%** of breast cancer cases are thought to be preventable through simple changes in diet and lifestyle. The science of **epigenetics** uses nutrients and certain drugs to regulate genes, thereby changing the way breast cancer cells age and reproduce.

## DEPARTMENTS

**7 AS WE SEE IT - METFORMIN MAKES HEADLINE NEWS**

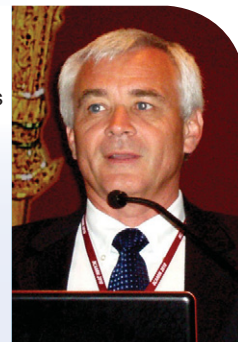
Extensive scientific evidence documents the anti-cancer properties of **metformin**. Yet it is illegal for manufacturers to promote metformin to healthy people who want to reduce their risk of cancer, vascular occlusion, or obesity. Unless the current political/legal stranglehold over medical innovation is lifted, needless suffering and death will continue.

**23 IN THE NEWS**

Selenium with CoQ10 lowered deaths from cardiovascular disease by **54%**; curcumin *prevents* type II diabetes in prediabetics; middle-aged adherence to Mediterranean diet reduced mortality by up to **62%**; improperly cooked meat increases risk of advanced cancer—confirming longstanding **Life Extension®** warnings; and more.

**87 PROFILE**

Cardiac surgeon and researcher Dr. Sergey Dzigan pioneered the hypothesis that high cholesterol is caused by the body trying to correct age-diminished **steroid hormone** levels by boosting their *precursor*—cholesterol. His remarkable study results demonstrate that a multimodal combination of hormones, nutrients, and vitamins effectively targets elevated cholesterol without medication.

**97 SUPER FOODS**

Research indicates that celery stalks, seeds, and leaves offer strong protection against heart disease, cancer, diabetes, and gout. In addition to vitamin K, potassium, folate and magnesium, celery contains a number of complex compounds such as apigenin and luteolin.





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

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# Advanced RESVERATROL Formula

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

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

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

## High-Potency Resveratrol with Synergistic Activators

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

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

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

Item # 01430



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

### References

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To order Optimized Resveratrol with Synergistic  
Grape-Berry Actives, call 1-800-544-4440  
or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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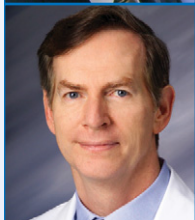
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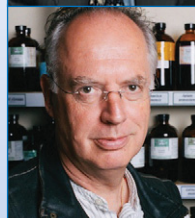
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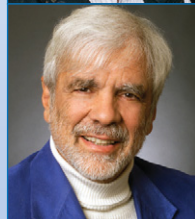
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# TRIPLE ACTION CRUCIFEROUS

## Vegetable Extract with Apigenin



Item #01468

Item #01469

Triple Action Cruciferous Vegetable Extract provides the following concentrates in just one vegetarian capsule:

Broccoli Extract	400 mg
[standardized to 4% glucosinolates (16 mg)]	
Watercress 4:1 extract	50 mg
Indole-3-Carbinol (I3C)	80 mg
Rosemary Extract	50 mg
Cat's Claw Extract	50 mg
Cabbage Extract	25 mg
DIM (di-indolyl-methane)	14 mg
Apigenin	25 mg

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 capsule 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**.

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)



## Metformin Makes Headline News



BY WILLIAM FALOON



Metformin is the first-line drug of choice in the treatment of **type II diabetes**. It was first approved in Europe in 1958.<sup>1</sup>

Americans had to wait until 1994 to **legally** obtain metformin.<sup>1</sup>

The holdup in approving metformin goes beyond the **FDA**. It is an indictment of a **political/legal system** that will forever cause needless suffering and death unless substantively changed.

When **Life Extension**® informed Americans about drugs like metformin in the 1980s, the FDA did everything in its power to incarcerate me and shut down our Foundation.<sup>2</sup> FDA propaganda at the time was that consumers needed to be “protected” against “unproven” therapies.

As history has since proven, the result of the FDA’s embargo has been unparalleled human carnage. So called “consumer protection” translated into ailing Americans being denied access to therapies that the FDA now claims are essential to saving lives.

Today’s major problem is not drugs available in other countries that Americans can’t access. Instead, it is a **political/legal system** that suffocates medical innovation.

Headline news stories earlier this year touted the **anti-cancer** effects of **metformin**, data that Foundation members were alerted to long ago.<sup>3</sup>

The problem is that it is **illegal** for metformin manufacturers to promote this drug to cancer patients or oncologists. It’s also illegal to promote metformin to healthy people who want to reduce their risk of cancer, diabetes, vascular occlusion, and obesity.

This fatal departure from reality continues unabated, as our dysfunctional **political/legal system** denies information about **metformin** that could spare countless numbers of lives. >>

## AS WE SEE IT



### Excess Insulin Is a “Death Hormone”

In response to continuous over-production of glucose by the liver, the pancreas secretes huge amounts of **insulin** to suppress it. This excess amount of insulin damages blood vessel walls<sup>34-36</sup> and promotes tumor growth.<sup>37-41</sup> For a type II diabetic who is over-producing insulin, the use of insulin injections provides a relatively brief respite from high blood glucose levels—with horrific long-term consequences.

Drug companies today are heavily promoting convenient insulin injection devices to physicians and suggesting that many of them have forgotten about insulin's proven glucose-lowering effects. The harsh reality is that for most type II diabetics, excess insulin represents a “death hormone” that causes weight gain,<sup>42-44</sup> cancer,<sup>45-47</sup> and vascular disease.<sup>48-51</sup>

It was not only the discovery of insulin that delayed recognition of **metformin**. Drugs known as **sulfonylureas** promote the **insulin** release from the pancreas. Sulfonylureas were liberally prescribed for decades and are another ill-conceived way of temporarily suppressing blood glucose at the expense of systemic metabolic havoc.

Like insulin, **sulfonylurea drugs** induce weight gain, which is the opposite effect one is seeking when treating most type II diabetics. All **sulfonylureas** carry an FDA-mandated warning about increased risk of cardiovascular death.

In one study lasting more than 10 years, patients who primarily received metformin had a **39%** reduction in the risk of heart attack and a **36%** reduction of death from any cause.<sup>52</sup> The same

**Type II diabetics** suffer sharply higher rates of **cancer**<sup>4-7</sup> and **vascular disease**.<sup>8-11</sup> The anti-diabetic drug metformin has been shown in numerous scientific studies to slash the risk of cancer<sup>12-24</sup> and lower markers of vascular disease.<sup>25-28</sup>

Metformin was shown to reduce blood sugar levels in the **1920s**.<sup>28</sup> One reason it fell off the radar screen is that **insulin** quickly became popular because it produced an immediate glucose-lowering effect.

What doctors back then did not realize is that while insulin saved the lives of **type I diabetics** (who produce little or no insulin), those with **type II diabetes** often produce too much insulin as their pancreas tries to offset multiple metabolic imbalances.

One of the metabolic imbalances of type II diabetes is the excess formation of glucose in the liver. To ensure that blood glucose never drops too low, the liver manufactures glucose in a process called **gluconeogenesis**. In type II diabetes, despite an elevated blood glucose level, the

liver inappropriately continues to pump out glucose. This *inappropriate* outburst of glucose from the liver in type II diabetes patients is a classic hallmark of the disease. In fact, scientific data that measures glucose output by the liver shows that the typical type II diabetic produces **three times more glucose** in their liver than **non-diabetics**.<sup>29</sup> And, as previously reported in this publication, even most non-diabetics produce too much glucose in their liver as they age.

Scientific data shows that metformin reduces glucose production and the rate of **gluconeogenesis** by anywhere from **24%** to **36%**, respectively, thus reducing blood glucose levels while lowering the amount of insulin that is chronically secreted.<sup>29</sup> Metformin also enhances insulin sensitivity, thus enabling cells to remove more glucose from the bloodstream, which further lowers glucose and insulin levels.<sup>30-33</sup> In a recent study conducted by a team of researchers in Italy, **500 mg** three times a day of metformin reduced insulin levels by **25%**.<sup>33</sup>



study showed that metformin did not cause weight gain in overweight patients, while patients prescribed sulfonylureas gained **more than 7 pounds**, and those using insulin injections gained **over 10 pounds**.<sup>53</sup>

For the multi-decade period Americans were denied access to **metformin**, doctors felt they had little choice but to prescribe **sulfonylurea drugs** and **insulin injections**. The needless suffering and death endured by diabetics during this “**dark age**” of American medicine is incalculable.

## Why American Doctors Were Afraid of Metformin

For decades, the American medical establishment labored under an egregious misconception about the safety of metformin.

The reason was that drugs in the same class of metformin (biguanides) can cause a potentially fatal condition called **lactic acidosis**, where the body becomes overly acidic in the presence of excess lactic acid. While other biguanide drugs were withdrawn because of lactic acidosis risk, it turned out that metformin did not induce this same side effect in healthier people.<sup>54</sup> As long as one has sufficient kidney, liver, cardiac, and pulmonary function, any excess lactic acid caused by metformin is safely removed by the kidneys.<sup>55-57</sup>

It turned out that only patients with severe kidney, liver, pulmonary, or cardiac impairment had to avoid metformin because of lactic acidosis concerns, and even these worries were overblown.

I’ll never forget what a brilliant medical doctor personally told me after a large study came out that dispelled the myth connecting metformin with lactic acidosis. This doctor knew how effective

metformin was, but was terrified of creating lactic acidosis in any of his patients. He told me something to the effect of, “*If this study showing lactic acidosis is not a risk for metformin users is true, then the multi-decade oversight that caused doctors to fear metformin represents one of the great blunders in medical history.*”

The regrettable fact is that doctors in the United States were taught to avoid drugs in the class of metformin, even though metformin itself was being safely used throughout the world. If only the medical establishment in the United States had looked across the border as close as Canada, they would have seen metformin being liberally prescribed with nowhere near the incidences of lactic acidosis they feared.

In the early years, when I was taking metformin for anti-aging purposes, most doctors warned me about lactic acidosis risk. I always asked where in the scientific literature does it show a healthy person is at risk for lactic acidosis when

taking metformin? They could never cite a reference, so I continued taking my metformin.

## How Metformin Functions

Metformin reduces blood glucose levels primarily by suppressing glucose formation in the liver (hepatic **gluconeogenesis**).<sup>59</sup>

More importantly, it activates an enzyme called **AMPK** (*AMP-activated protein kinase*) that plays an important role in insulin signaling, systemic energy balance, and the metabolism of glucose and fats.<sup>60</sup>

Activation of AMPK is one mechanism that may explain why diabetics prescribed metformin have sharply lower cancer rates. For instance, in a controlled study at MD Anderson Cancer Center, the risk of **pancreatic cancer** was **62% lower** in diabetics who had taken metformin compared to those who had never taken it.<sup>61</sup> Diabetics suffer sharply higher incidences of pancreatic cancer than non-diabetics.<sup>61</sup>



## Analysis Shows Metformin Does Not Cause Lactic Acidosis

A Cochrane Systematic Review of over 300 trials evaluated the incidence of lactic acidosis among patients prescribed metformin vs. non-metformin anti-diabetes medications. Of 100,000 people, the incidence of lactic acidosis was **4.3** cases in the metformin group and **5.4** cases in the non-metformin group. The authors concluded that metformin is not associated with an increased risk for lactic acidosis.<sup>58</sup>

# AS WE SEE IT

## Your Nutrients “May” Work As Well As Metformin

Virtually every Life Extension® member takes **curcumin** on a daily basis.

**Curcumin** activates the same **AMPK** enzyme at a rate that may be higher than **metformin**. Curcumin also increases insulin sensitivity while reducing expres-

sion of glucose-producing genes.<sup>80</sup>

Coffee rich in **chlorogenic acid** or **green coffee extract supplements** have demonstrated a profound reduction in **gluconeogenesis**—with a corresponding decrease in post-meal glucose elevations.<sup>81-83</sup>

We know that suppression of gluconeogenesis, enhanced insulin sensitivity, and activation of

AMPK are some of the mechanisms behind metformin’s broad-spectrum benefits.

It is not possible at this time, however, to know for sure if aging humans can derive identical benefits from nutrients like **curcumin** and **chlorogenic acid** as are provided by **metformin**.

With my understanding of the beneficial mechanisms of **curcumin** and **chlorogenic acid**, I personally take these nutrients *plus* a high dose (**850 mg**) of **metformin** two to three times a day.

## How Metformin May Increase Heart Attack Risk

Metformin reduces **triglycerides**,<sup>62-64</sup> **glucose**,<sup>32,65,66</sup> **insulin**,<sup>67-69</sup> and **hemoglobin A1C** (a marker of long term glucose control).<sup>32,70</sup> These blood markers are all proven heart attack risk factors. Yet not all studies show metformin reduces heart attack incidence.

One study found that when metformin was added to a group of non-overweight patients taking **sulfonylurea drugs**, there was a significant increase in overall mortality.<sup>71</sup> This suggests that metformin should not be combined with sulfonylureas.

Furthermore, not all studies show that metformin reduces cardiovascular risk or improves overall survival in type II diabetic patients. There are several reasons to explain these discrepancies.

Metformin is known to cause **vitamin B12 deficiency** which translates into higher levels of artery-clogging **homocysteine**.<sup>72-74</sup> The tiny amount of vitamin B12 and other B-vitamins found in commercial supplements is not always sufficient to offset this problem. Those who take metformin should ensure they are taking higher doses of B-vitamins (at least **300 mcg of vitamin B12**) and check their homocysteine levels to make sure it stays in the safer ranges.<sup>75</sup> One study showed that the addition of **5,000 mcg** of folic acid to patients taking metformin reduced their homocysteine from **15.1 µmol/L** to **12.1 µmol/L**.<sup>76</sup> Optimal homocysteine levels are probably under **8 µmol/L**, but any reduction is helpful. Sadly, most diabetics prescribed metformin don’t check their homocysteine levels and don’t take enough B-vitamins to prevent a deficiency.

Some studies show that metformin reduces **free testosterone** and **total testosterone** levels in men.<sup>77</sup> Testosterone is especially important in male diabetics as it significantly enhances insulin sensitivity.<sup>78</sup> Life Extension has previously published clinical data showing the critical importance of diabetic men to maintain youthful testosterone levels in order to improve glucose utilization.<sup>79</sup>

The greatest challenge in evaluating clinical data on metformin is that it is often prescribed to debilitated patients who have undergone severe arterial attack for many decades. These diabetic patients are at significant risk of cardiovascular disease from a number of underlying causes. They need to take aggressive steps to correct all independent risk factors for vascular disease, something that is never done in clinical studies.

## Politicians Overlook Most Important Issue

Billions of dollars are being spent on campaign ads by politicians. Most of the issues raised will not directly affect you in a meaningful way.







## Should You Ask Your Doctor About Metformin?

Metformin is a synthetic compound available in low cost generic form. Some members tell me their health insurance plans cover almost **100%** of the cost. Even out of pocket, metformin is remarkably inexpensive.

The challenge some members find is persuading their doctors to prescribe metformin if they are not diabetic. You may recall the many articles we have published showing that any elevation of **fasting glucose above 85 mg/dL** increases ones risk for contracting classic diabetic complications like heart attack and stroke.<sup>84-90</sup>

Therefore, those whose glucose levels exceed **85 mg/dL** should consider metformin for its glucose-lowering properties alone, though **chlorogenic acid**-standardized coffee extracts may accomplish a similar effect.

No one should take metformin without having a complete battery of blood tests to show their doctor that it is not contraindicated because of disorders like kidney failure. Those with low blood sugar (hypoglycemia) may not be able to use metformin.

A suggested starting dose of metformin is **250 mg** before a large meal. The dose may be increased after a week to **250 mg** before three meals a day. After a month, you may consider increasing to **500 mg** before meals and eventually go up to **850 mg** before meals, which is the upper limit dose.

If you notice a slight reduction in appetite, use it to cut back on your calorie intake and hopefully shed some fat pounds. By stabilizing blood sugar and insulin levels, metformin can help reduce food cravings.

Overlooked is a problem that will affect every one of us—the suffocating impact of **antiquated legislation** on medical progress.

Once you or a family member is diagnosed with a disease like **pancreatic cancer**, campaign ads become background clutter. Your only concern is finding a therapy that offers some hope of survival.

The best our current archaic system offers for **pancreatic cancer** is a drug called **gemcitabine**. Compared to another chemo drug, gemcitabine increased average survival by a meager **36 days**, which conventional doctors described as a “significant improvement.”<sup>91</sup>

A team of researchers was able to improve on gemcitabine by using instead a toxic combination of chemotherapy drugs (called FOLFIRINOX). Compared to the gemcitabine group, patients able to tolerate the debilitating side effects of FOLFIRINOX lived **4.3 months longer** than the

gemcitabine group, but suffered greater toxicity.<sup>92,93</sup>

The fact that pancreatic cancer still quickly kills virtually everyone who contracts it is a stark example of how today’s regulatory system *stifles* innovation. Unregulated environments have produced technologies like handheld computers that perform miraculously and are affordable to mostly everyone. **Life Extension**® for years has provided hard-core scientific documentation about the **anti-cancer** properties of **metformin**. Yet unless the current political/legal **stranglehold** over medical innovation is lifted, the only cancer patients likely to benefit from metformin will be Foundation members who insist their doctors prescribe it.

Recall that metformin was discovered **90 years ago**, yet conven-

tional doctors are still failing to use it in the prevention and treatment of a host of age-related disorders.

## The Political/Legal System Must Be Changed

Human clinical research has long been oppressed in the United States by a variety of laws that conspire to deny medical progress.

The few new therapies that are approved are mediocre, expensive, and often laden with side effects. The current system represents the worst of all worlds when it comes to the kind of scientific advances that aging people need to significantly extend their healthy life spans.

Your support of **Life Extension**® enables us to continue our relentless campaign to tear down the strangleholds erected by public and private institutions.

## AS WE SEE IT

The **37-year delay** in approving metformin provides a real world example of how broken our **political/legal systems** are when it comes to finding cures for degenerative disease and the aging process itself.

### What You Can Do To Stop Needless Suffering and Death

Scientists have identified novel ways of treating cancer and other illnesses, but too little of this new technology is being used in clinical practice. When new discoveries are made, drug companies spend years seeking a patent, and then more years carrying it through the cumbersome bureaucratic approval process. A major reason so many cancer patients die today is an antiquated regulatory system that causes effective therapies to be delayed (or suppressed altogether).

This system must be changed, if the 1,500 American cancer patients who perish each day are

to have a realistic chance of being saved. Our long-standing proposal has been to change the law so that anyone can opt out of the FDA's umbrella of "protection." This approach will allow companies to sell drugs that have demonstrated safety and a reasonable likelihood of effectiveness, which are clearly labeled "**Not Approved by the FDA.**" Patients who wish can still use only FDA-approved drugs, while those willing to take a risk, in consultation with their doctors, will be allowed to try drugs shown to be safe that are still not approved.

We believe that this initiative will result in a renaissance in the practice of medicine similar to the computer technology revolution of the past four decades. In this environment, many lethal diseases will succumb to cures that are less expensive than is presently the case. And greater competition will help eliminate the health care cost crisis that exists today.

Seriously ill people, in consultation with their doctors, should

be able to make up their own minds about what drugs they are willing to try.

This is the time when political leaders will at least listen to their constituent's concerns. I encourage each of you to log on to our legislative action website at **www.lef.org/lac** to easily email your representative and two senators a letter demanding they enact legislation that will enable those with serious illness to obtain therapies far enough along in the clinical trials process to be deemed safe, but not yet approved by the FDA.

For longer life,



William Faloon

*(References may be found on page 15.)*





## Tell Congress to Change the Law!

There are millions of cancer patients alive right now who face possible or probable death in the next twelve months. If you add their family members and friends, there are tens of millions of Americans who should be outraged by an outdated regulatory system that bans access to potentially life-saving therapies.

The FDA continues to suppress innovative therapies because the public has failed to demand that our elected officials rein in the FDA's arbitrary authority. The first

step in changing today's outmoded system is for those who understand the magnitude of this problem to communicate the urgent need for change to Congress.

Those concerned about this serious issue should log on to [www.lef.org/lac](http://www.lef.org/lac) to insist that their Representative and two Senators help enact legislation that will enable cancer patients to obtain therapies far enough along in the clinical trials process to be deemed safe, but not yet approved by the FDA.

Those without computer access can photocopy the next page and mail it to their Representative at The US House of Representatives, Washington, DC, 20515 and two Senators at The US Senate, Washington, DC, 20510. We also ask that you phone your Congressional members at 1-202-224-3121 to let them know how disgusted you are that doctors and patients are not allowed to choose drugs that may be effective against an often fatal disease.



The Honorable:

I am writing to ask that you sponsor or co-sponsor legislation to enable cancer patients (and those with other serious diseases) to purchase medications while they are pending final approval by the FDA. This approach will allow companies to sell novel drugs with a label clearly stating that they are "Not Approved by the FDA."

Consumers who wish to rely on the FDA can limit their choices to fully approved drugs only, while those willing to take a risk (in consultation with their doctors) will be allowed to try what they choose. (Companies that make fraudulent claims for products can be prosecuted under the laws that exist today.)

This initiative can result in a renaissance in the practice of medicine, similar to the computer technology revolution that has occurred over the past three decades. In this environment free of regulatory burden, many inexpensive cures will very likely be found for lethal diseases. And greater competition will help eliminate the health care cost crisis that exists today.

I am tired of reading about medical breakthroughs, only to be told that I will have to wait years before the therapy might become available. As 1,500 Americans die of cancer each day, I consider the introduction and passage of such a law an extremely high priority.

Seriously ill people have the fundamental right to make up their own minds about what drugs they are allowed to try, in consultation with their physicians. Please let me know that you will sponsor or co-sponsor such legislation, which will provide us with quicker access to drugs that the FDA has found safe and potentially effective, but have not yet received final approval.

Sincerely,

Name:

Address:

City:

ST:

Zip:





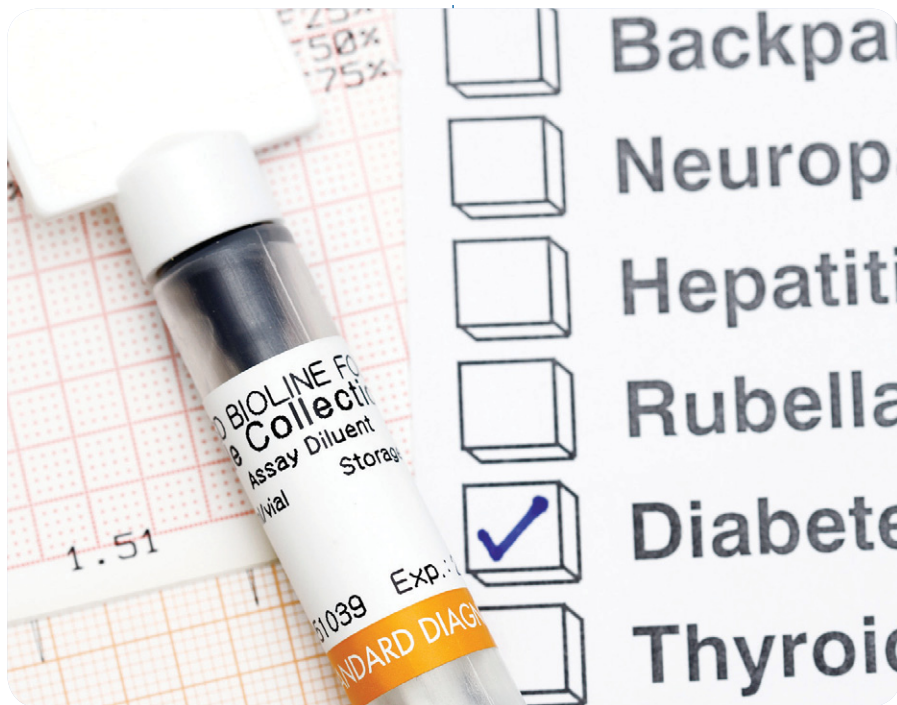
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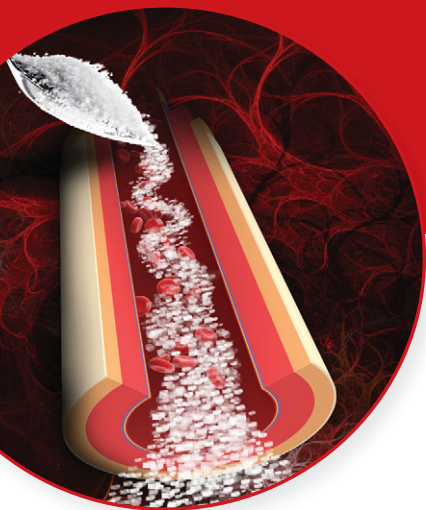
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# NATURAL APPROACHES FOR OPTIMAL GLUCOSE CONTROL

## GREEN COFFEE EXTRACT

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

People who take extraordinary steps to limit their **carbohydrate** exposure may *still* be experiencing higher-than-desired blood sugar throughout the day.

The reason? **Blood sugar can surge to dangerously high levels that can last for hours following meals and even the entire day!**

Studies show even in people with normal **fasting** glucose, gaining **control** of **after-meal** surges may provide additional support for cardiovascular **and** metabolic health.<sup>1-3</sup>

To address this widespread problem, a natural compound called **CoffeeGenic™ Green Coffee Extract** is available. This *next-generation* glucose control compound was shown to induce a remarkable **32%** drop in **after-meal** blood sugar!<sup>1</sup>

### Novel Green Coffee Compound

At the core of **CoffeeGenic™ Green Coffee Extract's** power to favorably modulate *after-meal* glucose levels is **chlorogenic acid**, a polyphenol found in the **green coffee bean**.

**Chlorogenic acid** has been shown to **inhibit** excess activity of the **glucose-6-phosphatase** enzyme.<sup>4,5</sup> This enzyme triggers glucose formation from non-carbohydrate substrates **and** glycogen release from the liver, both of which can create **excess** glucose in the blood.<sup>6</sup> Neutralizing **excess glucose-6-phosphatase** is essential for most people to achieve **optimal glucose control**.

Another means by which **chlorogenic acid** supports healthy after-meal glucose levels is by targeting the **alpha-glucosidase** enzyme. This intestinal enzyme breaks apart complex sugars and enhances their absorption into the bloodstream.<sup>7</sup>

Chlorogenic acid **also** increases the signal protein for insulin receptors in liver cells.<sup>8</sup>

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### Why CoffeeGenic™ Green Coffee Extract

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

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

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

#### ● CoffeeGenic™ Green Coffee Extract (200 mg) • Item # 01604

(Each serving contains approximately 6 mg caffeine)

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



Item # 01604

#### ● CoffeeGenic™ Green Coffee Extract (400 mg) • Item # 01620

(Each serving contains approximately 12 mg caffeine)

A bottle containing **90 400 mg vegetarian capsules** of **CoffeeGenic™ Green Coffee Extract** retails for \$38. If a member buys four bottles, the price is reduced to just **\$25.50** per bottle. Those seeking to emulate the dose used in the 2012 study that induced an average **17.6 pounds** of weight loss<sup>1</sup> should take **one 400 mg capsule** of standardized **green coffee bean extract** **three** times a day.



Item # 01620

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

To order any of the Green Coffee Extract formulas, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



# ARE YOU GETTING Curcumin's BENEFITS?



## How Much Curcumin Are You Absorbing?

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

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

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

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

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

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

- Nearly twice the support for **immune** health.
- Approximately twice the support for **inflammatory** issues.
- Almost double the **antioxidant** support.

A separate study indicated that an antioxidant-rich curcumin extract<sup>3</sup> provided powerful support for heart health.

## Unrivalled Potency and Absorbability with BCM-95®

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

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

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

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



Item # 00407

### References

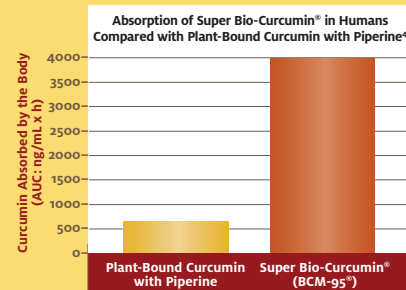
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**CAUTION:** Do not take if you have gallbladder problems or gallstones. If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

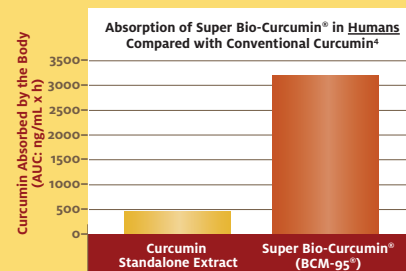
**Bio-Curcumin®** and **BCM-95®** are registered trademarks of Dolcas-Biotech, LLC.

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

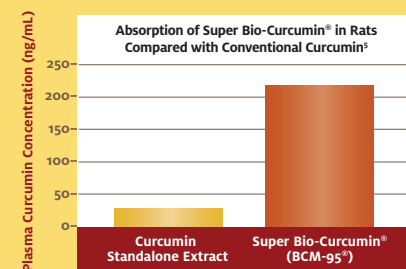
**To order Super Bio-Curcumin®  
call 1-800-544-4440  
or visit [www.LifeExtension.com](http://www.LifeExtension.com)**



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



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



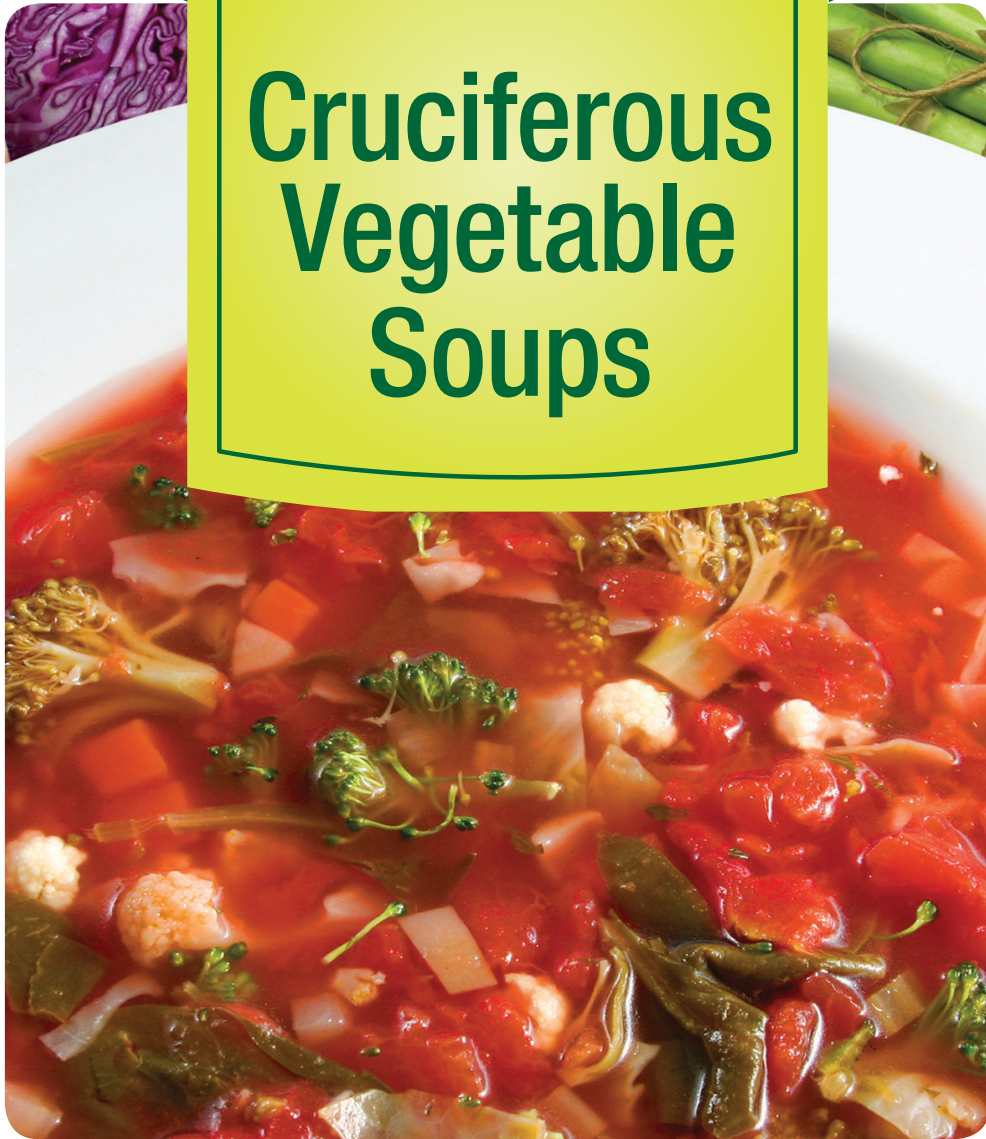
**Chart 3.** Bioavailability in rats fed with BCM-95® is 7.8 times higher than conventional curcumin.



IMPROVED RECIPE

**Rich Rewards™**

## Cruciferous Vegetable Soups



*The World's Healthiest Vegetables  
One Smart Bowl of Soup™*



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

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

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

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

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



Item # 01530



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 these souper foods.

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

### One Smart Bowl of Soup

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

Less than 71 calories per serving

No added starches, preservatives, or sugars!

Excellent source of cruciferous vegetables

Low total fat per serving

No saturated fat or cholesterol

0 grams trans fat

## Cruciferous Vegetable Soup

### Nutrition Facts

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

Amount Per Serving		Calories 60	Calories from Fat 10
		% Daily Value *	
<b>Total Fat</b>	1g	2%	
Saturated Fat	0g	0%	
Trans Fat	0g		
<b>Cholesterol</b>	0mg	0%	
<b>Sodium</b>	45mg	2%	
<b>Potassium</b>	580mg	17%	
<b>Total Carbohydrate</b>	12g	4%	
Dietary Fiber	3g	12%	
Sugars	8g		
<b>Protein</b>	3g		

Vitamin A 60% • Vitamin C 80%

Calcium 6% • Iron 8%

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

		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
Potassium		3,500mg	3,500mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

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

Item # 01530

## Spicy Cruciferous Vegetable Soup

### Nutrition Facts

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

Amount Per Serving		Calories 70	Calories from Fat 20
		% Daily Value *	
<b>Total Fat</b>	2g	3%	
Saturated Fat	0g	0%	
Trans Fat	0g		
<b>Cholesterol</b>	0mg	0%	
<b>Sodium</b>	40mg	2%	
<b>Potassium</b>	560mg	16%	
<b>Total Carbohydrate</b>	12g	4%	
Dietary Fiber	2g	8%	
Sugars	8g		
<b>Protein</b>	3g		

Vitamin A 45% • Vitamin C 80%

Calcium 6% • Iron 8%

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

		Calories: 2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500mg	3,500mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

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

Item # 01531



# BLOCK THE EFFECTS OF STRESS!

## Unique formulation modulates multiple biochemical pathways of stress, providing *broad-spectrum* defense

When properly supported, the mechanism known as **homeostasis** enables the body to maintain its normal balance during stress, helping us to remain energized and focused.

Increasingly overwhelmed by stress, however, our bodies seldom get a chance to restore our natural equilibrium.

The result is that an estimated **75-90%** of visits to primary care physicians are now related to the effects of stress.<sup>1</sup>

Even more alarming is a recently published study<sup>2</sup> linking stress with **shorter telomeres** (the caps on the ends of chromosomes), which is associated with accelerated aging!

## Inhibiting the Pathways of Stress

Stress disrupts multiple biochemical pathways, including **cortisol production**, the **hypothalamic-pituitary-adrenal (HPA) axis**, **pro-inflammatory enzyme** production and **neurotransmitter** production. A pre-clinical study has shown that stress also inhibits neural plasticity (the growth of new connections between neurons in the brain).<sup>3</sup>

Fortunately, **Life Extension®** has created a state-of-the-art formulation of extracts **adaptogens**, shown to modulate a broad range of factors to help relieve the effects of stress.

## Broad-Spectrum Defense

**Adrenal Energy Formula** combines **four** known stress-modulating extracts—**Holy Basil**, **Cordyceps**, **Bacopa**, and **Ashwagandha**—each scientifically validated to support homeostasis, even on the most stressful days.

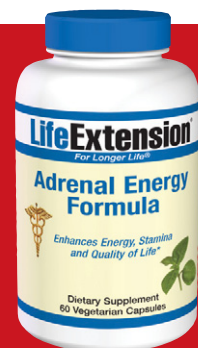
Each of these extracts modulates a different *set* of stress related changes in the body's chemistry.<sup>4-16</sup> Combined, they may *complement* each other to provide complete adaptogenic stress defense!

For those who are seeking protection from the damaging effects of stress, **Adrenal Energy Formula** is a broad-spectrum, potent, and safe formulation for maintaining healthy energy and vitality!

**Adrenal Energy Formula** modulates stress and supports energy and balance.

## The suggested dose of 4 capsules each day of Adrenal Energy Formula provides:

OciBest® (Holy Basil) extract	1,200 mg
Proprietary Blend	1,032 mg
Sensoril® (Ashwagandha) extract	
Cordyceps Cs-4 ( <i>Paecilomyces hepiali</i> ) extract	
BaCognize® Ultra ( <i>Bacopa monnieri</i> ) extract	



A bottle containing 60 vegetarian capsules of **Adrenal Energy Formula** retails for \$24. If a member buys four bottles, the price is just **\$16.50** per bottle. Item# 01628

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

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





## IN THE NEWS

### Mediterranean Diet Consumed in Middle Age Associated with Reduced Risk of Dying Over 6.8 Years of Follow-Up

In an article published in the *Journal of Nutrition*, Spanish researchers report a significantly reduced risk of dying in association with greater adherence to a Mediterranean diet by middle-aged men and women.\*

Almudena Sanchez-Villegas and colleagues evaluated data from 15,535 Spanish university graduates who participated in the Seguimiento Universidad de Navarra Project, which began enrollment in 1999. Subjects in the current study had an average age of 38 and were free of cardiovascular disease, diabetes, or cancer upon enrollment. Dietary questionnaires completed at the beginning of the study and during follow-up were graded according to adherence to the Mediterranean diet.

One hundred twenty-five deaths occurred between 1999 and 2010. Compared with participants who had low adherence to the diet, moderate adherence was associated with a **42%** lower adjusted risk of dying and high adherence with a **62%** lower risk.

The Mediterranean diet is a high-fiber, heart-healthy eating plan where meals are centered around fruits, vegetables, and monounsaturated (good) fats like olive oil, nuts, and fish, with smaller amounts of meat and refined carbohydrates.

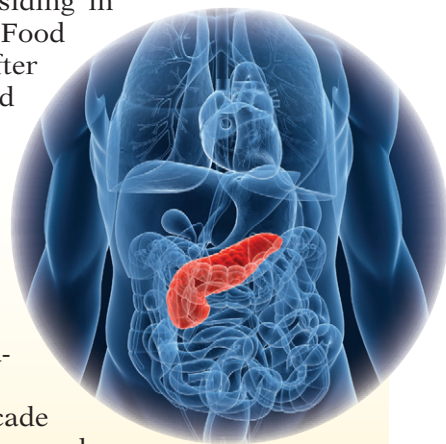
**Editor's Note:** The authors suggest antioxidant and anti-inflammatory effects as well as prevention of endothelial damage as disease-protective mechanisms associated with high Mediterranean diet adherence.

—D. Dye

\* *J Nutr.* 2012 Jul 18.

### High Antioxidant Diet Could Lower Pancreatic Cancer Risk

Research described in an article published in the journal *Gut* reveals an association between higher levels of dietary antioxidants and a lower risk of cancer of the pancreas.\* A team from the University of East Anglia and the University of Cambridge evaluated data from 23,658 participants in the EPIC-Norfolk study of men and women residing in Norfolk, England. Food diaries completed after enrollment provided data concerning the participants' intake of vitamins C, E, selenium, and zinc. Blood samples provided by **95%** of the subjects were analyzed for serum vitamin C levels.



Over the first decade of follow-up, 49 men and women developed cancer of the pancreas. Among participants whose combined intake of vitamins C, E, and selenium were among the top **75%**, there was a **67%** lower risk of developing pancreatic cancer compared to subjects whose intake was among the lowest **25%**.

**Editor's Note:** Authors Andrew R. Hart and colleagues remark that if the association is causal, 8.2% of all pancreatic cancers could be prevented by improved intake of selenium and vitamins C and E.

—D. Dye

\* *Gut.* 2012 Jul 24.



### Reduced Vitamin D Levels Linked with Greater Risk of Dying Over 12-Year Period Among Frail Older Adults

In an article published in the *European Journal of Clinical Nutrition*, Ellen Smit and her associates report an increased risk of dying over a 12-year period among frail older men and women with reduced levels of vitamin D compared to those with higher levels.\*

The study included 4,731 participants who were over the age of 60. Among those whose vitamin D levels were among the lowest **25%** of participants, there was a **94%** greater risk of being frail compared to those whose levels were highest.

Over a median 12.6 years of follow-up, subjects who were frail had more than twice the risk of dying than non-frail participants. Those who suffered from both frailty and low vitamin D levels had three times the risk of mortality compared to those who were not frail and whose vitamin D levels were high.

**Editor's Note:** Frailty was defined as meeting three of five criteria that included low body mass index, slow gait, weakness, exhaustion, and reduced physical activity levels. Intermediate levels of vitamin D were associated with pre-frailty, defined as having one to two frailty factors.

—D. Dye

\* *Eur J Clin Nutr.* 2012 Jun 13.

### Higher Vitamin B1 and B6 Status Linked with Lower Risk of Dying Over Eight-Year Period

The journal *Clinical Nutrition* published the finding of an association between higher intake of vitamins B1 and B6, as well as higher plasma levels of pyridoxal-phosphate (an indicator of vitamin B6 status), with a lower risk of dying among older men and women during up to ten years of follow-up.\*

The study included 1,747 subjects who participated in the Taiwanese Elderly Nutrition and Health Survey from 1999 to 2000. The participants were followed through 2008, during which 627 men and women died.

Subjects whose intake of vitamin B1 or vitamin B6 was among the top one-third of participants had a **26%** lower adjusted risk of dying over follow-up compared to those whose intake was among the lowest third. Having an adequate pyridoxal phosphate level resulted in a **48%** lower risk of dying than that experienced by those with deficient levels.

**Editor's Note:** Vitamin B1 has particular relevance to muscle, blood, cardiovascular, and neurologic functions, and higher vitamin B6 intake and plasma concentrations may reduce elevated homocysteine levels, thereby lowering the risk of premature death due to conditions associated with hyperhomocysteinemia.

—D. Dye

\* *Clin Nutr.* 2012 Aug;31(4):448-54.

### Coenzyme Q10 Plus Selenium Supplementation Reduces Cardiovascular Deaths in Trial

A four-year trial of CoQ10 and selenium has revealed a significant reduction in the risk of dying from cardiovascular disease among supplemented men and women.\* The study, which was reported in the *International Journal of Cardiology*, also uncovered a reduction in the cardiac N-terminal proBNP (NT-proBNP), a biomarker of cardiomyocyte wall tension, which is elevated in congestive heart failure and left ventricular dysfunction.

In a double-blinded trial, 228 Swedish citizens received a placebo or 200 micrograms of selenium per day plus 100 milligrams of CoQ10 twice daily for 48 months. Over 5.2 years of follow-up (which included the four-year treatment period), **5.9%** of the supplemented group and **12.6%** of the placebo group died of cardiovascular causes, which indicated a **54%** adjusted risk reduction. Those in the treatment group also had lower levels of NT-proBNP compared to placebo, and better cardiac

function as determined by echocardiography.

**Editor's Note:** Authors Urban Alehagen and colleagues remark that selenium is essential for the optimal activity of TrxR1, a protein necessary for the effectiveness of CoQ10, which, in turn, is active in several metabolic pathways in the heart. Thus, having insufficient levels of either nutrient increases the risk of cardiovascular events.

—D. Dye

\* *Int J Cardiol.* 2012 May 22.





## Supplementation with Curcumin Prevents Progression to Diabetes Among Prediabetics

Supplementing with curcumin extract may help protect against the development of type II diabetes among men and women with prediabetes, according to the findings of a trial published in *Diabetes Care*.\*

Two hundred thirty-seven individuals with prediabetes were randomized to receive a daily regimen of three curcumin capsules containing 240 milligrams of curcuminoids each twice per day or placebo capsules for nine months. Physical examinations conducted upon enrollment and at three, six, and nine months provided data on body weight, waist circumference, glucose tolerance, insulin resistance, glycated hemoglobin, C-peptide, and other factors.

At the end of the trial, **16.4%** of the participants who received a placebo had developed diabetes. Among those who received curcumin, NO cases of diabetes occurred. The curcumin group had better functioning of beta-cells (cells of the pancreas that store and release insulin and C-peptide), decreased insulin resistance and higher adiponectin levels compared to the placebo group.

**Editor's Note:** Authors Somlak Cheungsamarn and colleagues suggest that curcumin may prevent the progression of prediabetes to diabetes by maintaining healthy beta-cell function. They also noted that the increase in adiponectin observed in association with curcumin supplementation helps lower inflammation, which is a cause of beta-cell degradation.

—D. Dye

\* *Diabetes Care*. 2012 Jul 6.

## Persian Saffron May Help Cure MS

A recent article published in the *Journal of Immunology* by a group of medical researchers at the University of Alberta have found that an active ingredient in the Persian spice saffron may be used to treat diseases involving neuroinflammation, such as multiple sclerosis.\*

In experiments conducted by the Alberta scientists, the use of a compound called crocin suppressed both inflammation and certain cell stresses, resulting in decreased neurological impairment in lab models and cell cultures with MS.



"We found there is a compound in saffron, known as crocin, that exerts a protective effect in brain cell cultures and other models of MS. It prevented damage to cells that make myelin in the brain," said researcher Chris Power of the University. He noted that they are not close to clinical trials, but the results thus far are exciting.

—M. Richmond

\* Available at: <http://www.research.ualberta.ca/en/VP%20Research%20News/2011/11/Saffronand-multiplesclerosis.aspx>. Accessed August 25, 2012.

## Vitamin B6 May Reduce Risk of Certain Breast Cancers

Scientists at the Cancer Epidemiology Program, University of Hawaii Cancer Center, recently examined the association of prediagnostic plasma concentrations of pyridoxal-5'-phosphate (PLP), an active form of vitamin B6, with postmenopausal breast cancer risk in a case-control study nested in the Multiethnic Cohort in Hawaii and Southern California.\*

After examining over 700 cases, along with over 700 similarly matched controls, scientists concluded that the data suggests higher circulating levels of vitamin B6 are associated with a reduced risk of invasive postmenopausal breast cancer. In fact, women with plasma PLP concentrations in the highest quartile had a **30%** reduced risk of invasive breast cancer compared to the women in the lowest PLP quartile. When combined with further information from two other prospective studies, the group determined that there may be a role for vitamin B6 in breast cancer prevention.

—M. Richmond

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



## IN THE NEWS



### Berries: A Valuable Weapon Against Parkinson's

A recent article in the journal *Neurology* examined whether higher intakes of total flavonoids and their subclasses (flavanones, anthocyanins, flavan-3-ols, flavonols, flavones, and polymers) were associated with a lower risk of developing Parkinson's disease (PD).\*

In the analysis, scientists included 49,281 men in the Health Professional Follow-up Study and 80,336 women from the Nurses' Health Study. Five major sources of flavonoid-rich foods (tea, berry fruits, apples, red wine, and orange/orange juice) were also examined. Flavonoid intake was assessed using an updated food composition database and a validated food frequency questionnaire.

In men, after adjusting for multiple confounders, participants in the highest quintile of total flavonoids had a **40%** lower PD risk than those in the lowest quintile. This led scientists to conclude that intake of some flavonoids may reduce PD risk, particularly in men, but a protective effect of other constituents of plant foods cannot be excluded.

**Editor's Note:** Life Extension® has long touted the benefits of berries in a longevity-centered diet. Life Extension's Berry Complete supplement is an excellent way to make sure you consume the proper amount of brain-protecting benefits from berries.

—M. Richmond

\* Available at: <http://www.neurology.org/content/early/2012/04/04/WNL.0b013e31824f7fc4.short?rss=1>. Accessed August 20, 2012.

### Improperly Cooked Red Meat May Affect Cancer Risk

Life Extension® has been sounding the alarm on the dangers of over-cooked meat for years. A group of scientists from the University of Southern California, Norris Comprehensive Cancer Center, Keck School of Medicine conducted a study that once again confirms our position. The study, led by Mariana Stern, investigated the association between red meat and poultry intake and localized and advanced prostate cancer risk factor (PCA) taking into account cooking practices and polymorphisms in enzymes that metabolize carcinogens that accumulate in cooked meats.\*



In an interview done by Molly Rugg with Stern for USC's Keck School of Medicine website, Stern stated that, "We found that men who ate more than 1.5 servings of pan-fried red meat per week increased their risk of advanced prostate cancer by **30%**. In addition, men who ate more than 2.5 servings of red meat cooked at high temperatures were **40%** more likely to have advanced prostate cancer."

—M. Richmond

\* Available at: <http://carcin.oxfordjournals.org/content/early/2012/07/13/carcin.bgs242.abstract>. Accessed August 20, 2012.

### Multi-Modal Therapies Show Promise in Treating Breast Cancer

A recent study published in the *New England Journal of Medicine* showed that a combination of anastrozole (Arimidex®) and fulvestrant (Faslodex®) improved the overall survival and progression-free survival in women with certain hormone-receptor positive metastatic breast cancers.\*

In order to study the drugs being used together, the team of scientists ran a trial involving 694 women who were randomly assigned a dose of Arimidex® alone or Arimidex® and Faslodex®.

The scientists concluded that, "The combination of anastrozole and fulvestrant was superior to anastrozole alone or sequential anastrozole and fulvestrant for the treatment of HR-positive metastatic breast cancer, despite the use of a dose of fulvestrant that was below the current standard."

**Editor's Note:** The aromatase inhibitor drug anastrozole dramatically reduces estrogen levels. Some women cannot tolerate estrogen deprivation, but for those with estrogen receptor positive breast tumors, anastrozole significantly improves survival.

—M. Richmond

\* Available at: <http://www.nejm.org/doi/full/10.1056/NEJMoa1201622>. Accessed August 18, 2012.





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



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

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)

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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.

# Mitochondrial Basics

## with BioPQQ™

**Energy to burn.** It's more than just a phrase. It's the key to a healthy life span.

Behind every process your body needs to survive and thrive are the cellular energy generators known as **mitochondria**. Their function is so crucial that a growing number of scientists now believe mitochondrial longevity may determine *overall* longevity in aging humans.<sup>1-5</sup> That's why **Life Extension®** has remained at the forefront in identifying innovative compounds that specifically support mitochondrial health.

In addition to the more comprehensive **Mitochondrial Energy Optimizer with BioPQQ™** and standalone **PQQ** products, we now offer a one capsule per day formula for individuals seeking a simplified, low-cost option called **Mitochondrial Basics with BioPQQ™**.

The reason? We want all members to have access to targeted nutrients required to support mitochondrial function and the generation of healthy new mitochondria.

### Three Premium Compounds in One Low-Cost Formula

**Mitochondrial Basics with BioPQQ™** brings together cutting-edge mitochondrial energizers, including the most exciting nutrient to emerge in recent years called *pyrroloquinoline quinone* or **PQQ**. The three ingredients in value-priced **Mitochondrial Basics with BioPQQ™** are:

**1. PQQ.** This breakthrough micronutrient has recently been shown to trigger **mitochondrial biogenesis**—the growth of new mitochondria in aging cells!<sup>6</sup> PQQ also activates *genes* involved in protecting the delicate structures within the mitochondria.<sup>7-10</sup>

**2. R-lipoic acid.** The detrimental effects of free radicals comprise one of the chief obstacles to optimal mitochondrial energy production. Published studies confirm R-lipoic acid's power to promote mitochondrial bioenergetics while simultaneously *blunting* free radical activity.<sup>11-16</sup> **Mitochondrial Basics with BioPQQ™** contains the superior **Bio-Enhanced® R-lipoic acid** and is in a proprietary *microencapsulated* form for better absorption.

**3. Acetyl-L-carnitine arginate.** Fats are shuttled into the mitochondria for metabolic combustion by the amino acid **carnitine**. The *acetylated* form of carnitine helps to facilitate more efficient utilization of fats than carnitine alone.

**Life Extension®** members continue to enjoy access to a full range of targeted supplements clinically shown to optimize energy production in the mitochondria. Just one capsule a day of **Mitochondrial Basics with BioPQQ™** supplies:

**BioPQQ™ ..... 10 mg**  
**R-lipoic acid ..... 100 mg**  
**Acetyl-L-carnitine ..... 250 mg**  
**arginate dihydrochloride**

Item # 01569



A bottle containing 30 capsules of **Mitochondrial Basics with BioPQQ™** retails for \$52. If a member buys four bottles, the price is reduced to just **\$34.50** per bottle.

PQQ can also be obtained as a low-cost standalone or in the **Mitochondrial Energy Optimizer with BioPQQ™** formula.

**To order  
Mitochondrial Basics  
with BioPQQ™  
call 1-800-544-4440 or visit  
www.LifeExtension.com**

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ArginoCarn® is a registered trademark of Sigma-tau Health Sciences, Inc. and is protected by US patents 6,365,622, US 6,703,042, and EP 1202956.

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Contains soybeans.

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.



Next-Generation Formula

## Enhanced Berry Complete with RZD™ Açai



### Another Breakthrough in Antioxidant Defense!

In 2008, Life Extension® introduced **Berry Complete**, a unique, high-potency blend of extracts from Nature's most powerful free radical fighters.<sup>1-5</sup> The antioxidant strength of just one capsule equaled **more than 50%** of the recommended five daily servings of fruits and vegetables.

Last year we introduced an *even more* powerful antioxidant formula. A single capsule of the new **Enhanced Berry Complete with RZD™ Açai** delivers an antioxidant value equivalent to **more than 100%** of the recommended daily fruit and vegetable intake.

It is also the first antioxidant formula to use a cutting-edge extraction technology called **Radiant Zone Drying™**. This patented process delivers the most *complete* nutritional profile of the **açaí berry**—for a breakthrough in antioxidant defense.

#### ORAC: A Measure of Antioxidant Power

To measure the antioxidant strength of various foods, scientists use what is known as the ORAC index. While berries score higher than most fruits and vegetables, **açaí** boasts one of the *highest* ORAC values known to modern science.

Unfortunately, most commercial products containing açai do not reflect the full nutritional content of the fruit. Only a *fraction* of its phenolic content survives industrial processing, handling, and storage.

**RZD™** extraction technology allows for optimal delivery of açai polyphenols, including highly beneficial **anthocyanins**, **proanthocyanidins**, and **flavonoids**, along with **essential fatty acids** and other vital compounds.

Why should this matter to you? It's more than a matter of antioxidant potency. In 2010, a team of researchers reported for the first time that **açaí**, **blueberry**, and

**strawberry** polyphenols may provide targeted support for cellular metabolic processes that promote neural and cognitive health in the aging brain.<sup>6</sup> But you need the *complete* polyphenolic profile to get the benefit.

Each vegetarian capsule of Enhanced Berry Complete with RZD™ Açai also contains standardized extracts of high-ORAC value foods including:

Blackcurrant	Grape
Blackberry	Cranberry
Elderberry	Prune
Wild blueberry	Strawberry
Wild bilberry	Pomegranate
Sweet cherry	Black soybean hull
Tart cherry	Blue corn
Raspberry	

Item #01406

**Enhanced Berry Complete with RZD™ Açai** gives you a convenient way to obtain a broad spectrum of seasonal, hard-to-find, highly perishable foods, for optimal antioxidant value.

A bottle containing 60 vegetarian capsules of **Enhanced Berry Complete with RZD™ Açai** retails for \$29. If a member buys four bottles, the cost is just **\$19.50** per bottle.

Contains soybeans. Contains corn.

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### Preamble

If you wonder what results are occurring with the millions of dollars that Life Extension® donates to cancer research, this article provides a real world report of a successful clinical trial conducted outside the United States.



# Innovative Laser Therapy Offers New Hope for Breast Cancer Patients

BY LOGAN BROMWELL

We are still losing the war on cancer.<sup>1</sup>

While the establishment brags that more cancer patients survive than ever before, the horrific side effects inflicted by conventional therapy often leave patients partially or severely debilitated, and set the stage for deadly secondary diseases.

Over 570,000 Americans are expected to die from cancer this year.<sup>2</sup> For those people, the dangerous mix of chemotherapy, radiation, and surgery not only failed to cure the cancer, but destroyed their remaining quality of life. Meanwhile, many promising therapeutic techniques languish in laboratories and private clinics, quashed by excessive FDA regulations and greedy pharmaceutical giants eager to protect their own lucrative turf.

But all of that may be about to change, thanks to pioneering work on breast cancer from a progressive clinic outside the US. There, a group of physicians and scientists have teamed up in a study that's the first of its kind: a human clinical trial using a sophisticated form of laser/immune therapy to treat advanced breast cancer.<sup>3</sup>

The technique is called **laser-assisted immunotherapy**.

This laser treatment has the potential to destroy primary breast tumors. This unique treatment can also seek and destroy cancer cells that have spread (metastasized) from the original tumor to other parts of the body. This is especially critical as metastasized cells are the primary cause of cancer death.

In addition to being a potentially effective cancer treatment, laser-assisted immunotherapy appears to be able to act as a *cancer vaccine*, effectively preventing the same cancer from recurring.

This innovative procedure may be the life-saving therapy that cancer patients have been waiting for. > >



## Laser-Assisted Immunotherapy: An Innovative Approach to Treating Advanced Cancers

An ideal approach to treating advanced cancers would accomplish two things:

1. Eliminate the original tumor.
2. Empower the immune system to destroy the cancer cells. Then, instead of having to locate and treat every infiltrated lymph node and every hidden **metastasis**, the body's natural tumor surveillance system would do its work, root out the cancer, and prevent recurrence.

This is the central principle behind laser-assisted immunotherapy.<sup>4,5</sup>

Laser-assisted immunotherapy involves no surgery, chemotherapy, or dangerous radiation. Instead, the

technique uses a precise laser beam to destroy the primary tumor, and then delivers a powerful boost to the immune system's natural cancer defense systems.<sup>4</sup> In this way, the entire immune system joins the fight against an individual's own specific cancer.<sup>6</sup>

Laser-assisted immunotherapy includes the following three components:

**1. A laser beam** operating in the “near-infrared” frequency of light.<sup>7</sup> This beam heats tissue to a depth of several centimeters, allowing the beam to penetrate directly into a solid tumor with minimal damage to normal tissue.<sup>8</sup> Because it can be focused directly through intact skin, no surgical incision is required. These lasers have been in use in cancer therapy for more than 20 years.<sup>9</sup> On their own, however, they can't safely raise the temperature of tumor cells without damaging adjacent healthy tissue.<sup>9,10</sup> That requires the use of a second component...

**2. A photosensitizer**, a chemical that makes cancer cells more vulnerable to destruction by the laser without the unacceptable heating of nearby normal cells.<sup>6</sup> The technique was proven in pre-clinical studies with the use of a compound called **indocyanin green (ICG)** as the photosensitizer. Like the laser, ICG is safe for clinical applications and is FDA approved. The combination of the laser and photosensitizer leads to localized destruction of tumor cells. However, these two components alone may not be effective at completely ridding the body of cancer because they cannot attack distant, often hidden tumor metastases.<sup>11</sup> To kill those, one more crucial component is required...

**3. An immune system booster**<sup>12</sup>, or “adjuvant,” that activates the cancer patient's natural cancer-attacking killer cells.<sup>7</sup> Growing tumors have multiple ways of evading the immune system, effectively concealing their abnormal nature from circulating immune surveillance cells. Once the tumor is partially broken up by the laser, however, the injection of the adjuvant then calls the immune system's attention to the newly revealed tumor markers.<sup>8,13</sup> Circulating immune cells can then begin killing malignant cells anywhere they have spread in the body.<sup>14</sup> This **immune booster** may soon be submitted to FDA for approval and those involved in submitting the New Drug Application have asked that we not disclose its name in print.







The key aspect of this approach is that the stimulated immune system attacks not only the primary tumor, but also metastases located anywhere in the body.<sup>4,6,15</sup> Because those metastases often bear the same abnormal *signal proteins* as the primary tumor, they now essentially have a mark on their back for the body's natural defense mechanism to seek out and destroy—no matter where they've moved to in the body.

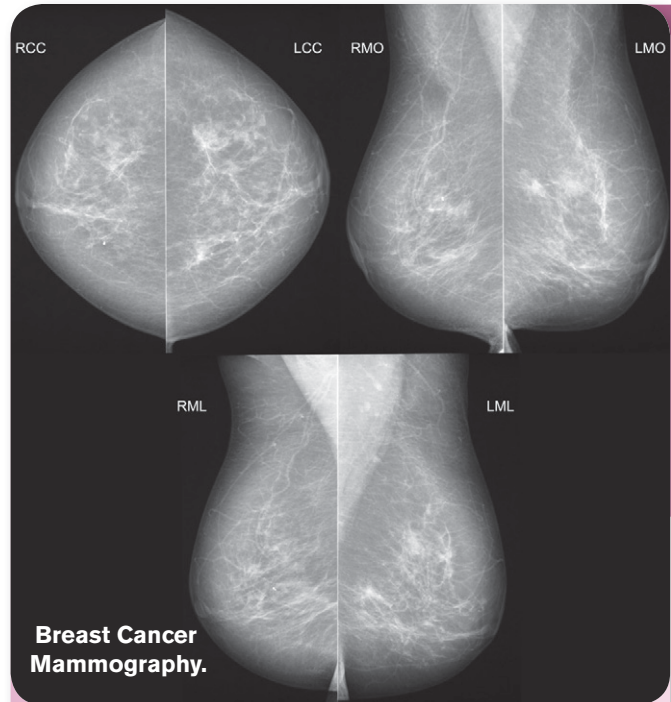
As an added bonus, the immune system “remembers” the identifying markers of the cancer and continuously maintains surveillance to prevent future recurrence.<sup>16</sup> In essence, laser-assisted immunotherapy creates a tiny “vaccine factory” within the victim's body that throws the entire immune system's resources at precisely that person's own tumor (see Sidebar at the end of this article for more on this topic).<sup>14</sup>

### Lab Studies Provide Dramatic Results

Laser-assisted immunotherapy has received compelling validation in the laboratory. When rats with experimentally induced breast cancer were subjected to the treatment, they experienced marked increases in survival rates.<sup>11</sup> In addition, researchers have documented the eradication of both primary tumors and metastases.<sup>11,16</sup> Most importantly, successfully treated rats have proven to be resistant to developing new tumors—even when cancer cells were directly injected into the animals' bodies.<sup>4,11</sup>

For the pre-clinical experiments, rats were injected with breast cancer cells, which formed localized primary tumors.<sup>3,4</sup> After 11 days, the animals were treated with the laser therapy with the *indocyanin green* or laser therapy with *indocyanin green* and the *immune booster* described above.

In the group of untreated animals, the primary tumors grew rapidly within the first month, and all animals died by **40 days**. The treated animals, on the other hand, had only modest growth of the primary tumor, which then proceeded to shrink in size—and



## Advanced Breast Cancer Treatment: Hope Is On The Horizon

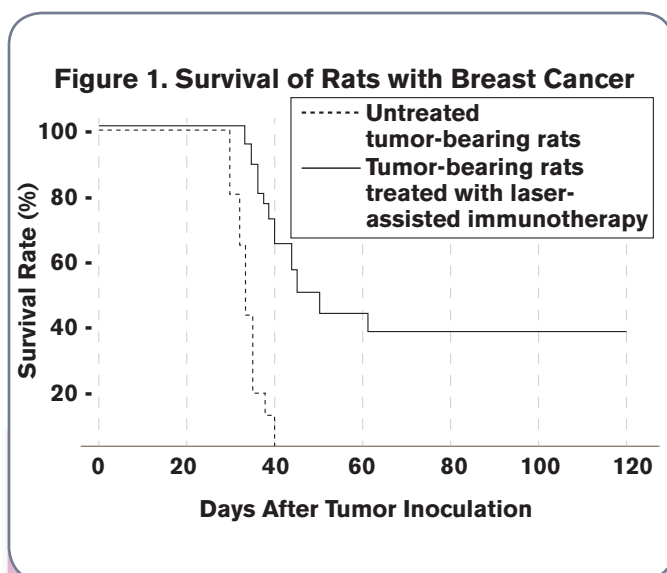
- Laser-assisted immunotherapy offers exciting possibilities in the war on cancer. This type of laser therapy has the unique ability to destroy both an advanced primary tumor and life-threatening metastases.
- Laser-assisted immunotherapy appears to be able to act as a *cancer vaccine*, effectively preventing the same cancer from recurring.
- Laser-assisted immunotherapy involves no surgery, chemotherapy, or dangerous radiation. Instead, the technique uses a precise laser beam to destroy the primary tumor, and then delivers a powerful boost to the immune system's natural cancer defense systems.<sup>4</sup>
- The results of the first human study are encouraging. Among all 15 subjects in the study, **80%** remain alive today. Compare that with the typical survival rate in the United States for women with such advanced breast cancer, which is only **23.8%** at 5 years.<sup>17</sup>

38% of the animals survived until the end of the study at 120 days (Figures 1 and 2).<sup>4</sup> Only animals administered the three-prong combination achieved long-term survival. In other words, the 38% of the animals that survived until the end of the study all received the full laser-assisted immunotherapy that included *indocyanin green* and the *immune enhancement* adjuvant.

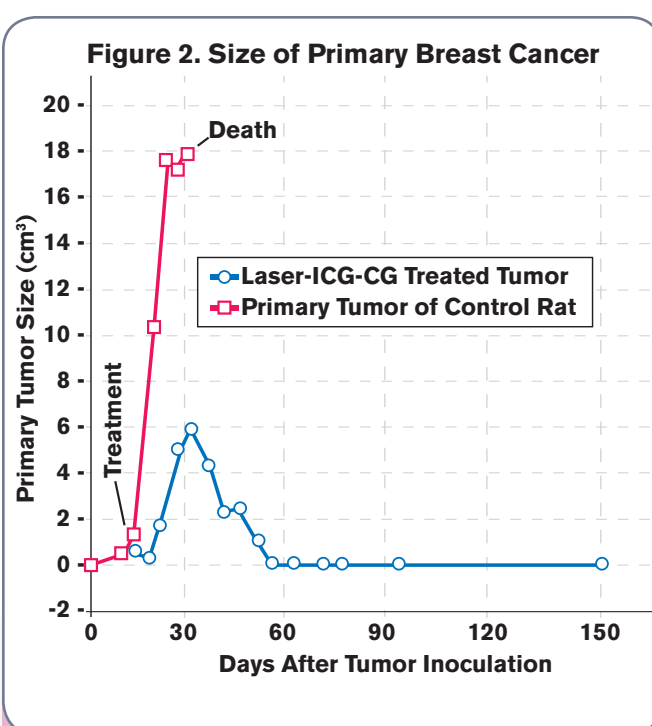
The most dramatic result—and the one with the greatest potential impact for people with breast cancer—was the effect on metastases. The untreated animals developed multiple metastases in the groin (inguinal) and armpit (axillary) areas.<sup>3,4</sup> In the treated group, however, the metastases were completely destroyed within 40 days (Figure 3).

### Human Breast Cancer Study Results: 80% Survival Rate for Stage IV Cancer

Energized by the striking results from the animal studies, a group called the **International Strategic Cancer Alliance** decided to bring the benefits of laser-assisted immunotherapy to women with breast cancer. This malignancy is expected to cause over 290,000 new cases this year in the US and affects millions of



After injection with breast cancer cells on day zero, untreated animals begin dying by day 30, and all are dead by day 40. But tumor-bearing animals treated with **laser-assisted immunotherapy** survived much longer and many were still alive by the end of the study.<sup>4</sup>



In an untreated animal, death occurred on day 32, following rapid growth of the primary breast cancer. The primary tumor grew much more slowly in a treated animal, peaked at about 30 days, and then gradually disappeared, becoming undetectable by day 65.<sup>4</sup>

women who battle with recurrence and remissions.<sup>2</sup> It is a significant cause of death, disfigurement, and disability.

The researchers were determined to evaluate the laser-assisted immunotherapy as soon as possible. Frustrated with the corrupt, inefficient, and time-consuming ways of the FDA—the all-powerful agency that regulates such research in the US—they chose a highly regarded private clinic in the Caribbean as the venue for their study.<sup>3</sup>

Because of the technique's unique ability to destroy both an advanced primary tumor and life-threatening metastases, the researchers decided to treat women with breast cancers that had already spread to the lymph nodes or to other parts of the body. Although the study was opened to 45 women, the following is a preliminary report on the first 15 subjects enrolled.

The study protocol was similar to that used in the animal studies described above. Subjects received two courses of treatment over two weeks, and were followed for one year. If needed, an additional course of treatment was available.



After a physical examination and blood testing, the women received an injection of a local anesthetic in the area of the primary breast cancer, followed by injection of the photosensitizing agent (**indocyanin green**) into the tumor. Next, the near-infrared laser was applied to the area in and around the tumor. During this phase, the laser destroyed cells in the primary superficial tumor, while exposing their biological markers to the subject's immune system.

After 10 to 12 minutes of laser therapy, the immune-boosting material was injected around and underneath the tumor. In this phase of the treatment, the subject's own immune system cells were drawn to the tumor area to attack the primary breast tumor, as well as the malignant cells in lymph nodes and metastases in other parts of the subject's body.

The results from this early study are encouraging, particularly in light of established rates of survival. Among all 15 subjects in the study, **80%** remain alive today. Compare that with the typical survival rate in the United States for women with such advanced breast cancer, which is only **23.8%** at 5 years.<sup>17</sup> (This study is so new that no woman has yet reached the 5-year milestone.)

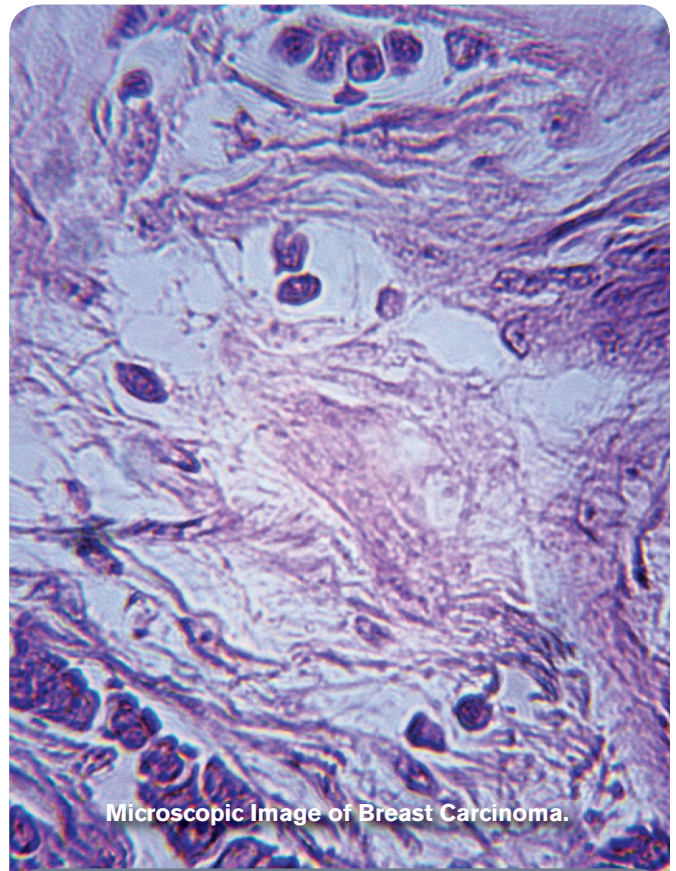
At the time of this writing, the women in the laser-assisted immunotherapy study had an average survival of more than **29 months** after treatment, and still counting. Results of conventional chemotherapeutic or anti-hormone breast cancer treatment aren't nearly as encouraging. One study reported an average survival of just **15.4 months**,<sup>18</sup> another small study reported survival up to **23.1 months**, but had no survivors by **3 years**.<sup>19</sup>

### Tales of Courage and Survival

Of course, compelling as they might be, numbers tell only a portion of any story about human health and longevity. The real picture of the treatment's potential comes from the real-life stories of the women who participated in this study. Here are just a few of those stories.

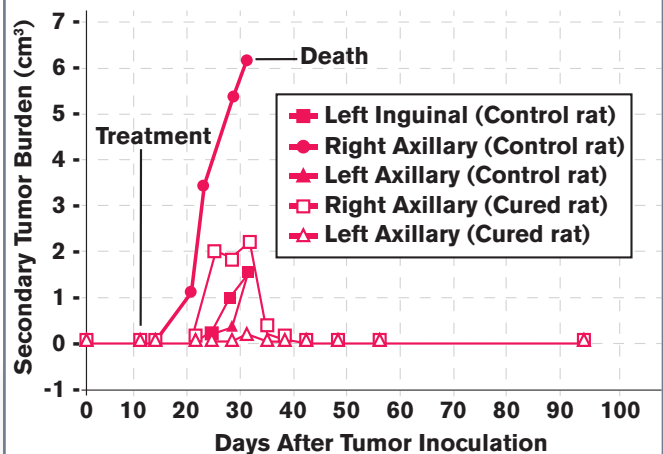
A 66-year-old woman enrolled in the study in August 2008, after having only a modest response to eight cycles of conventional chemotherapy. At the time of her enrollment, her disease had progressed to stage IV, with at least one metastasis as diagnosed with a PET/CT scan. She received one full laser-assisted immunotherapy treatment in December 2008. A follow-up PET/CT scan showed disappearance of the primary tumor, and no new metastases or lymph node involvement.

One year and nine months after the treatment, this patient received the following mammography report:



Microscopic Image of Breast Carcinoma.

Figure 3. Size of Breast Cancer Metastases



Metastatic tumors in an untreated animal rapidly grew in size, culminating in the animal's death on day 30. By contrast, those in the treated animal grew modestly, peaked at about day 32, and then rapidly regressed. No metastases were detected after day 40 in the treated animal, which survived to the end of the study.<sup>4</sup>

*“The result of your breast imaging exam shows no evidence of cancer.”*

She remains disease-free at more than 3 years and 4 months following treatment.

A 78 year-old woman with stage IV breast cancer, who had received no conventional treatment, enrolled in the study in January 2009. After undergoing the laser-assisted immunotherapy, a follow-up PET/CT scan revealed no visible cancer and no metastases. She did experience a brief recurrence of the tumor, but that condition resolved without further therapy.

More than 3 years later, she too remains disease-free.

Two women with earlier stage cancers (stage II) entered the study in 2009; one had received some conventional therapy while the other had none. Following laser-assisted immunotherapy, both subjects remain alive and disease-free today.

These cases show the great potential of laser-assisted immunotherapy in treating breast cancer. No therapy is perfect, however, and it's important to note that not all of the women in the study experienced the same results as the ones mentioned above.

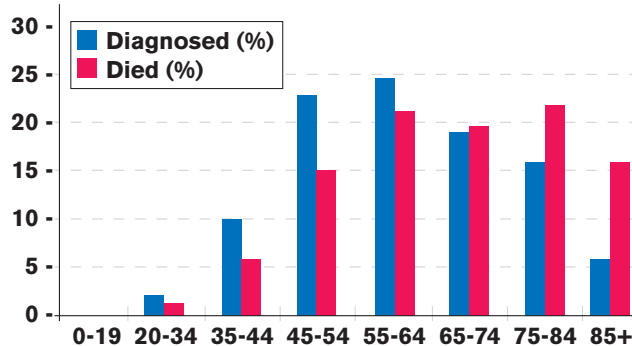
For example, a 65-year-old woman with stage IV breast cancer enrolled in the study in August 2008, after a number of failures of conventional therapy. She did experience some tumor recurrence requiring surgery 15 months after her initial laser treatment, but

### Important Facts about Breast Cancer

According to the National Cancer Institute:

- There are more than **2.75 million** living women with a history of breast cancer, including those with active disease and those who have been cured.<sup>24</sup>
- One in eight women (**12.38%**) born today will be diagnosed with breast cancer at some time in their lives.<sup>25</sup>
- **5.72%** of women will develop cancer of the breast between their 50th and 70th birthdays.<sup>25</sup>
- The median age at diagnosis for breast cancer is 61 years old (Figure 4).<sup>26</sup>
- The median age of dying from breast cancer is 68 years old (Figure 4).<sup>26</sup>
- Overall 5-year survival for women with breast cancer is **90.3%**. For those with cancer that has metastasized (stage IV), however, just **23.8%** (or fewer) remain alive 5 years after their diagnosis.<sup>27</sup>
- There has been a fluctuating trend in breast cancer incidence since 1975 (Figure 5).

**Figure 4. Ages at Diagnosis and Death from Breast Cancer**



Breast cancer can occur as early as the late 20s, but diagnoses peak by about age 60 (blue bars). Rates of death from breast cancer rise sharply between early middle age, and remain high well into advanced years (red bars).<sup>26</sup>

survived until 3 years and 3 months after the start of the study. The experimental treatment may have prolonged her life, but there is no way to be certain.

### Summary

Laser-assisted immunotherapy is a promising new weapon in the war on cancer. The results of this study so far show **80%** of the participants still alive today compared to the typical 5-year survival rate in the US of only **23.8%** for advanced breast cancer. Providing a non-toxic therapy that supports and stimulates rather than destroys the body's best defense arsenal, the immune system, is a monumental gain against the tenacious and formidable opponent known as cancer.

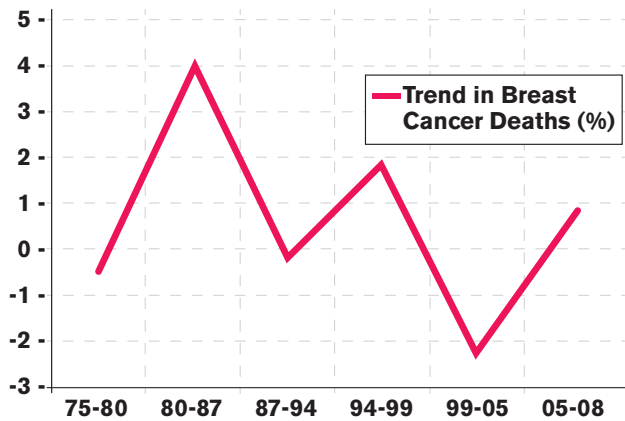
Of particular significance is the lack of serious side effects caused by laser-assisted immunotherapy. Even lumpectomies can result in significant mutilation to the affected breast, while follow-up radiation, chemotherapy and hormone-blocking agents result in debilitating initial side effects and deadly long-term toxicities.

For example, in a report released last month that studied 12,000 breast cancer survivors, there was a **470% increased** risk of developing **heart failure** in the group receiving chemotherapy compared to breast cancer patients who did not undergo chemotherapy.<sup>20</sup> The cancer establishment considers those treated with chemotherapy to be successes if they survive the cancer, but conveniently ignores the fact that the treatment causes heart failure.

The objective of laser-assisted immunotherapy is to eradicate the primary tumor along with metastatic lesions without inflicting the side effects associated with conventional breast cancer treatment. ●



**Figure 5. Trend in Breast Cancer Deaths (%)**



Rates of death from breast cancer have fluctuated since the mid-1970s. Points above the zero line indicate periods of increased death rates; points below the line indicate periods of declining death rates.<sup>26</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.

For more information regarding the availability of the laser-assisted immunotherapy for breast cancer, please call International Strategic Cancer Alliance at 888-868-2981.



### Creating a Customized Cancer Vaccine

Developing an effective anti-cancer vaccine has been the goal of oncology for decades.<sup>21,22</sup> The idea is to identify one or several markers, or antigens, borne only by tumor cells, for use in the manufacture of a vaccine. In theory, such a vaccine could eliminate cancer once and for all.<sup>22</sup> The vaccine could even be beneficial for those with existing cancers, as the vaccine could expedite destruction of the existing tumor by activating the immune system.

However, like most attempts at a “one-size-fits-all” strategy, this approach has flaws that limit its appeal. Often what appears to be a single tumor actually contains multiple different cell lines, each bearing a unique marker, and each affecting patient survival differently.<sup>23</sup> A cancer vaccine prepared in a laboratory therefore has essentially zero chance of raising an immune response to every cell type in any one person’s tumor, allowing a few to survive and produce cancer recurrences.

This situation is quite similar to the well-known annual quandary of flu vaccine manufacturers. Based on the best available information about the *previous* year’s flu virus, they must make an educated guess about which specific viral components to include in the *upcoming* year’s vaccine (e.g., H1N1, H5N1, etc). Most years they are successful, but occasionally a virus appears for which we are entirely unprotected.

Laser-assisted immunotherapy eliminates this kind of guesswork. That’s because the “vaccine” is manufactured within each individual person’s body, in response to their own unique tumor markers. This customized vaccine can then direct all of the immune system’s powerful resources to eliminating the existing cancer, at the same time producing persistent immunity against future recurrences.<sup>14</sup>

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# Overlooked Benefits of Properly Formulated **PROBIOTICS**

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

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

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

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

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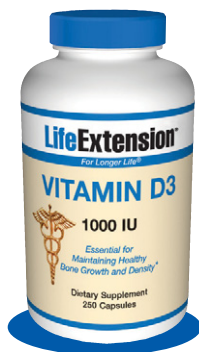
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7,846,487, EP1435906 81 and worldwide patents pending.

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## Vitamin D3 1,000 IU 250 capsules

Retail: \$12.50

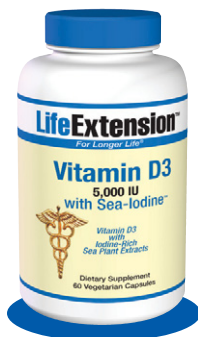
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Member Price: **\$8.44 ea.**

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

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## Vitamin D3 5,000 IU with Sea-Iodine™\* 60 vegetarian capsules

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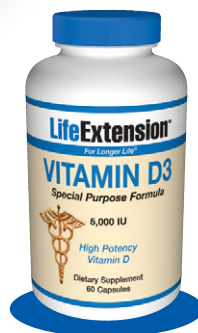
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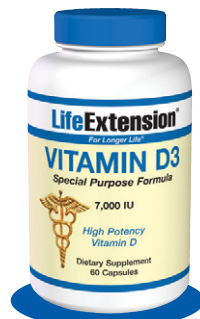
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Retail: \$14

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 capsule should enable these individuals to attain 25-hydroxyvitamin D blood levels above the desired range of 50 ng/mL.

Item # 01418

Please refer to website for allergen information.



## 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 powdered capsules, this liquid emulsion of vitamin D can be used.

Item # 00864

**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 hypercalcemia (high blood calcium levels). People with kidney disease, certain medi-

cal conditions (such as hyperparathyroidism or sarcoidosis), and those who use cardiac glycosides (digoxin) or thiazide diuretics should consult a physician before using supplemental vitamin D.

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







# Dorothy Hamill:

## *An Inspiration On and Off the Ice*

BY JON FINKEL

Mention the name Dorothy Hamill to adults who lived through the 1970s and one phrase immediately pops up: America's Sweetheart. This title was bestowed on Hamill after her captivating performance in the 1976 Olympics, where she earned a gold medal in figure skating at the age of 19. To say her star took off after her triumph would be one of the bigger understatements in sports. Practically overnight, Hamill went from earning a self-confessed going rate of two dollars an hour for babysitting to being offered thousands of dollars a week to do what she loved: ice skate.

She would go on to star in the Ice Capades for seven years before actually owning it for a short time. By traveling the country, appearing on television in skating specials, and showing up for interviews during many winter Olympics, Hamill has remained in the public eye, though the headlines about her that appeared a few years ago had nothing to do with skating. > >





## A Tough Diagnosis

Most people assume that celebrities lead a charmed, worry-free life, but no amount of fame or achievement in the name of your country can give you immunity from cancer. About five years ago, Hamill was diagnosed with breast cancer, and suddenly, like other cancer patients, her life changed.

“With cancer, once I got diagnosed, I knew I had to have surgery,” she says. “It’s not like in ice skating, where you know if you work harder, you can achieve the result you want. Once you get your diagnosis you have to do as best you can on your mental outlook and do your research to understand how complex cancer is.”

For someone who had spent the better part of her young life willing her body to achieve her dream, Hamill found herself in a struggle where she no longer controlled the outcome.

“I think, for me, it was more that I tried to keep a positive outlook from the start,” she says. “I look at it like I was very lucky in getting my diagnosis with the timing and all of the advances in medicine that have been made recently.”

Not only did Hamill benefit from those advances, she actually volunteered to participate in a study to help future patients.

## Helping Future Cancer Patients

“When I first got diagnosed, the plan was that I would have surgery, radiation, then chemo,” she explains. “But then I went to the Kimmel Cancer Center at Johns Hopkins for a second opinion and they said that I didn’t need the chemo. Apparently there had just been a study released that showed that with the particular form of breast cancer that I had, having chemo in addition to radiation didn’t affect the chance of recurrence.”

At this point, Hamill could have simply gotten her treatment and gone home, but she had a much more altruistic vision of how she was going to do her part to not only beat her cancer, but to help other women beat their cancer.

“Around the time of my surgery there was a study starting that would measure the effectiveness of *aromatase inhibitors*,” she says. “I felt that since I got to benefit from others who had participated in studies it was only fair that I do my part.”

Hamill says that her cancer was hormone related, which is why her doctors mentioned the study. For those that don’t know, aromatase is the enzyme that synthesizes estrogen. Studies have shown that most cases of breast cancer require estrogen to grow, so taking an aromatase inhibitor may block the production of estrogen or prevent the normal response of estrogen, thus starving the tumor. Unfortunately, the new drugs (aromatase inhibitors) didn’t help Hamill at all. In fact, they were making her ill.

“The fact that I was part of that study, that’s how I knew that I was feeling worse and worse and worse,” she says. “Soon, they switched my medication and the doctors told me, ‘These drugs are just not for you.’”

The reason *aromatase inhibitor* drugs make some women feel so lousy is that it deprives them of estrogen. While this has been shown to improve survival odds in women with estrogen-receptor positive breast tumors, the severe depletion of estrogen can be too much for many women to handle, and there may be long-term side effects such as bone loss.\*



## Dorothy Hamill's Skating Accomplishments

- United States National Champion in figure skating: 1974, 1975, 1976
- World Championship Winner: 1976
- Olympic Gold Medal winner: 1976
- US Figure Skating Hall of Fame member
- Olympic Figure Skating Hall of Fame member
- World Figure Skating Hall of Fame member

### Focusing on Recovery

It's now been almost five years since her surgery and radiation.

For the first three years post-surgery, Hamill felt fatigued and achy from the operation, radiation, and the medication she was still taking.

"Right after the radiation I was so tired and fatigued, that's when doctors suggested that I start taking vitamin D," she says.

Many patients undergoing radiation have low levels of vitamin D that may go undiagnosed by their doctors. When those levels are brought back to normal with vitamin D3 supplementation, many patients feel their energy levels return as well.

In addition to the vitamin D, Hamill takes a multivitamin and eats a healthy diet that includes lots of seafood in order to get the appropriate amount of omega-3s.

"I eat lots of fish because we're in Nantucket," she says. "I generally eat healthy, but I'm more aware of what I should be eating now than before. When I was training I worked with a kinesiologist and took potassium supplements and all kinds of things to stay in peak form."

Along with her diet and her supplements, Hamill relied on her loving family and the doctors at Hopkins, who she feels were amazing, to help her through her recovery.

"My husband and daughter were there for me the whole way," she says. "And the doctors at Hopkins were incredible. Any time I had a question, they'd take a phone call day or night."

### Moving Beyond Cancer

These days, Hamill says that she's feeling well and doing well. She skates every day and runs a fantasy camp for adults, though she says her performing days may soon be behind her.

"The aches and pains of slamming into the ice for all those years have taken their toll," she says. "I'm getting a little too old to perform, but skating is the one place where I feel energized. It's always been therapeutic for me. I love the cool air, the wind in my face. I can't do some of the simple things that used to be easy, but I still love it."

In addition to skating, Hamill does some yoga and likes to do some running and biking for exercise. Much of her time, however, is devoted to charity work.

"At this point, I'll do performances to raise money for various kinds of cancer," she says. "I try not to limit my efforts to just breast cancer. I've worked with Scott Hamilton and his big benefit for the Cleveland Clinic. I've worked with the Dana Farber Institute and the Jimmy Fund over the years to help raise money for children's cancer research."

Some of her most important work is with a program called I-Skate at the Kennedy Krieger Institute in Baltimore, where she works with kids who have spinal cord injuries and neurological problems.

"We have a skating session every Sunday during the winter," she says. "Some of the kids are in wheelchairs, others have braces or crutches or different disabilities. We've been doing it for four years and we've seen some of these kids from little kids who were using walkers to those same kids actually knowing how to skate on their own. The kids don't have any idea who I am or that I was an Olympic ice skater, but the joy on their beautiful faces is amazing."

The happiness in Hamill's voice as she describes her work with these children is evident. So is that positive outlook she mentioned earlier.

"As great as things can be, you know that some day something is going to come up," she says. "When you look at the rest of the world, I think of my cancer and say, 'Thank goodness it's only this.' That doesn't mean that it can't come back or won't come back, but I keep a positive outlook and do what I enjoy doing." ●

To learn more about Dorothy Hamill or to donate to the Kennedy Krieger Institute, visit [www.dorothyhamill.com](http://www.dorothyhamill.com).

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

\* Hind D, Ward S, De Nigris E, Simpson E, Carroll C, Wyld L. Hormonal therapies for early breast cancer: systematic review and economic evaluation. *Health Technol Assess*. 2007 Jul;11(26):iii-iv, ix-xi, 1-134.

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



Item # 01482

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

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

## Sesame Lignans and Standardized Olive Fruit Extract for Enhanced Benefits

Fish oils (and other fatty acids) have a tendency to oxidize, rendering them nutritionally inferior. Scientific studies show that when added to fish oil, **sesame lignans** safeguard against oxidation and direct fatty acids toward pathways that help with inflammatory reactions.<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 just **\$21** per bottle. If **10 bottles** are purchased, the cost is just **\$18.68** per bottle. (Item # 01482)



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

## A SMALLER SOFTGEL for easier swallowing!

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

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

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

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

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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.



# Comprehensive VITAMIN K Formula

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

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

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

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

Item # 01224

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

<b>Vitamin K1</b>	<b>1000 mcg</b>
<b>Vitamin K2 (MK-4)</b>	<b>1000 mcg</b>
<b>Vitamin K2 (MK-7)</b>	<b>100 mcg</b>



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

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

#### **Warning to Coumadin® (warfarin) Drug Users**

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

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

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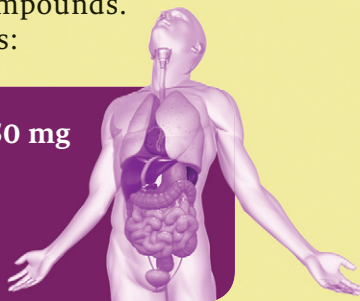
# Unleash the Power of the Milk Thistle Seed

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

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

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

**Milk Thistle (*Silybum marianum*) Extract (seed) 750 mg**  
[std. to 80% Silymarin (600 mg),  
30% Silibinins (225 mg),  
and 8% Isosilybin A and Isosilybin B (60 mg)]



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

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

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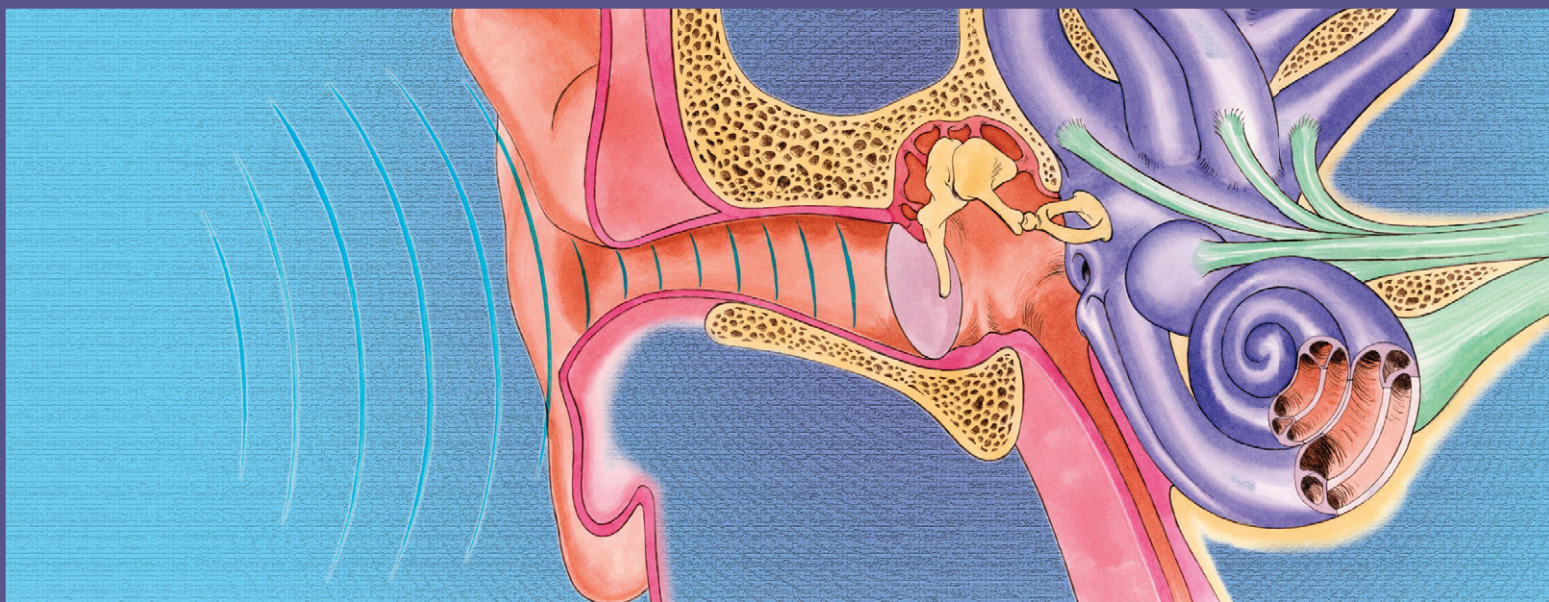


Item # 01522

To order **Certified European Milk Thistle**  
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. This product is not intended to diagnose, treat, cure, or prevent any disease.





# 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!**

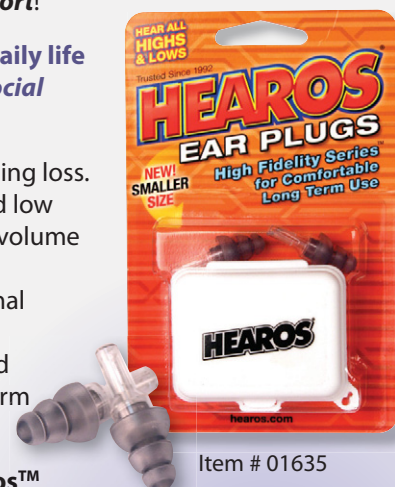
**Don't let the sounds of daily life ruin your hearing. Get social hearing protection now!**

- 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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Item # 01635



Item # 01629

To order **Hearos™ Hi-Fidelity Ear Plugs**, call **1-800-544-4440** or visit **[www.LifeExtension.com](http://www.LifeExtension.com)**







# EPIGENETICS *for Breast Cancer Prevention*

BY ALEXANDER JOHNSON

Every year, nearly **250,000** women learn that they have invasive breast cancer. Roughly **58,000** more will be diagnosed with early cases of the disease.<sup>1</sup> And about **40,000** will die.<sup>2</sup>

Some women are so paralyzed by the fear of this disease that they undergo double mastectomies in a drastic attempt to prevent it from occurring.

Despite these dire numbers and drastic actions, there is hope for the prevention of breast cancer. And it doesn't come in the form of risky surgical procedures—it comes from nature itself.

Up to **50%** of breast cancer cases are now thought to be preventable through simple changes in diet and lifestyle.<sup>3,4</sup> The use of specific agents to prevent cancer from developing is called **chemoprevention**. Utilized properly, chemoprevention should be able to eliminate pre-malignant cells, block the progression of normal cells into invasive tumors, and ultimately stop a cancer before it ever reaches a size that could cause symptoms or be detected.<sup>5</sup>

Research has demonstrated that there are scores of nutrient molecules with potent, and often multiple chemotherapeutic effects. For example, calcium, selenium, and vitamin D have all shown some effect in reducing cancer occurrence.<sup>6</sup> An even larger array of nutrients is responsible for changes that promise powerful chemoprevention against breast cancer.<sup>7</sup>

In this article we'll explore some of the most exciting implications of the power of nutritional supplementation to prevent breast cancer. Then we'll give you a rundown of nearly three dozen specific nutrients that hold out special hope in the fight against this epidemic killer. > >

Revolutionary New Science Holds  
The Key to Breast Cancer Prevention

A relatively new science called *epigenetics* has shed light on the enormous control we as individuals have on whether or not we develop cancer. The science of epigenetics is the study of long-lasting changes in *gene function* that do not involve changes in *gene structure*.<sup>9</sup> Epigenetics has taught us that we can use factors such as nutrients to turn a gene on and off.<sup>10</sup>

If the gene that's activated is a *tumor-suppressor gene* (a gene that prevents excessive cell replication), or one that triggers *termination of defective cells* (such as pre-malignant cells through normal apoptotic processes), these epigenetic modifications are capable of blocking the progression of a cancer cell.<sup>10</sup>

The science of *epigenetics* has finally explained how nutrients and certain drugs can change the way breast cancer cells age and reproduce.<sup>9</sup>

Based on the science of epigenetics, Big Pharma is now racing to produce chemopreventive drugs.<sup>7</sup> But nature is far ahead, as usual. Scores of researched nutrients have potent, and often multiple, epigenetic and chemotherapeutic effects (Table 1)—without the side effects associated with drugs like **tamoxifen**, which the FDA approved for breast cancer prevention.

In the next section, we'll look at nature's most powerful chemopreventive nutrients (and a few drugs), how they work, and what they may mean for the future of breast cancer.<sup>11</sup>

TABLE 1. Risk Reduction for Breast Cancer  
By Specific Compounds

Nutrient	Reduction in Breast Cancer Risk
Aspirin	20-32% <sup>62,66,146</sup>
Coffee	40% <sup>147</sup>
Conjugated Linoleic Acid	60% <sup>148</sup>
Fish Oil, Omega-3 Fats	73-81% <sup>149</sup>
Green Tea	22-48% <sup>150-152</sup>
Lycopene	40-68% <sup>153-155</sup>
Melatonin	38% <sup>156</sup>
Metformin	23-56% <sup>157,158</sup>
Resveratrol	61% <sup>159</sup>
Soy & Soy Isoflavones	18-92% <sup>160-162</sup>
Vitamin D	11-44% <sup>87,163</sup>

Nature's Cancer-Preventing Nutrients

What follows are 11 categories of targeted nutrients that have been studied for their impact on breast health and cancer prevention. You can choose what combination of nutrients would be most effective for your situation. At the end of this report is a dosing table.

Most of the nutrients in this list have multiple ways in which they help to prevent cancer. That's because each individual nutrient has many different biochemical targets in breast cancer prevention. Because cancer has multiple causes and phases of development, scientists are well aware that a multi-targeted approach is the best way to attack a disease like cancer.

1. Nutrients that Prevent  
DNA Damage

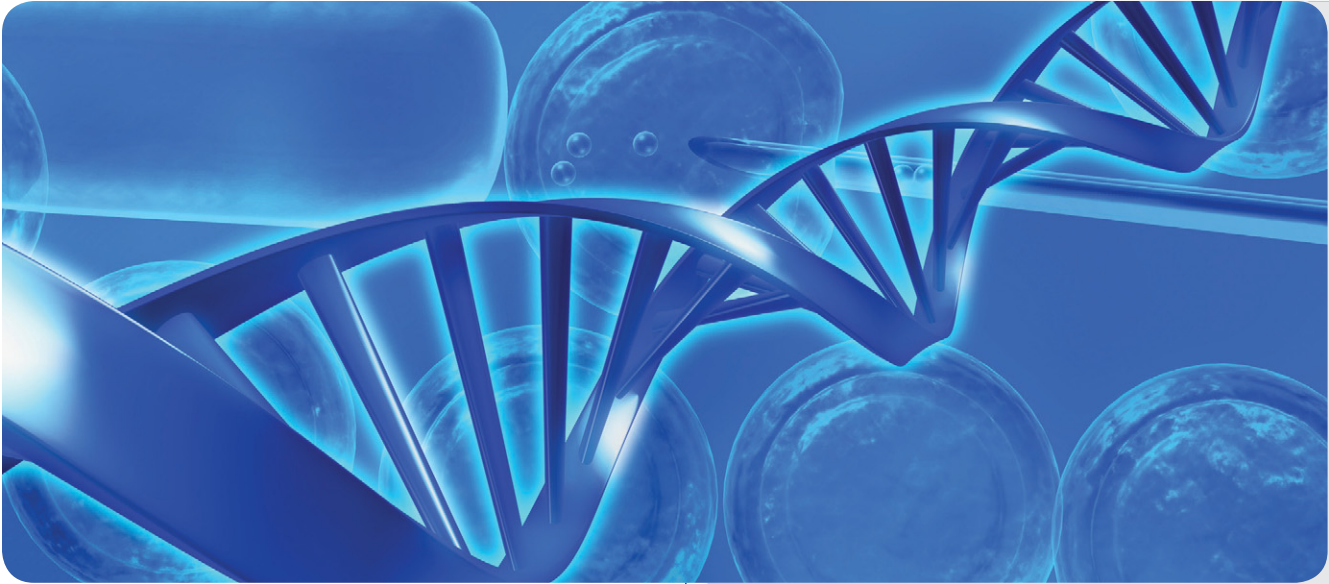
Breast cancer, like all others, invariably begins with some change to the DNA structure or function of an individual cell. Both DNA damage and a change in the way a normal gene is expressed can trigger a cell to become malignant. In either case, a tumor suppressor gene can become silenced, allowing unregulated cell replication, or a tumor promoter gene can become activated. However, many nutrients work to prevent the DNA damage that can lead to a cell becoming cancerous.

The list of nutrients proven to have anti-breast cancer effects is long, a tribute to the role of oxidant damage in breast cancer formation. Antioxidant nutrients proven to have anti-breast cancer effects include:

- Coenzyme Q10 (CoQ10)<sup>14-17</sup>
- Coffee and many of its constituents<sup>18-20</sup>
- Curcumin<sup>21-23</sup>
- Green tea polyphenols, especially epigallocatechin gallate (EGCG)<sup>24</sup>
- Indole-3-Carbinol (I3C)<sup>25</sup>
- Lycopene<sup>26,27</sup>
- Melatonin<sup>28</sup>
- Metformin<sup>29</sup>
- N-acetylcysteine (NAC)<sup>30-35</sup>
- Pomegranate juice and extracts<sup>36-38</sup>
- Resveratrol<sup>39</sup>
- Selenium<sup>40</sup>
- Silibinin and silymarin<sup>21,41-47</sup>
- Soybean flavonoids genistein and diadzein<sup>40,47</sup>
- Sulforaphane<sup>48</sup>
- Tocotrienols<sup>49-53</sup>







## 2. Nutrients that Control Regulatory Genes

Processes called *hypermethylation* and *histone deacetylation* can unlock undesirable epigenetic expression or suppress regulatory genes. Fortunately, a number of nutrients block these processes, and therefore can help to prevent the epigenetic changes that lead to breast cancer. These include:<sup>7,11</sup>

- Omega-3 fatty acids from fish oil<sup>54</sup>
- Lycopene<sup>55</sup>
- Genistein, a soy isoflavone<sup>55</sup>
- Resveratrol<sup>56,57</sup>
- Caffeic acid, a component of coffee<sup>19</sup>
- Sulforaphane from cruciferous vegetables<sup>10,58,59</sup>

## 3. Nutrients that Fight Cancer-Promoting Inflammation

Once a cell has become malignant, inflammation is a powerful epigenetic promoter of the next steps in the process of cancerous transformation.<sup>60</sup> Nature provides many natural anti-inflammatory molecules with specific promise in breast cancer chemoprevention, including the following:

- Acetylsalicylic acid (aspirin)<sup>61-66</sup>
- Conjugated linoleic acid (CLA)<sup>67,68</sup>
- Coffee compounds<sup>18,69</sup>
- Curcumin<sup>70,71</sup>
- Omega-3 fatty acids EPA and DHA from fish oil<sup>72</sup>
- Pomegranate extracts<sup>73</sup>
- Quercetin<sup>74</sup>
- Resveratrol<sup>39</sup>
- Vitamin D<sup>75</sup>

## Activate Powerful Cancer Protection with Natural Nutrients

- Breast cancer threatens the lives of millions of women.
- Breast cancer is caused by a complex interaction of multiple dietary, lifestyle, environmental, and genetic factors.
- The science of epigenetics, the study of how genes can be expressed differently without changes in actual gene structure, has provided profound new insights into breast and other cancers.
- A large number of nutrients have now been found to exert favorable epigenetic effects on breast cancers from the moment a cell undergoes malignant transformation through the fully-developed tumor's attempts to invade and metastasize.
- Nutrient-based epigenetic chemoprevention represents an entirely new front in the battle against breast cancer.

#### 4. Nutrients that Block Excessive Cell Replication

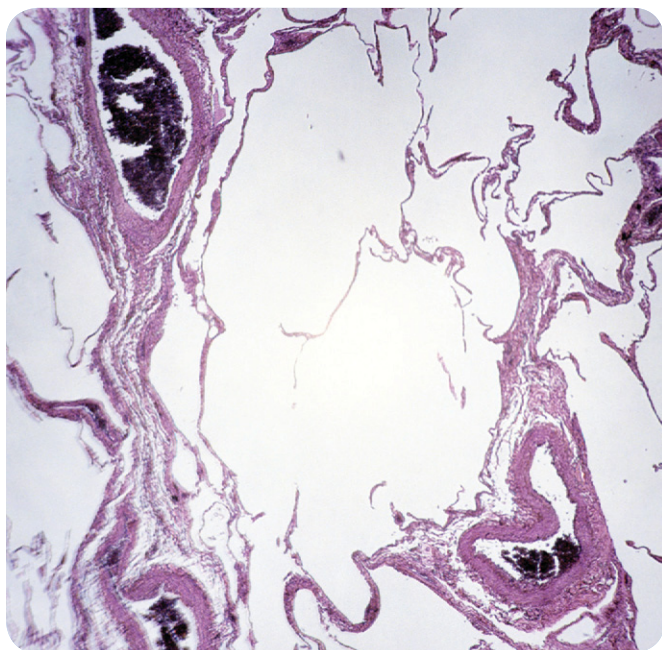
The excessive rate of cell replication is one of cancer's best-known features. Many nutrients are capable of blocking the continuous churning of the cellular replication cycle and slowing or stopping cancer growth, which ultimately contributes to breast cancer chemoprevention through epigenetic means. These include:

- Apigenin, a yellow flavone molecule found in many plants<sup>76</sup>
- Aspirin<sup>77</sup>
- Coffee components<sup>78</sup>
- Indole-3-Carbinol (I3C) from cruciferous vegetables<sup>79,80</sup>
- Melatonin<sup>81</sup>
- Pterostilbene, a close relative of resveratrol<sup>82</sup>
- Selenium<sup>83</sup>
- Sulforaphane from cruciferous vegetables<sup>10,84</sup>

#### 5. Nutrients that Transform Malignant Cells Back into Healthy Ones

Even after cells have undergone malignant transformation, there's a chance to reverse that process by forcing them to "differentiate" back into normal tissue-forming cells. Nutrients that promote the differentiation of breast cancer cells include:

- Conjugated linoleic acid (CLA)<sup>85</sup>
- N-acetylcysteine (NAC)<sup>32</sup>
- Vitamin D<sup>86,87</sup>



Breast carcinoma.

#### Breast Cancer Facts

- Breast cancer is the most common cancer among women in Western countries.<sup>12-13</sup>
- It takes a greater toll on women 40 or older, among whom **95%** of new cases and **97%** of deaths occur.
- The median age at breast cancer diagnosis is 61 years.
- The peak incidence of the disease occurs between ages 75 and 79, with 421 new cases per 100,000 women.<sup>1</sup>

#### 6. Nutrients that Trigger the Death of Cancer Cells

A powerful natural means of controlling cell replication is the process of **apoptosis**, or programmed cell death. Normal cells have the ability to self-destruct if they receive signals that they are replicating too rapidly. Malignant cells lose this ability, contributing to their overwhelming growth rate. A number of nutrients have the ability to restore breast cancer cells' ability to die by apoptosis, including the following:

- Apigenin<sup>76,88,89</sup>
- Coffee compounds<sup>78</sup>
- Conjugated linoleic acid (CLA)<sup>90</sup>
- Curcumin<sup>91,92</sup>
- Green tea polyphenols and EGCG<sup>24</sup>
- Indole-3-Carbinol (I3C)<sup>79,93</sup>
- Melatonin<sup>94</sup>
- N-acetylcysteine (NAC)<sup>95</sup>
- Pomegranate<sup>96,97</sup>
- Quercetin<sup>98</sup>
- Selenium<sup>83</sup>
- Silibinin<sup>99</sup>
- Soy Isoflavones<sup>97,100,101</sup>
- Tocotrienols<sup>102,103</sup>
- Vitamin D<sup>94</sup>

#### 7. Nutrients that Restore Receptors that Enhance Standard Treatments

Roughly **70%** of breast cancer cells depend on a continuous supply of estrogen for their growth, while a smaller number of cancers depend on the growth factor called HER2/neu. These cancers can potentially be treated by interfering with the receptors, making them (at least in theory) less dangerous.

Between **15** and **25%** of breast cancers, however, are so-called "triple-negative" cancers, meaning that they lack any of the three receptors (estrogen,





progesterone, or HER2/neu), and are correspondingly resistant to treatment. Among the most exciting discoveries in the epigenetics of nutrients for cancer chemoprevention is that many nutrients can restore one or more of those receptors to the surface of breast cancer cells, lowering the bar to effective standard treatments such as the estrogen receptor blocker tamoxifen.<sup>15</sup>

Other nutrients can modify at least one of the receptors, impairing the cells' ability to receive the growth signals they require, and triggering their early death.

Nutrients (and a drug) capable of epigenetic chemoprevention through modification or restoration of breast cancer receptors, or which have effectiveness against triple negative cancers include:

- Coffee<sup>104,105</sup>
- Conjugated linoleic acid (CLA)<sup>106</sup>
- Curcumin<sup>107</sup>
- Green tea polyphenols<sup>11,108</sup>
- Melatonin<sup>109</sup>
- Metformin<sup>110</sup>
- Omega-3 fatty acids from fish oil<sup>111</sup>
- Sulforaphane from cruciferous vegetables<sup>11,112</sup>

### 8. Nutrients that Inhibit Estrogen Production

The enzyme *aromatase* is responsible for producing estrogen in body tissues, including breast cells. Therefore, inhibiting aromatase activity is an important means of slowing the growth of the **70%** of estrogen-dependent breast cancers. Nutrients capable of chemoprevention through aromatase inhibition include:

- Chrysin<sup>113</sup>
- Enterolactone from lignan extract<sup>114</sup>
- Grape seed extract<sup>115</sup>
- Hops extracts<sup>116</sup>
- Melatonin<sup>109</sup>
- Pomegranate<sup>117</sup>
- Vitamin D<sup>75</sup>

Note: aromatase inhibiting drugs like Arimidex® (anastrozole) have far more potent estrogen-suppressing effects, but they lower estrogen so much that they can induce severe menopausal effects.

### 9. Nutrients that Block Abnormal Growth Factors

In addition to estrogen, progesterone, and HER2/neu, a number of other growth factors act on breast cancer cells. Inhibition or epigenetic modification of these growth factors is a major target in breast cancer chemoprevention, especially by the following nutrients:

- Apigenin<sup>118</sup>
- Conjugated linoleic acid (CLA)<sup>119</sup>
- Curcumin<sup>92</sup>
- Gamma tocotrienol<sup>120</sup>
- Green tea polyphenols<sup>108,121</sup>
- Indole-3-Carbinol (I3C)<sup>80</sup>
- Melatonin<sup>94</sup>
- Omega-3 fatty acids<sup>111</sup>
- Silibinin<sup>41</sup>
- Sulforaphane<sup>59</sup>
- Vitamin D<sup>94</sup>

### Breast Cancer: The Basics

By the time breast cancer is detectable, it has already gone through a lengthy and complex series of events that turned a normal, healthy cell into a cancerous one. Basically, cancer occurs when cellular replication has gone awry.<sup>8</sup>

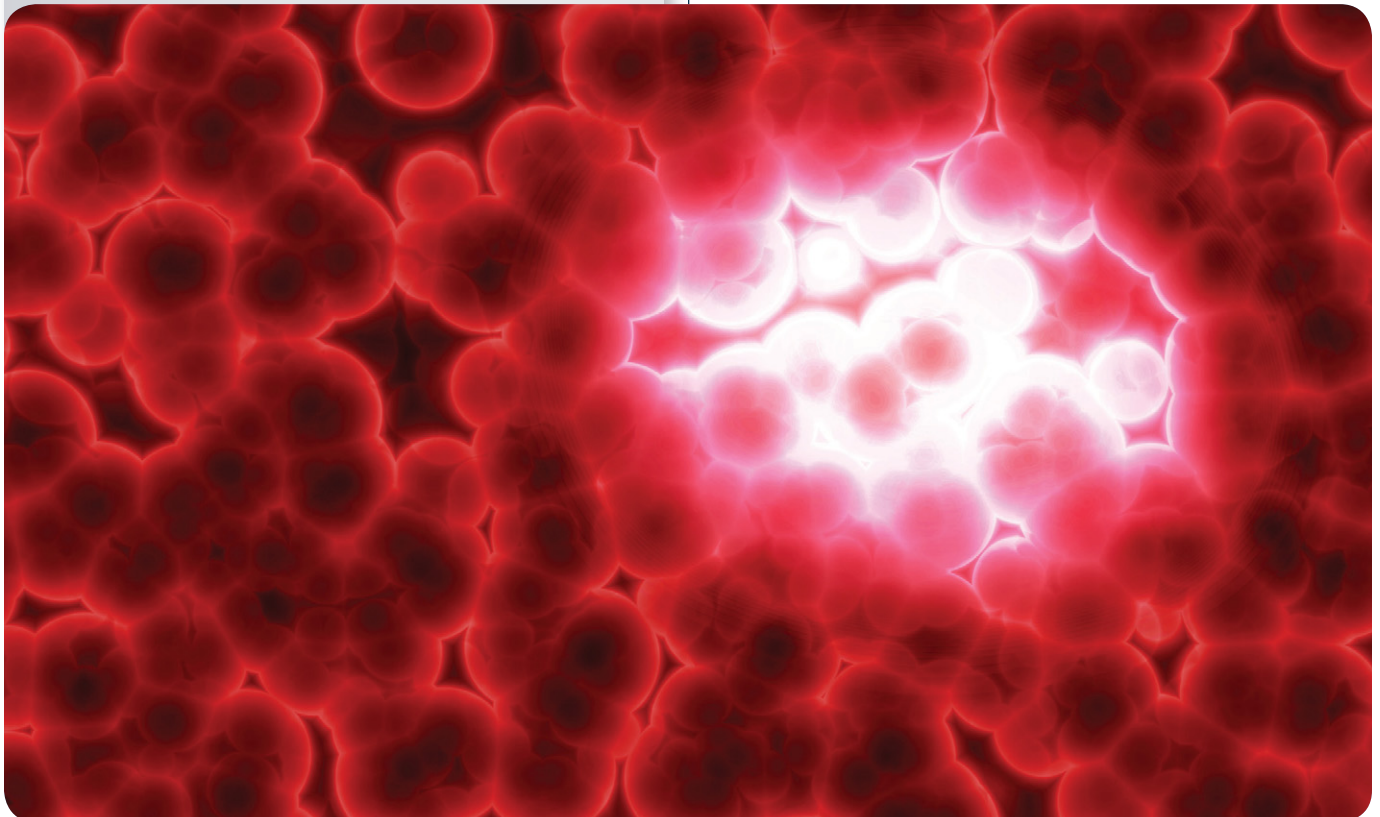
In a healthy body, excess cell replication is under tight control by genetic signals from genes called *tumor suppressor* and *suicide genes*.<sup>5</sup> When a tumor suppressor gene is turned on in response to an abnormal signal, it prevents cell division from getting out of control. Similarly, the activation of a suicide gene triggers a programmed form of cell death called *apoptosis*.

Ultimately, the development of cancer is the direct result of how genes express themselves in tissues. Cancers form when the function of a gene changes—either activating cancer-producing genes, or deactivating cancer-suppressing genes.<sup>7</sup>

### 10. Nutrients that Cut Off the Blood Supply to Growing Tumors

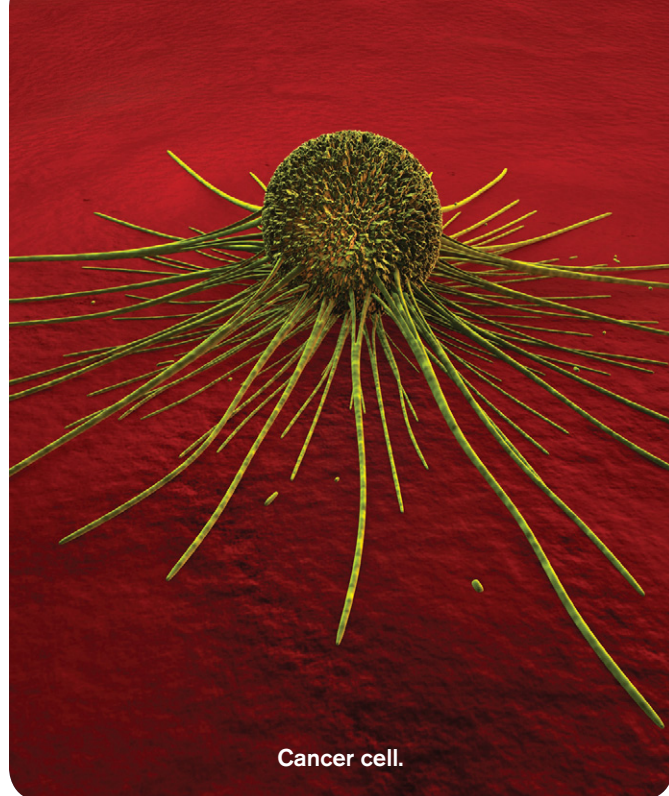
Once a cancer has begun its rapid growth phase, it requires a vast increase in its blood supply. Tumor cells are capable of inducing new blood vessel growth (*angiogenesis*) through multiple epigenetic mechanisms. A number of nutrients are capable of reversing that process and depriving growing tumors of blood supply. These include:

- Apigenin<sup>122-124</sup>
- Coenzyme Q10 (CoQ10)<sup>17,125</sup>
- Coffee diterpenes<sup>18</sup>
- Conjugated linoleic acid (CLA)<sup>85</sup>
- Curcumin<sup>126</sup>
- Grape seed extract<sup>127,128</sup>
- Green tea<sup>129,130</sup>
- Indole-3-Carbinol (I3C)<sup>79</sup>
- Lycopene<sup>27</sup>
- Melatonin<sup>27</sup>
- N-acetylcysteine (NAC)<sup>30,33,34</sup>
- Omega-3 fatty acids<sup>131</sup>
- Pomegranate<sup>132</sup>
- Quercetin<sup>74</sup>
- Silibinin<sup>133</sup>
- Soy isoflavones<sup>134-136</sup>
- Vitamin D<sup>75,86</sup>



Growing tumor.





Cancer cell.

### 11. Nutrients that Prevent Tumors from Spreading

Growing tumors develop the ability to invade local and regional tissues, and to “seed” other body areas with malignant cells through the process of *metastasis*. To accomplish these processes, tumors increase their production of “protein-melting” enzymes called *matrix metalloproteinases*, or MMPs. Effective chemoprevention involves epigenetic changes that impair tumors’ production of MMPs, as is seen in the activities of these nutrients (and drugs):

- Coenzyme Q10 (CoQ10)<sup>137</sup>
- Coffee diterpenes and phenolics<sup>18,138</sup>
- Conjugated linoleic acid (CLA)<sup>139</sup>
- Cruciferous vegetable components sulforaphane and isothiocyanates<sup>140</sup>
- Curcumin<sup>141</sup>
- Green tea polyphenols<sup>24, 121,130</sup>
- Melatonin<sup>142</sup>
- N-acetylcysteine (NAC)<sup>31</sup>
- Silibinin<sup>41,42,133</sup>
- Soy isoflavones<sup>101,135</sup>

Compounds that function via other mechanism to inhibit metastasis include:

- Modified citrus pectin<sup>143+</sup>
- Aspirin<sup>144</sup>
- Cimetidine<sup>145+</sup>

+Note that cimetidine and modified citrus pectin are only used by those with existing cancers. They have not shown preventive effects.

## Summary

Breast cancer, the leading malignancy among women, has long evaded attempts at prevention. However, breakthroughs in the science of epigenetics has led both to a greater understanding of how breast cancer forms—and ultimately to the discovery of novel approaches to chemoprevention.

A large number of nutrients are capable of beneficial epigenetic modifications in breast cancer cells. These nutrients are capable of impeding breast cancer initiation, promotion, proliferation, invasion, and metastasis. They accomplish these multiple effects through the activation of genes that suppress cancer, the deactivation of genes that promote cancer, the promotion of cancer cell death through apoptosis, the modification of hormonal and other growth factor receptors, and fundamental effects such as anti-oxidant and anti-inflammatory actions.

With the broad range of breast cancer chemoprevention available through nutrient supplementation, it only makes sense to include a wide variety of these supplements in your health promotion regimen. ●

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

(References found on page 60.)



# Breast Cancer Chemopreventive Nutrients

Nutrient	Antioxidant	Modulate Gene Expression	Anti-inflammatory	Control Cell Cycle	Promote Healthy Differentiation	Trigger Apoptosis
Apigenin				X <sup>76</sup>		X <sup>76,88,89</sup>
Aspirin			X <sup>61-66</sup>	X <sup>77</sup>		
Chrysin						
Conjugated linoleic acid (CLA)			X <sup>67,68</sup>		X <sup>85</sup>	X <sup>90</sup>
CoQ10 (as Ubiquinol)	X <sup>14-17</sup>					
Curcumin (BCM-95 <sup>®</sup> )	X <sup>21-23</sup>		X <sup>70,71</sup>			X <sup>91,92</sup>
Lignan extract (Enterolactone)						
Grape seed extract						
Coffee extract	X <sup>18-20</sup>	X <sup>19</sup>	X <sup>18,69</sup>	X <sup>78</sup>		X <sup>78</sup>
Green tea extract	X <sup>24</sup>					X <sup>24</sup>
Indole-3-Carbinol (I3C)	X <sup>25</sup>			X <sup>79,80</sup>		X <sup>79,93</sup>
Lycopene	X <sup>26,27</sup>	X <sup>55</sup>				
Melatonin	X <sup>28</sup>			X <sup>81</sup>		X <sup>94</sup>
Silibinin (Milk Thistle)	X <sup>21,41-46</sup>					X <sup>99</sup>
N-Acetylcysteine (NAC)	X <sup>30-35</sup>				X <sup>32</sup>	X <sup>95</sup>
Omega-3 fatty acids		X <sup>54</sup>	X <sup>72</sup>			
Pomegranate extract	X <sup>36-38</sup>		X <sup>73</sup>			X <sup>96,97</sup>
Pterostilbene				X <sup>82</sup>		
Quercetin			X <sup>74</sup>			X <sup>98</sup>
Resveratrol	X <sup>39</sup>	X <sup>56,57</sup>	X <sup>39</sup>			
Selenium	X <sup>40</sup>			X <sup>83</sup>		X <sup>83</sup>
Soy Isoflavones	X <sup>40,47</sup>	X <sup>55</sup>				X <sup>97,100,101</sup>
Sulforaphane	X <sup>48</sup>	X <sup>10,58,59</sup>		X <sup>10,84</sup>		
Vitamin D			X <sup>75</sup>		X <sup>86,87</sup>	X <sup>94</sup>
Vitamin E	X <sup>49-53</sup>					X <sup>102,103</sup>



Nutrient	Reactivate Receptor Expression	Slow Aromatase Activity	Block Abnormal Growth Factors	Inhibit New Blood Vessel Growth	Prevent Invasion and Metastasis	Suggested Daily Chemopreventive Dose
Apigenin			X <sup>118</sup>	X <sup>122-124</sup>		25-50 mg
Aspirin					X <sup>144</sup>	81 mg (enteric coated)
Chrysin		X <sup>113</sup>				500 mg
Conjugated linoleic acid (CLA)	X <sup>106</sup>		X <sup>119</sup>	X <sup>85</sup>	X <sup>139</sup>	3,000 mg
CoQ10 (as Ubiquinol)				X <sup>17,125</sup>	X <sup>137</sup>	200 mg
Curcumin (BCM-95®)	X <sup>107</sup>		X <sup>92</sup>	X <sup>126</sup>	X <sup>141</sup>	400 mg
Lignan extract (Enterolactone)		X <sup>114</sup>				25-50 mg
Grape seed extract		X <sup>115</sup>		X <sup>127,128</sup>		100 mg
Coffee extract	X <sup>104,105</sup>			X <sup>18</sup>	X <sup>18,138</sup>	400 mg three times per day
Green tea extract	X <sup>13,108</sup>		X <sup>108,121</sup>	X <sup>129,130</sup>	X <sup>24,121,130</sup>	725 mg
Indole-3-Carbinol (I3C)			X <sup>80</sup>	X <sup>79</sup>		80-160 mg
Lycopene				X <sup>27</sup>		15 mg
Melatonin	X <sup>109</sup>	X <sup>109</sup>	X <sup>94</sup>	X <sup>27</sup>	X <sup>142</sup>	Up to 10 mg
Silibinin (Milk Thistle)			X <sup>41</sup>	X <sup>133</sup>	X <sup>41,42,133</sup>	750 mg
N-Acetylcysteine (NAC)				X <sup>30,33,34</sup>	X <sup>31</sup>	600 mg
Omega-3 fatty acids	X <sup>111</sup>		X <sup>111</sup>	X <sup>131</sup>		1,400 mg EPA/1,000 mg DHA
Pomegranate extract		X <sup>117</sup>		X <sup>132</sup>		500 mg
Pterostilbene						3 mg
Quercetin				X <sup>74</sup>		500 mg
Resveratrol						100-250 mg
Selenium						200 mcg
Soy Isoflavones				X <sup>134-136</sup>	X <sup>101,135</sup>	35-55 mg
Sulforaphane	X <sup>11,112</sup>		X <sup>59</sup>		X <sup>140</sup>	400-800 mg (Broccoli Extract)
Vitamin D		X <sup>75</sup>	X <sup>94</sup>	X <sup>75,86</sup>		2,000-10,000 IU*
Vitamin E			X <sup>120</sup>			400 mg

**TABLE 2: Dosing for Chemoprevention**

\* Vitamin D dosing varies for each individual. Regular blood testing is needed to make sure your level of supplementation is adequate.

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A bottle containing 90 vegetarian capsules of **Neuro-Mag™ Magnesium L-Threonate** or **30** scoops of **Neuro-Mag™ Magnesium L-Threonate Powder** retails for \$40. If a member buys four bottles, the price is reduced to \$27 per bottle. Contains corn.

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To order **Neuro-Mag™**  
**Magnesium L-Threonate**  
**Capsules or Powder**  
call 1-800-544-4440 or visit  
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Item # 01603



Item # 01602



# Preserve Optimal BREAST HEALTH

Women today face a growing number of health issues, including the need to support DNA gene structure in the breast. Detrimental factors such as the aging process, along with the daily bombardment of damaging environmental estrogen-like compounds, demonstrate the need to support a woman's breast cellular structure.

A wealth of research shows that specific **plant extracts** can positively influence cellular status and remove some of the anxiety women face about maintaining a healthy balance of estrogens.

Two important metabolites that estrogen is broken down to in the body are: the **good 2-hydroxyestrone** and the **bad 16 alpha-hydroxyestrone**. Scientists have identified nutrients like **indole-3-carbinol (I3C)** that can tip the delicate balance of estrogens in favor of the good form.

Women seeking to proactively restore their youthful hormonal balance can now take a new, phytonutrient-based formula that helps support healthy estrogen activity and detoxification. Some of the active ingredients in the Breast Health Formula are:

- **Phytoestrogens** that function as *selective estrogen receptor modifiers* help block certain estrogen receptor sites on cells, thus preventing bad estrogen from exerting its harmful effects
- **Plant lignans** that boost beneficial enterolactone levels and favorably alter estrogen metabolism
- **Cruciferous Vegetable Extracts** (such as I3C) that effectively increase 2-hydroxyestrone while reducing undesirable 16 alpha-hydroxyestrone
- **Calcium D-Glucarate** to safely facilitate the removal of harmful estrogen from the body
- **Vitamin D** to restore healthy genetic regulatory switching to aging cells

**Breast Health Formula** provides nutrients that have demonstrated broad-spectrum support for preserving optimal breast health.

## The daily dose of two capsules supplies:

<b>Phytoestrogens</b> (isoflavones) and Group-B Saponins (from 111.5 mg SoySelect® soybean ( <i>Glycine max</i> ) 70:1 extract)	<b>34.5 mg</b>
<b>Indole-3-Carbinol (I3C)</b>	<b>100 mg</b>
<b>DIM</b> (3,3'-Diindolylmethane)	<b>14 mg</b>
<b>Calcium D-Glucarate</b>	<b>137.5 mg</b>
<b>Vitamin D3</b> (as cholecalciferol)	<b>1000 IU</b>
<b>Enterolactone Precursors Proprietary Blend</b> HMRlignan™ Norway spruce ( <i>Picea abies</i> ) standardized lignan extract (knot wood) and Secoisolariciresinol diglucoside from ActiFlax™ flax ( <i>Linum usitatissimum</i> L.) lignan extract (seed)	<b>25 mg</b>
<b>Iodine</b> (as potassium iodide)	<b>2 mg</b>
<b>Cruciferous Vegetable Proprietary Blend</b> <b>Broccoli</b> ( <i>Brassica oleracea</i> L.) GMO-free Extract [standardized to 4% glucosinolates] <b>Watercress</b> ( <i>Nasturtium officinale</i> ) 4:1 extract (leaf) <b>Sawasabi™ Wasabi</b> ( <i>Wasabia japonica</i> ) powder (rhizome) [standardized to 12,000 ppm Total Isothiocyanate]	<b>550 mg</b>

Item # 00999



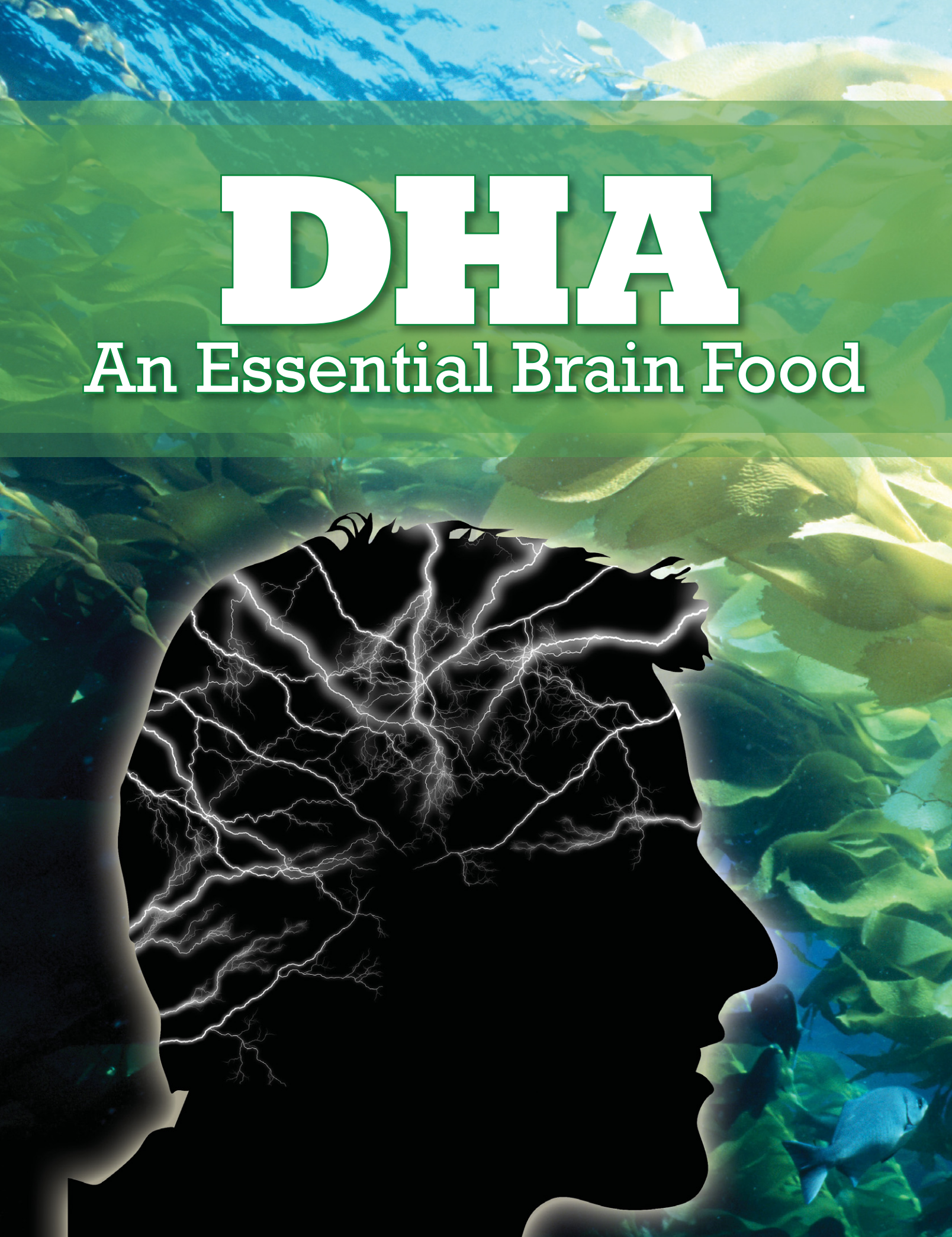
To order, call toll-free  
1-800-544-4440 or visit  
[www.LifeExtension.com/breasthealth](http://www.LifeExtension.com/breasthealth)

The retail price for 60 vegetarian capsules of **Breast Health Formula** is \$34. If a member buys four bottles, the price is reduced to only \$22.50 per bottle. Contains soybeans, corn, and rice.

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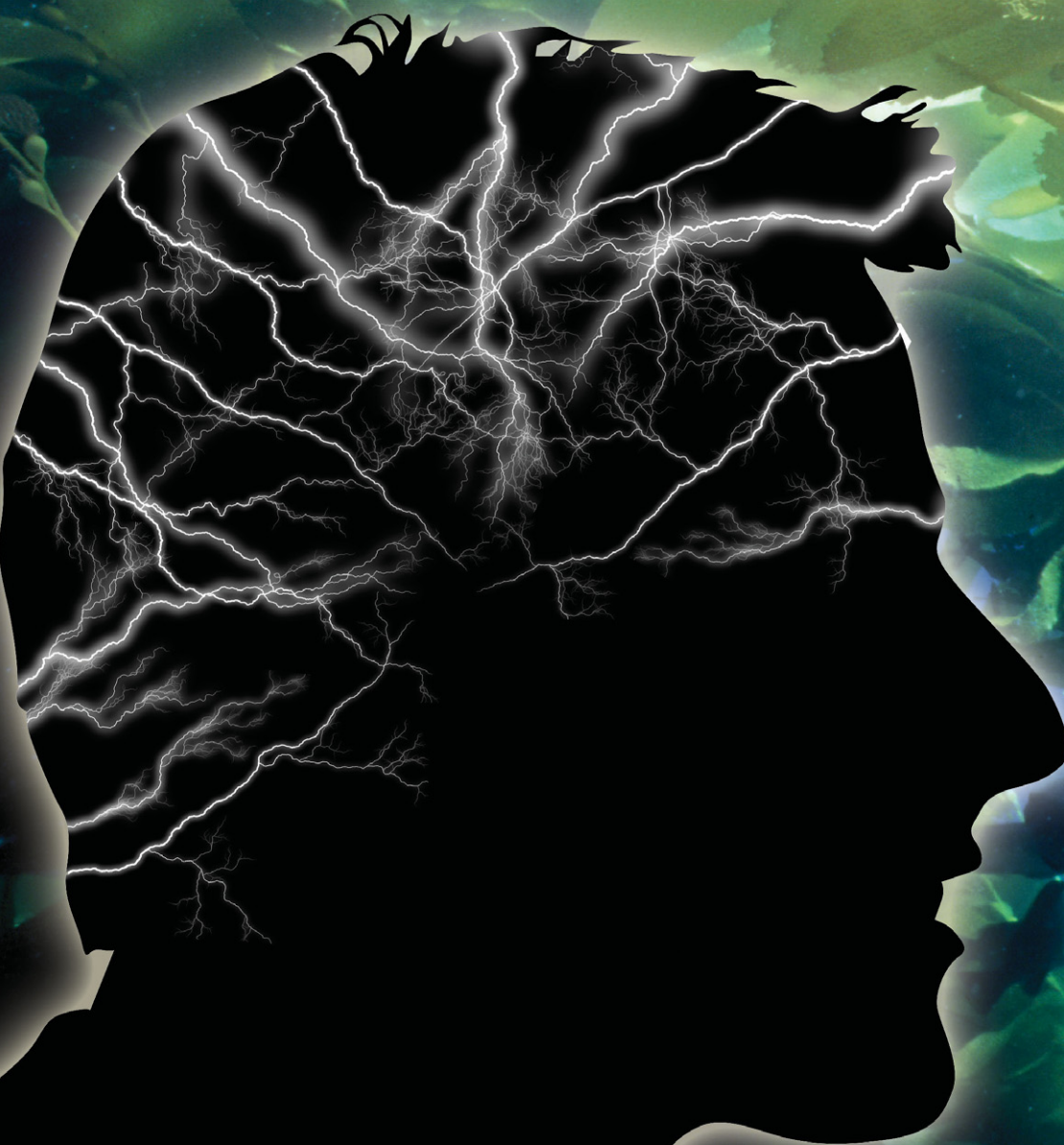
These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.



The background of the entire image is an underwater scene. It features large, green, leafy seaweed or kelp swaying in the water. Several fish are visible, including a prominent yellow fish in the upper right and a smaller blue fish in the lower right. The water is a clear, vibrant blue. A semi-transparent green horizontal band is positioned across the upper middle of the image, serving as a backdrop for the title text.

# DHA

An Essential Brain Food







BY KIRK STOKEL

When NASA scientists began their search for the perfect space food for astronauts, they turned their attention to marine algae. What they discovered was that algae was a rich source of the fatty acid DHA (docosahexaenoic acid). The result of their investigation produced a nutrient dense food that could be used not only for astronauts but for those here on earth.<sup>1</sup>

DHA is a brain food. Studies show that brain tissue contains the highest concentration of DHA in the body, which indicates its value for brain function.<sup>2</sup> Within the brain itself, regions most closely related to memory show the greatest DHA concentrations.<sup>3-6</sup> Those with a DHA deficiency often show cognitive deficiencies and an increased risk for Alzheimer's.<sup>7,8</sup> Children with high levels of DHA often perform better on tests.<sup>9</sup> As a key fatty acid, DHA plays criti-

cal roles throughout the body and is a component of the brain's cerebral cortex, the retina, and human sperm.

As we age, DHA levels normally drop off in older individuals, especially in the all-important hippocampus region of the brain. Studies have shown that supplementation to older animals results in the normalization of hippocampal DHA content.<sup>10,11</sup>

Algae-based DHA supplementation increases the *omega-3 index* by **75%**.<sup>12</sup> A low omega-3 index indicates high risk for developing coronary artery disease. While most people obtain their DHA from fish or fish oil supplements, NASA's discovery created an option for those who need to boost their vital DHA levels to avoid cognitive degeneration. Thanks to our space program, the benefits of DHA are available for everyone who seeks to avoid the risks of a DHA deficiency. > >





## DHA: Triple-Acting Neuroprotection

Brain tissue has the highest concentration of DHA in the body, suggesting that brain function relies in unique ways on this powerful fatty acid.<sup>2</sup> Within the brain itself, regions most closely related to memory show the greatest DHA concentrations.<sup>3-6</sup> And even at the cellular level, DHA concentrates in the structures involved in forming new memories, such as synaptic membranes and tiny outgrowths called “neurites.”<sup>3,13</sup>

Large-scale epidemiological studies reveal the benefits of sustained high DHA intake on brain function. Consuming an average of **3g/day** of fatty fish offers a **19 to 23%** reduction in the risk of mild cognitive impairment, a condition associated with later progression to Alzheimer’s disease.<sup>14</sup> People who eat still larger amounts of fatty fish may experience protection of up to **75%**.<sup>14</sup> On the other hand, low fish intake and low blood DHA levels correlate strongly with increased risk of cognitive impairment and especially Alzheimer’s.<sup>7</sup> Animal studies show learning and memory deficits under conditions of DHA deficiency; studies of the animals’ brains demonstrate inflammatory and oxidative damage to neurons.<sup>7,8</sup> All of these deleterious effects resolve when adequate DHA intake resumes.

Unlike other fats, which accumulate in fat cells for storage and later release for energy, DHA resides almost exclusively in cell membranes, which undergo continuous degradation and renewal.<sup>2</sup> That means in turn that your body needs a constant dietary supply of DHA to avoid depletion and neuronal injury.

One study showed that DHA supplementation in humans at **2g/day** provides sufficient DHA to maintain healthy function, but levels drop when the patients stopped taking the supplements.<sup>2</sup> To achieve these levels often requires additional DHA supplementation beyond eating a regular diet of fish.

DHA influences how the brain develops and functions; it helps to determine brain structure, and it protects brain tissue from damage. DHA’s protective effects come from three distinct mechanisms:

- 1. DHA protects brain tissue from inflammatory damage.** It accomplishes this by promoting development of anti-inflammatory molecules while suppressing pro-inflammatory molecules in brain cell membranes.<sup>15,16</sup> That alone offers powerful protection against oxidative and other stresses that age brain tissue.
- 2. DHA stimulates physical changes that underlie learning and memory.** DHA promotes outgrowth of neurites, the tiny projections that form intimate connections between cells as memories form.<sup>6,17</sup> DHA promotes rapid signal transduction across synapses and helps membranes maintain their fluidity, a condition required for rapid changes in shape and function we recognize as memory.<sup>18,19</sup>
- 3. DHA promotes healing after injury to brain tissue.** Immediately after such an injury, cell membranes release DHA in massive amounts for conversion into compounds called *protectins*.<sup>4,5,13,15,20</sup>



**Protectins** are nature's way of maintaining the balance between oxidant damage and recovery. They begin to form at the very first sign of damage at the cellular level, whether from a seizure, a stroke, or a traumatic brain injury.<sup>4,5,13,15,20</sup>

Scientists say that DHA-derived *protectins* function in a dual manner: they trigger anti-inflammatory processes and simultaneously begin the process of injury resolution.<sup>13,15</sup> Acting fast enough and in sufficient quantities, *protectins* may be able to quash widespread brain degeneration, stopping or slowing neurodegenerative diseases like mild cognitive decline, and even Alzheimer's and Parkinson's diseases.

The best way to stimulate *protectin* synthesis? Make DHA maximally available to brain cells, where it's available for immediate release.<sup>20</sup>

Let's now look at laboratory and human studies that demonstrate how DHA protects memory, enhances learning, and slows brain aging.

### Studies Highlight DHA Memory-Protection in Brain

Animal studies repeatedly demonstrate the strongly neuroprotective effects of DHA supplementation in brain structure and function. While DHA levels normally drop off in older individuals, especially in the all-important hippocampus region of the brain, supplementation to older animals results in the normalization of hippocampal DHA content.<sup>10,11</sup>

As a result, supplemented animals' brains show all the effects that DHA produces, including enhanced outgrowth of connections between neurons, more rapid transmission of electrical pulses across synapses, and protection against the physical and biochemical changes associated with Alzheimer's disease.<sup>6,10,11,18,21-24</sup> Blood flow to memory-critical regions of the brain increases following DHA supplementation, and new brain cells form in older animals.<sup>25,26</sup>

Animals' behavior, especially related to learning and memory, is markedly enhanced after DHA supplementation. Supplemented animals better remember the location of a submerged platform in the Morris water maze test, a standard test of spatial memory of the kind so readily lost in Alzheimer's disease.<sup>17,27,28</sup> Similarly, supplemented animals outperform controls on tests of reference memory (the ability to relate current conditions to those experienced in the past).<sup>29</sup> And in those animals, brain regions related to memory show higher concentrations of DHA than do controls.<sup>29</sup>

Exercise enhances brain plasticity, the neuronal flexibility that underlies learning; now studies reveal that DHA supplementation provides a synergistic

## Defend Brain Health with Algal-Derived DHA

- DHA from fish oil is a proven brain protective nutrient that provides multiple cardiovascular benefits.
- Recent studies show that DHA is especially beneficial in improving the memory loss that accompanies aging.
- But those who prefer not to eat fish are at risk for developing low DHA levels and losing that neuroprotection.
- A new technique for extracting DHA directly from algae makes DHA supplementation more widely available.
- Algal-derived DHA oil is equivalent to that derived from fish oil in terms of its bioavailability and impact on the human body.
- Now, everyone, regardless of dietary preference or habits, can enjoy the myriad neuroprotective, memory-defending benefits of DHA supplementation.





boost to regular exercise.<sup>30</sup> Exercised and supplemented animals perform better on memory tasks than do those receiving either treatment alone.<sup>30,31</sup>

DHA-protected brains function better in the event of physical trauma to the head. Animals supplemented with DHA before undergoing experimental traumatic brain injury show reduced injury responses in brain tissue, including a reduction in the tragic diffuse axonal injury suffered by many human victims of head trauma.<sup>32</sup>

Low brain concentrations of DHA are thought to contribute to the cognitive decline seen in Alzheimer's disease.<sup>22,33,34</sup> Conversely, higher DHA levels correlate well with improved performance on tests of memory and learning, as seen in a landmark study of school children in Canada. Children followed from birth to 11 years of age, and who had higher DHA levels in their blood at birth and at the time of testing, had better performance on memory and learning tests.<sup>9</sup>

Numerous studies have demonstrated the protective effects of DHA supplementation on cognitive function and memory. The effects are most pronounced in people with minimal cognitive impairment, or MCI, which is a mild form of cognitive decline that often proceeds to Alzheimer's disease. Roughly **15%** of people with MCI will progress to Alzheimer's disease each year, while only about **1%** of those without MCI do so.

In one such study, a relatively low dose of DHA and another fatty acid improved memory and attention scores in patients with MCI and organic brain injury, but not in the Alzheimer's disease patients.<sup>35</sup>

Similarly, older adults with MCI took DHA plus melatonin and tryptophan as an emulsion for 12

weeks, and underwent a battery of cognitive, behavioral and nutritional tests. Their memories, mental status, and verbal fluency all improved significantly.<sup>36</sup> And a combination of DHA with phosphatidylserine, another brain nutrient, improved verbal recall in non-demented older adults with mild cognitive impairment.<sup>37</sup>

People with mild cognitive impairment may progress to full-blown dementia; if they have symptoms of depression that progress may be faster. In a study of 40 adults with both MCI and depression, a DHA supplement of **1.55 g/day** reduced their scores on a depression scale, while at the same time improving their verbal fluency. Those with the highest post-supplement DHA levels reported the greatest improvement in overall physical health.<sup>38</sup>

In another study, people with age-related cognitive decline, which may or may not progress to Alzheimer's disease, supplemented with **900 mg/day** of DHA.<sup>39</sup> They made significantly fewer errors on tests of visual and spatial learning and memory, along with improved immediate and delayed verbal recognition memory, compared with control patients. DHA levels in these patients doubled during supplementation, and were closely correlated with improved memory scores.

Unfortunately, DHA supplementation, like any other treatment, is much less effective in fully-developed Alzheimer's disease, presumably because so much irreversible damage has already been done. Still, supplementation may ameliorate some of the troubling features of the disease. Alzheimer's patients typically lose weight as a result of lost sense of smell and taste, and a general disinterest in food.<sup>36</sup> But supplementation with DHA at **1.7 g/day** improved weight gain in patients with mild to moderate Alzheimer's; and again blood concentrations of DHA correlated well with weight gain and appetite improvement.<sup>40</sup> Similar studies report improvement in the sense of smell and nutritional intake following DHA supplementation.<sup>36</sup>

### Vegetarians Dangerously Deficient in DHA

Those who follow a vegan diet run the risk of a serious DHA deficiency because their diets provide little or no DHA at all. Even a vegetarian diet with dairy and egg products only supplies about **20 mg/day** of DHA.<sup>41</sup> Until recently, though, vegetarians and vegans could not find acceptable sources of supplemental DHA, leaving them vulnerable to chronic diseases, especially those of the brain that affect cognition and memory.

But fish do not make DHA. Predatory ocean fish, our best animal source of omega-3 fatty acids, consume



smaller fish and crustaceans.<sup>42,43</sup> Those animals, in turn, feed on algae. And algae use specialized enzymes, powered by solar energy, to produce the DHA (and EPA) that we need in order to remain healthy.

As a result, all of the DHA we consume originates with tiny one-celled algal organisms.

Advances in aquaculture now make large-scale DHA production possible from algal cells grown in culture. First, specialized batch fermenters grow algae under ideal conditions. After harvesting, dryers remove moisture from the biomass, leaving the oil-rich residue. Next, extraction equipment separates the valuable oil from other organic material.<sup>43</sup> At the end of the process, only the highly refined oil remains, rich in DHA and entirely free of animal products. This oil meets the strict standards of true vegetarians and even vegans. Can algae-derived DHA replace fish oil as a health-promoting dietary component?

Emphatically yes, according to recent human studies.

Dosing with algae-derived DHA among vegetarians produces precisely the same increase in serum, red blood cell, and platelet DHA content seen with fish oil supplementation at equivalent doses.<sup>44,45</sup>

One study showed increases of DHA in serum and platelets of **246%** and **225%**, respectively, after six weeks supplementation with **1.62 g/day** of algae-derived DHA oil.<sup>46</sup> As an additional benefit, levels of EPA, another vital omega-3 fatty acid, rose substantially as well, while levels of the inflammation-generating fat arachidonic acid decreased.<sup>46</sup>

People with low DHA levels stand to gain the most from supplementation using algae-based DHA; one

study found a **4 to 5-fold** increase in blood levels following supplementation in cystic fibrosis patients, who often have imbalances in their fatty acid content.<sup>47</sup>

Other studies report that algae-based DHA supplementation increases the “omega-3 index” by **75%**.<sup>48</sup> A low omega-3 index (the sum of red blood cell membrane EPA plus DHA content) indicates high risk for developing coronary artery disease. After supplementation with **940 mg/day** of algal DHA, **69%** of supplemented subjects, but none in the placebo group, managed to get their omega-3 index above the recommended **8%**.<sup>12</sup>

And vegetarians supplemented with algae-based DHA enjoy the same drop in cardiovascular risk factors as do non-vegetarians consuming fish oil.<sup>42</sup> Those include lowering triglycerides, and the important total cholesterol/HDL cholesterol ratio.<sup>12,48</sup>

Studies routinely report no side effects or adverse outcomes when patients consume even large doses of algae-derived DHA; the oil has the same excellent bioavailability as fish oil-derived DHA.<sup>42,44,45,47-50</sup>

## Summary

Compelling scientific data point to the value of maintaining high DHA concentrations in blood and brain tissue. DHA supplements derived from fish oil are an excellent source of the valuable omega-3 fatty acid.

But vegans and vegetarians, until recently, had no practical and acceptable source for DHA.



A new process now enables DHA to be extracted from algae, by means of completely vegan-friendly techniques. This DHA oil is equivalent to that derived from fish oil in terms of its bioavailability and impact on the human body.

Availability of a vegan/vegetarian-approved form of DHA is especially essential for maintaining brain health, memory, and learning functions. DHA reduces brain inflammation, a main risk factor for Alzheimer's and similar diseases. DHA stimulates new nerve cell growth and production of neuronal features that underlie learning. And recent studies show that DHA is required for production of essential protectins, molecules that initiate healing from the very onset of brain cell injury.

An algae-derived DHA enables anyone to increase their DHA intake. ●

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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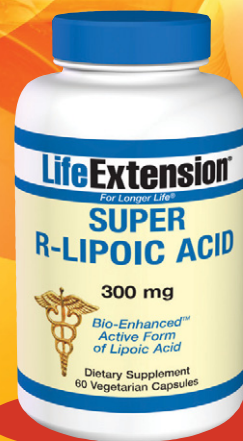
# Preserve Youthful Cellular ENERGY

## with Next-Generation LIPOIC ACID

Published studies have shown the critical importance of **lipoic acid** in supporting healthy mitochondrial function.

Unlike other forms of lipoic acid, **SUPER R-Lipoic Acid** is more bioavailable, stable, and potent, achieving 10-30 times higher peak blood levels than pure R-lipoic acid.<sup>1</sup> This unique **sodium-R-lipoate** can help you reach peak plasma concentrations within just 10-20 minutes<sup>2</sup> of supplementation.

**Super R-Lipoic Acid** provides more of the active "R" form of lipoic acid than any other supplement.



Item # 01208

To order **Super R-Lipoic Acid**,  
call **1-800-544-4440** or  
visit **www.LifeExtension.com**

A bottle of **Super R-Lipoic Acid** containing 60 vegetarian capsules retails for \$49. If a member buys four bottles, the cost is only **\$33.75 per bottle**. Each capsule contains **300 mg** of stabilized, Bio-Enhanced® **Super R-lipoic acid** supplying **240 mg** of **R-lipoic acid**. Suggested dose is one to two capsules.

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

Bio-Enhanced® is a registered trademark of Geronova Research, 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.





# 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**® members now have access to a purified 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.

# ANTI-AGING EFFECTS OF PYCNOGENOL®

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

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

**MEMBRANE FUNCTION:** *Pycnogenol®* promotes the integrity and normal characteristics of cell membranes.<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®</b> dried French Maritime pine ( <i>Pinus pinaster</i> ) extract (bark)[std. to 65% procyanidins (65 mg)]	<b>100 mg</b>
<b>Vitamin C</b> (as ascorbyl palmitate)	<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.

To order **Pycnogenol® French Maritime Pine Bark Extract**,  
call 1-800-544-4440  
or visit [www.LifeExtension.com](http://www.LifeExtension.com)



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# HOW BIOFLAVONOIDS CREATE YOUTHFUL SKIN TONE

BY GARY GOLDFADEN, MD, AND ROBERT GOLDFADEN

There are approximately **4,000** naturally occurring plant metabolites called **bioflavonoids**. These compounds are responsible for the vibrant-color of many fruits, vegetables, and flowers.<sup>1</sup> They can also defend your skin against the damaging effects of stress, pollution, and even age itself.

**Bioflavonoids** have the ability to neutralize reactive oxygen species by donating one of their electrons, thus stabilizing the molecule and breaking the oxidative chain.<sup>2</sup> This can result in visible signs of healthy, more vibrant skin.

Three of the better-known bioflavonoids, **quercetin**, **hesperidin**, and **rutin**, have intriguing research indicating their abilities to prevent and reverse wrinkles, reduce the appearance of age spots, and fight spider veins.<sup>3-6</sup>





### Turn Back the Clock on Aging

You might think wrinkles are an inevitable part of aging. But by combating wrinkles at the cellular level, not only can you prevent them from occurring—you *can rejuvenate skin that is already showing the signs of old age*.

**Quercetin**, a bioflavonoid found in apples, berries, parsley, onions, grapefruit, and wine, has proven antioxidant and anti-inflammatory properties.<sup>7</sup>

When applied topically, quercetin has been shown to protect the skin's natural antioxidants from depletion caused by UVA irradiation.<sup>8</sup> This action helps decrease the oxidative damage caused by exposure to the sun.

But quercetin's real anti-aging power comes from its ability to extend the survival and viability of human skin cells. When skin cells stop replicating, your skin loses elasticity and collagen, which results in wrinkles. One study showed that when quercetin and rutin (another bioflavonoid) were applied to dying skin cells that had ceased to replicate, the skin cells were rejuvenated and began to reproduce again.<sup>9</sup>

Another interesting property of quercetin is its ability to increase the production of **collagen** a substance necessary for vibrant skin.<sup>3</sup> This beneficial effect has made it an increasingly popular ingredient in more and more skin care products aimed at combating wrinkles.

### The Secret to Younger-looking Skin

Only a decade or so ago, anti-aging products concentrated primarily on reducing wrinkles and plumping up the skin to produce a smoother, more youthful appearance. And although combating wrinkles is a necessary step in any anti-aging routine, it's not the only factor in maintaining younger-looking skin.

Research has demonstrated that there's another factor that plays a significant role in how old you look: the evenness of your *skin tone*.<sup>10-12</sup> The ability to lessen the appearance of age spots and the capacity to provide a lightening effect for sallow, age-damaged skin is central to achieving this goal. One of the best ways to do that is with the bioflavonoid **hesperidin**.<sup>4</sup>



Hesperidin has a similar structure to **hydroquinone**, a compound that has long been considered the professional gold standard for the treatment of age spots and other hyperpigmentation disorders. Like hydroquinone, hesperidin works by limiting the capacity of the skin cells to produce **tyrosinase**, the enzyme responsible for producing the skin pigment melanin. However, unlike hydroquinone, hesperidin does not come with a list of side effects. In fact, research has demonstrated that hesperidin safely produces a reduction in tyrosinase activity.<sup>13</sup> By interfering with tyrosinase activity, hesperidin is ultimately able to inhibit the development of age spots.

Hesperidin has outstanding potential for cosmetic use. Its vasoprotective and skin-lightening actions work to counteract many of the visible signs of aging.

### Rejuvenate From the Inside Out

Wrinkles and age spots aren't the only visible signs of aging. Spider veins and varicose veins are unsightly and often embarrassing reminders that we're not as young as we used to be. Although many people believe that these are inevitable factors in the aging process, research has proven that it is possible to defy these signs of old age.

Spider veins and varicose veins occur as a result of the gradual weakening and deterioration of capillaries. In order to maintain healthy blood circulation, it's imperative that the arteries and capillaries be kept as clean and strong as possible. Unfortunately, being so small, the capillaries are extremely susceptible to damage from free radical assault, aging, and other factors that can lead to compromised integrity and function. This can lead to rupturing and bleeding that is visible as "broken veins" on the surface of the skin. However, maintaining the health of the circulatory system can prevent this type of damage from occurring.

One of the best ways to maintain the health of your capillaries is with a bioflavonoid found naturally in fruits and vegetables called **rutin**. Rutin has the capacity to regenerate vitamin C after it neutralizes a free radical, thus helping to restore its antioxidant potential.<sup>14</sup> Because vitamin C plays a critical role in the manufacture of collagen, an important component of capillary walls as well as the sustaining framework of the epidermis, this could have a dramatic impact on the health of your skin.

Rutin has the ability to protect skin from damage caused by *advanced glycation end products* (AGEs). AGEs accelerate the aging of skin cells, which cause the skin to lose elasticity and collagen. One clinical study found that rutin can effectively modulate the breakdown of collagen caused by AGEs.<sup>15</sup>

## Skin-Saving Benefits of Bioflavonoids

- **Bioflavonoids** are a group of approximately **4,000** naturally occurring plant metabolites that are responsible for the vibrant color of many fruits, vegetables, and flowers.
- Bioflavonoids have the ability to neutralize reactive oxygen species by donating one of their electrons, thus stabilizing the molecule and breaking the oxidative chain.
- Three of the better-known bioflavonoids, **quercetin**, **hesperidin**, and **rutin**, have solid research behind them proving their power to prevent and reverse wrinkles, reduce the appearance of age spots, and even fight spider veins and varicose veins.
- Quercetin has been shown to significantly protect the skin's natural antioxidants from depletion caused by UVA irradiation. It also helps rejuvenate dying skin cells, which improves skin's elasticity and reduces the appearance of wrinkles.
- Hesperidin safely reduces the appearance of age spots by reducing the activity of tyrosinase, the enzyme responsible for producing the skin pigment melanin.
- Rutin helps fight spider veins and varicose veins by maintaining healthy blood circulation. It also decreases capillary permeability and makes the blood thinner,<sup>6</sup> thereby improving microcirculation so the skin cells receive more oxygen and nutrients.



Rutin's ability to provide microvascular protection, improve circulation, and defend against free radical damage makes it an excellent ingredient in any natural skin care formulation for aging skin.<sup>5,6,15,16</sup> Also, because rutin can penetrate the skin, its use in a topical skin care formulation makes it extremely valuable.<sup>17-19</sup>

## Summary

As potent as these plant metabolites are on their own, they exhibit an even greater effect when they're used together, as studies have shown they work synergistically by harmonizing with each other.<sup>20,21</sup> Together, these three natural ingredients provide the rejuvenating power we need to help redefine aging skin and to fight the signs of premature aging such as spider veins, wrinkles, age spots, and more.

By nourishing and protecting the skin's ability to heal and reproduce, bioflavonoids like quercetin, hesperidin, and rutin help to safely and naturally restore and maintain a more youthful appearance. ●

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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# 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
Vitamin K2 (as menaquinone-4)	1000 mcg
Vitamin K1 (as phytonadione)	1000 mcg
Mixed tocopherols	359 mg
(providing Gamma Tocopherol 230 mg)	
Ginkgo extract	120 mg

Chlorophyllin	100 mg
Sesame lignans	20 mg
Lycopene	10 mg
Lutein	2 mg
Vitamin B12	300 mcg
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.

To order Super Booster,  
call **1-800-544-4440** or  
visit **www.LifeExtension.com**

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.

Tomat-O-Red® is a registered trademark of LycoRed, Ltd.

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# SUPPORT ENDOTHELIAL HEALTH FOR MAXIMUM SEXUAL PERFORMANCE

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

**Life Extension®** has discovered supportive clinical research for a scientifically validated, *natural* 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 plant extract used in traditional Chinese medicine—has been shown to **deactivate** the enzyme normally responsible for **winding down** male sexual response, further promoting sustained activity.<sup>8</sup> Prelox® Natural Sex for Men® contains a standardized extract providing a proprietary form of high-quality icariin.

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

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

<b>ICARIIN</b> [Natural Sex® <i>Epimedium sagittatum</i> Extract (aerial parts)]	<b>60 mg</b>
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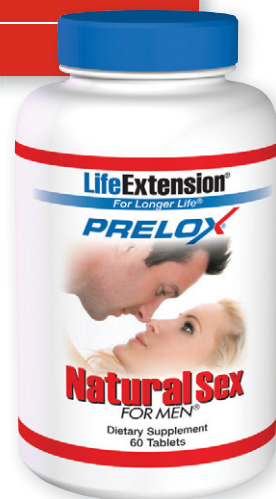
A 60-tablet bottle of **Life Extension® Prelox® Natural Sex for Men®** retails for \$52. If a member buys four bottles, the price is reduced to just **\$36 per bottle**.

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Item# 01373





Item #80147

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- Supporting the body's healthy inflammation response\*
- Consuming "good fats" such as Omega-3 fatty acids

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Our body's inflammation response is a natural healing process. We often think of the inflammation response as something we can feel—such as in our joints and muscles where there are large numbers of sensitive nerve endings. But we can also have a response we can't feel, where sensitive nerves aren't concentrated—including in the heart and blood vessels. Whether we're aware of it or not, this inflammation response can affect every organ and cell.

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### Omega-3 is Important for Cardiovascular Health

Life Extension's Super Omega-3 is a premium, scientifically validated fish oil concentrate. Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract promotes a healthy heart.\* 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>1</sup> To further emulate the benefits of a Mediterranean diet, Super Omega-3 delivers standardized, high-potency olive fruit extract. Research shows that when combined with olive oil, fish oil supplements help with inflammation better than fish oil alone.<sup>2\*\*</sup>

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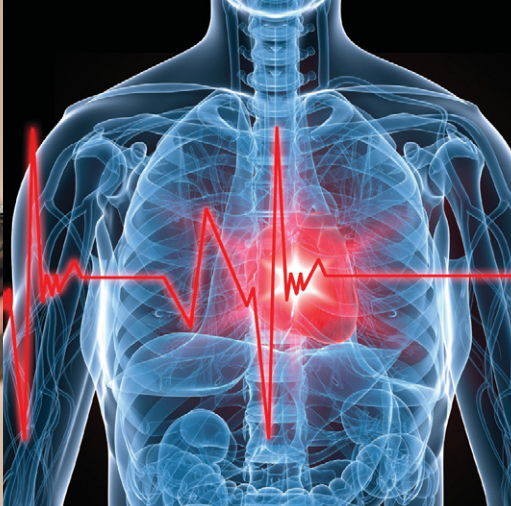
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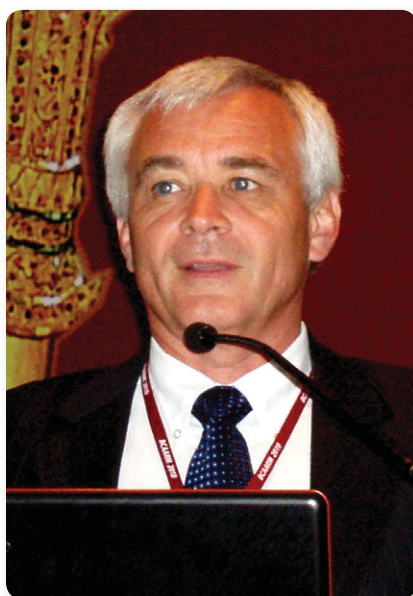
BY SILAS HOFFMAN

# High Cholesterol: New Strategy for an Old Battle

For more than two decades, mainstream medical practitioners have been attempting to cure heart disease by blindly “treating” elevated cholesterol with statin drugs. While it is true that high cholesterol levels are strongly associated with cardiovascular risk, recent studies have shown that the use of statins has prolonged, damaging side effects and that their level of **actual** risk reduction is not as robust as pharmaceutical companies claimed.<sup>1-3</sup>

Dr. Sergey Dzugan, MD, PhD, a cardiac surgeon and the author of *The Magic of Cholesterol Numbers*, has put forth a bold new hypothesis stating that declining hormone levels are the root cause of elevated cholesterol. This cutting-edge approach, known as the “Dzugan Method” stipulates that high cholesterol is caused by the body trying to correct deficient hormone levels by boosting their precursor, cholesterol.

The current method of treating cardiac problems with statins is not a complete solution, as evidenced by the high number of Americans who still suffer heart attacks despite using prescription statins. In this article, you will read about the innovative method that Dr. Dzugan has developed that has demonstrated tremendous success in lowering cholesterol, relieving migraines, and improving the quality of life of patients.



Sergey Dzugan, MD, PhD

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## The Staggering Success of the Dzugan Method

Ed was 57 in August of 2000. Like so many Americans his age, Ed struggled with the realities of aging. He carried multiple diagnoses, including severely elevated cholesterol (**330 mg/dL**), depression, and insomnia. Ed had also been dealing with severe erectile dysfunction since age 39. He'd begun noticing short-term memory problems, and felt constantly fatigued. Neither he nor his doctor could tell which of his symptoms were related to his cholesterol-lowering medication, and which symptoms resulted from underlying disease. In desperation, Ed turned to Sergey A. Dzugan, MD, PhD, co-founder of the Dzugan Method of hormonorestorative medicine.

Fast-forward to September of 2003. Ed's total cholesterol was now **187 mg/dL**, and he'd lost weight. But the most astonishing thing was that Ed was completely symptom-free! Gone were his depression, his sleepless nights, his flagging energy, and his memory

problems. Ed's erectile dysfunction had resolved, and he approached each day with renewed optimism and vigor.

Ed was among the fortunate few patients who came to see Dr. Dzugan in the early years of his pioneering approach to aging. Since Ed, Dzugan and his colleague Dr. George Rozakis have treated hundreds of similar patients, people with a host of chronic conditions ranging from elevated cholesterol to depression to chronic fatigue syndrome to migraines. In fact, the astonishing thing is that so far, chronic conditions from across the spectrum of disease have yielded to the Dzugan Method — even diseases that appear to be entirely unrelated from a traditional standpoint.

Simply put, Dzugan recognized that elevated cholesterol levels are the consequence of a lifetime of hormonal disturbances. Dzugan calls them “acquired errors of physiology.” By treating those errors — restoring a youthful hormonal milieu — Dzugan and Rozakis routinely see plummeting cholesterol levels. More to

the point, they also see dramatic reversal of complaints such as Ed's, accompanied by stunning improvements in overall quality of life. This innovative approach to maintaining healthy bio-markers remains largely unknown to mainstream physicians.

## Cholesterol: Deadly Cause or Collateral Consequence?

Cholesterol causes heart disease, right? Therefore lowering cholesterol reduces the risk of heart disease, according to the perceived gospel of mainstream medicine.<sup>4,5</sup> Dzugan and Rozakis suggest that this vastly over-simplified view is a potentially dangerous one.

Both sides know that coronary heart disease and stroke are leading causes of death and disability, and have spent decades working to identify their origins. Mainstream researchers now recognize that endothelial dysfunction and inflammation are fundamental to the process. And they've correctly implicated cholesterol and its oxidation products





as critical risk factors that contribute to early endothelial damage and ultimately produce atherosclerosis. But that's where the discussion stops for most mainstream practitioners, who tend to think in terms of "one condition, one drug." That accounts for mainstream medicine's (and Big Pharma's) almost compulsively narrow focus on cholesterol as a risk factor, and on cholesterol-lowering drugs as risk reducers.

Dzugan and Rozakis, on the other hand, argue persuasively that the benefits of cholesterol lowering drugs (CLDs) are overstated — and that their risks are underemphasized.<sup>1-3</sup> A 2010 analysis in the prestigious *Archives of Internal Medicine* supports their position.<sup>6</sup> It concludes that the recent JUPITER trial (Justification for the Use of Statins in Primary Prevention) was flawed and that its results "do not support the use of statin treatment for primary prevention of cardiovascular diseases and raise troubling questions concerning the role of commercial sponsors."<sup>6</sup>

Dzugan and Rozakis take a decidedly different approach. Their stunning revelation was that cholesterol elevations in fact result from a host of "acquired errors of physiology." In other words, we have elevated cholesterol with aging because we've accumulated a number of distinct, measurable, and *treatable* derangements of our basic metabolism. That would explain why lowering cholesterol with drug therapy may not only be ineffective, it might be dangerous. Indeed, says Dzugan, "It is absolutely not true that low cholesterol is healthier!"<sup>1</sup> To better understand this revolutionary statement we need to examine Dzugan's original thinking going back 15 years.



### A New Hypothesis

Sergey Dzugan is a keen observer of the natural world, and one who readily thinks outside the boundaries of conventional medical thought. Dzugan noticed that side effects of cholesterol-lowering drugs mimic symptoms of fibromyalgia and chronic fatigue syndrome (CFS), and that both conditions have shown in studies to be related to hormonal disruptions.<sup>7,8</sup> He noticed the evidence that steroid hormones influence cholesterol levels.<sup>9</sup> He observed the natural increase in cholesterol production during periods of increased physiologic demand, such as pregnancy, childhood growth spurts, stress, and wound healing.<sup>1</sup> He was intrigued by observations that total cholesterol levels are often surprisingly *low* in a host of mental illnesses and substance abuse.<sup>10-12</sup> Finally, Dzugan noted the substantial proportion of people who develop cardiovascular disease who do *not* have elevated cholesterol levels.<sup>13</sup>

Like all brilliant scientists, Dzugan was able to assemble these apparently disparate observations

into a coherent new theory based on a common thread of evidence, namely the interrelationships between cholesterol and steroid hormones. *All steroid hormones in our bodies are produced from cholesterol as a precursor* — the human body uses more than 60 such hormones, with the sex hormones and their related molecules being among the most important.<sup>14</sup>

As in many chemical reactions, the supply of the precursor molecule directly influences the supply of the final product. Dzugan knew that levels of steroid hormones, especially sex hormones and related molecules, decline with advancing age. And low sex hormone levels are independently associated with elevated cholesterol at all phases of life.<sup>15-17</sup>

Together these facts led Dzugan to his remarkable insight: elevated cholesterol is the *reactive consequence* of reduced steroid hormone production in the body.<sup>1,14</sup> That is, normal physiologic feedback mechanisms in the steroid production system react to the age-related decline in steroid hormones by *increasing* the amount of cholesterol, in an effort to boost

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production back to more youthful levels.<sup>18</sup> By this line of reasoning, then, elevated cholesterol is, paradoxically, a normal (if not a healthy) response to falling steroid hormones with age.

Dzugan's hypothesis is readily tested. If it is correct, then by carefully restoring steroid hormone levels to their optimal, youthful concentrations, we should see an immediate drop in total cholesterol. Of course, we would also expect to see improvement in other physiologic parameters that rely on healthy steroid levels as well.

### A Pair of Landmark Studies

Dzugan set out to test his radical hypothesis with a bold new strategy in 1996. He defined for the first time the notion of *hormonorestorative therapy* (HT) for the regimen that was used in his first group of patients.<sup>1</sup> According to Dzugan's study protocol, HT involves therapy with multiple bio-identical hormones, administered in proper ratios and on dosing schedules designed to simulate the natural human production cycle to restore hormone concentrations to their optimal levels.<sup>1</sup>

Dzugan stresses that his method does not involve administering standard doses of hormones across the board. The vital first step is comprehensive blood testing to determine baseline levels. The next is to use that information to bring each hormone, not to its "normal" level for age (because those levels are too low by definition), but rather to the upper one-third of the range for a healthy young adult 20-30 years old. Finally, frequent re-testing is required, since changing levels of one hormone always affects levels of the others, often requiring dose modifications. This is why Dzugan uses the term "opti-

mization" rather than "normalization" for his target hormone levels.

In addition, Dzugan's method involves administering the hormones in physiologically appropriate patterns that mimic their natural pulsatile release in the body. And he stresses the use of human, or bio-identical hormones, with discontinuation of any synthetic or animal-derived hormones the patient may already be taking.<sup>1</sup> Dzugan and Rozakis also test for and restore vitamin D3 to its optimal levels, because the body uses cholesterol to manufacture D3. And of course, all of this implies that there's simply no fixed regimen for every patient — each person must receive individualized therapy.

But does it work? Dzugan's results to date have been nothing short of dramatic. In his first study, he analyzed 20 consecutive patients with high cholesterol (mean age of 59 years).<sup>18</sup> Dzugan obtained a lipid profile and determined levels of a panel of hormones — pregnenolone, dehydroepiandrosterone sulfate (DHEA-S), progesterone, total estrogen, and total testosterone. Each patient received hormonorestorative therapy, consisting of some or all of those 5 hormones tailored to meet his or her specific needs as determined by baseline levels and by the target levels for youthful adults.

All patients responded to hormonorestorative therapy with reductions in their total cholesterol, with levels dropping below **200 mg/dL** in **60%** of patients, and no patient having a final level higher than **226 mg/dL**.<sup>18</sup> The average total cholesterol level before treatment was **264 mg/dL**, while post-treatment it was **188 mg/dL**, representing an average drop in total cholesterol levels of **29%**. No patient exhibited complications or side effects related to hormonorestorative therapy, and most patients described markedly improved quality of life.

Good scientists never accept a single positive result as proof of a hypothesis — they repeat their work, ideally with larger sample sizes. Dzugan is a good scientist, and in 2010 he and his colleagues published their follow-up findings.<sup>19</sup> This time they studied 112 patients with elevated cholesterol and a mean age of 54. They obtained similar baseline labs, and provided similar hormonorestorative therapy, adding also, as needed, thyroid hormone, melatonin, and (rarely) hydrocortisone.

Their results were as dramatic as the first time. Mean serum total cholesterol dropped from **253 mg/dL** to **191 mg/dL**, a drop of **25%**. Sixty-three percent of patients saw their high cholesterol restored to safe levels; the remaining **37%**





still had levels slightly higher than normal but substantially lower than at baseline. LDL cholesterol and triglycerides fell markedly in all patients, and no patient experienced a hormone-related adverse event.<sup>19</sup>

Dzugan is quick to point out a surprising finding from this second study: HDL (“good”) cholesterol actually decreased slightly during hormonorestorative therapy, from a mean of 63 to 50 in the study group as a whole. Dzugan interprets this apparent paradox as a good sign. He notes that a primary function of HDL is to transport excess cholesterol away from tissue accumulations back to the liver for degradation.<sup>20,21</sup> Hormonorestorative therapy normalizes total cholesterol *physiologically*, by taking away the need for it to support hormone production. In that case there’s no longer a need for the extra HDL carrier molecules, and their level would in fact be expected to decrease.<sup>1</sup>

Here’s how Dzugan summarizes this stunning vindication of his theory. Elevated cholesterol levels, he says, are true risk factors or markers — but not always the cause — of coronary heart

disease.<sup>1</sup> Rather, it is the age-related decline in steroid hormones, particularly the sex hormones estrogen, progesterone, testosterone, DHEA, and pregnenolone, that triggers a feedback loop to elevate cholesterol concentrations. By this mechanism the body is striving to support levels of vital steroid hormones it needs for tissue repair and maintenance, and to respond to physiologic stresses. But because of age-impaired hormone synthesis mechanisms, the elevated cholesterol can’t actually contribute to restoring hormones to their optimum levels.

The end result, a persistently elevated cholesterol level, is indeed damaging. It ultimately produces the conditions we recognize as coronary heart disease, stroke, and their complications. Low hormone levels themselves can also be a cause of these problems. But Dzugan’s key point is that trying to correct the problem with cholesterol-lowering drugs (CLD’s) is wrong at the outset, and has no physiologic foundation.<sup>1</sup> In Dzugan’s colorful terminology, “CLD’s ‘fight’ with the consequence (high cholesterol) rather than with the cause (low levels of steroid

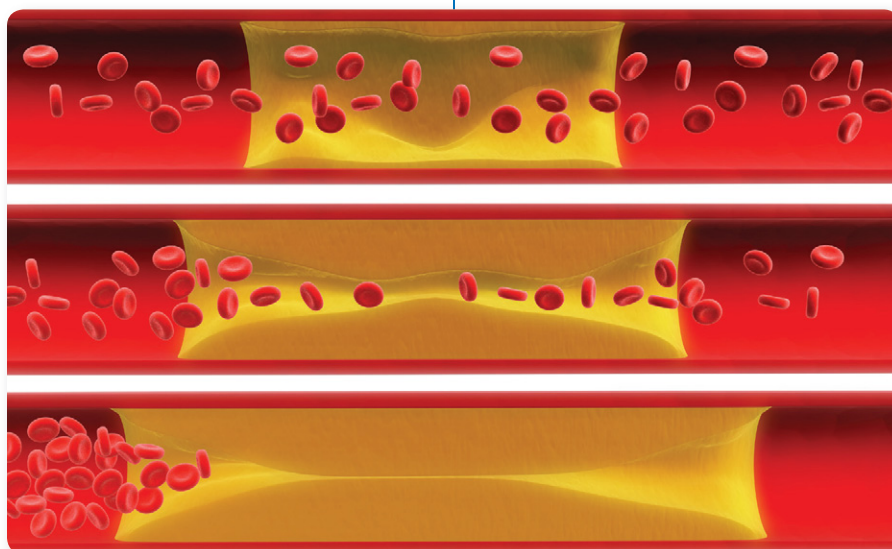
hormones).”<sup>1</sup> In a recent interview Dzugan drily noted that, “*Chasing cholesterol is good business for doctors and pharmaceutical companies, but it has nothing to do with health.*”

## Expanding the Concept: The Dzugan Method

Flushed with the success of their studies of hormonorestorative therapy and cholesterol, Dzugan, Rozakis, and colleagues turned to a variety of other conditions as they fully developed their approach to *restorative medicine*.<sup>14</sup> Say Dzugan and Rozakis, “The restorative medicine approach is effective for the diseases and conditions caused by physiologic errors because *they are all basically the same disease.*”

That’s radical talk even for cutting-edge thinkers. Dzugan himself asks rhetorically, “How can heart disease be the same as migraine, or arthritis, or depression, or Alzheimer’s disease?” His answer: because they are all ultimately caused by the same set of core problems: physiologic and hormone imbalances that result from a lifetime of acquired errors in physiology. Dzugan’s ground-breaking new method is based on his application of this fundamental truth.

Today’s standard “single mode” therapy treats each individual condition, deficiency, or excess with one (or often several) drugs, each of which further perturbs your physiology. The multimodal Dzugan method involves treating many apparently unrelated conditions (for example, menopause, erectile dysfunction, high cholesterol, fatigue, and migraine<sup>14</sup>) with a relatively small number of hormones and nutraceuticals, which act in concert to stabilize and normalize your physiology.



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Dzugan's patients, regardless of their apparent diagnosis, undergo careful screening with exhaustive medical histories and comprehensive blood testing, including determinations of steroid hormone status. A personalized program of hormone balancing is then prescribed, aimed at restoring those optimal, youthful levels of hormones. An important addition is the use of probiotics and elimination of intestinal parasites, both of which help to restore normal intestinal ecology. The beauty of this method is in its simplicity and individuality. See the interrelationships and balance the hormones, Dzugan suggests, and you will succeed in treating multiple conditions.

## Ever-Growing Success

Dzugan's method is not a vague academic hypothesis — it is showing dramatic success in managing a growing number of challenging conditions, including conditions as apparently disparate as migraines and eye disease.

Migraine headaches plague millions of people, affecting up to **12%** of the population in some countries.<sup>22</sup> Modern medicine remains woefully inadequate at managing these severe and painful attacks. As a result we use a host of partially effective drugs, many with substantial side effects, and none that reliably provide complete relief.<sup>23</sup> In fact, migraines are widely held to be incurable; we tell patients that we can manage their symptoms at best, but that they'll have to suffer from the disease forever.

Through a thorough review of the literature and his unparalleled understanding of basic human physiology, Dr. Dzugan reached a remarkable conclusion: perhaps migraines, like lipid disturbances,

reflect age-related declines in hormone regulation and loss of metabolic integrity.<sup>24</sup> Furthermore, Drs. Dzugan and Rozakis have observed that these physiologic disturbances can occur at any age. In fact, people with migraines are more likely to have elevated cholesterol and to be at risk for cardiovascular disease than non-migraine patients.<sup>25,26</sup>

As with the cholesterol hypothesis, Dzugan needed to verify his hunch with a clinical study. Between 1999 and 2005, he treated 30 migraine patients by evaluating their metabolic status and hormone levels, correcting deficiencies and restoring the balance on an individualized basis.<sup>24</sup> In addition to migraines, Dzugan's patients virtually all had concurrent chronic illnesses, ranging from chronic fatigue syndrome and depression, to lipid disorders, sleep disorders, gastrointestinal disorders, and fibromyalgia. Lab tests revealed disturbing steroid hormone deficiencies.

In this case he not only restored optimal hormonal balance, but he also provided mineral supplements to correct patients' calcium and magnesium levels, and kava root

extract plus melatonin to "reset" the pineal gland function.<sup>24</sup> Finally, he provided probiotic supplements in recognition of the close relationship between the intestine and the central nervous system.<sup>27</sup>

Every single patient responded to Dzugan's unique system of migraine management. No patient continues to have migraine symptoms, and all remain free of their concurrent illnesses as well.<sup>24</sup> Total cholesterol normalized in **92%** of patients, and no side effects of therapy were detected.

These dramatic results led Dzugan to conclude, "Simultaneous restoration of neurohormonal and metabolic integrity in migraine patients was a very effective treatment approach and was typically associated with a complete management of migraine. A new multimodal method of migraine treatment could be an effective physiologic intervention for people with migraines and could be an inexpensive resource for the healthcare system."<sup>24</sup>

In a 2010 report in the *European Ophthalmic Review*, Dzugan and colleague Dr. George Rozakis apply similar thinking to the vexing problem of age-related macu-





lar degeneration (AMD).<sup>28</sup> AMD is a vision-stealing condition affecting millions of people as they age. The finding of cholesterol deposits in the characteristic retinal lesions of AMD led Rozakis and Dzugan to consider whether hormone deficits were leading to a compensatory build-up of cholesterol. Such a build-up would be exactly analogous to the known elevation of serum cholesterol in response to age-related hormone deficiencies. Said differently, when cholesterol levels are artificially driven too low with high-dose statin drugs, cholesterol may be over-synthesized in the maculae, leading to this blinding condition. Most people do not know that in addition to its primary production in the liver, cholesterol is synthesized in cells throughout the body.

Dzugan and Rozakis now embrace a multimodal combination of hormones, nutrients, and vitamins to strike at the underlying causes of the disease.

## Summary

Dr. Dzugaan and his foresighted colleagues have discovered a new fundamental and unifying truth about human aging. They recognize that conditions we traditionally view as primary causes (such as elevated cholesterol) may in fact be simply the effects of accumulated errors of physiology. The implications are enormous: when we repair a lifetime of errors of physiology using a tailored, *multimodal* therapeutic approach, we see truly remarkable results in conditions that otherwise perplex mainstream medicine. ●

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# The MAGIC of Cholesterol Numbers

By Sergey A. Dzugan, MD, PhD, & Konstantine S. Dzugan

## THE STAGGERING TRUTH ABOUT CHOLESTEROL

Dr. Dzugan and his foresighted colleagues have discovered a new fundamental and unifying truth about human aging. They recognize that **elevated cholesterol** may in fact simply be the result of **accumulated errors of physiology** throughout a lifetime.

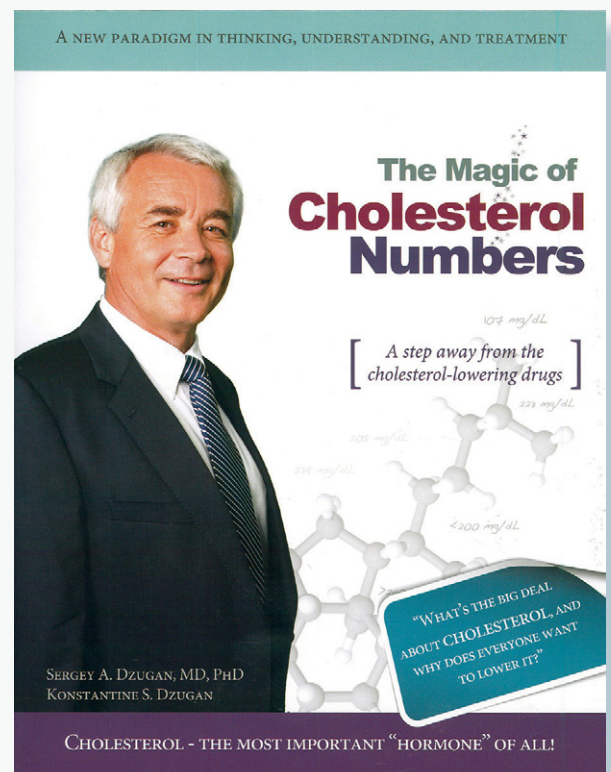
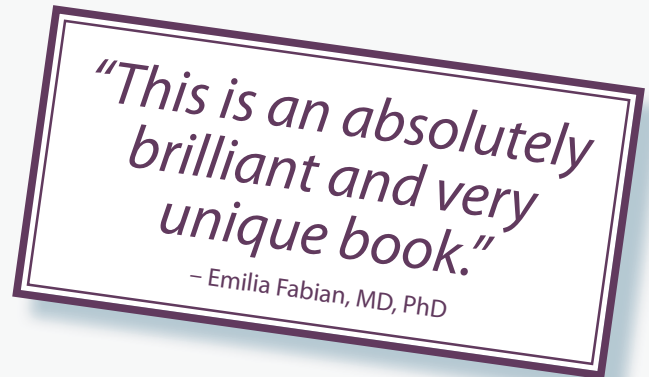
## ENORMOUS IMPLICATIONS

If the theories in *The Magic of Cholesterol Numbers* are true, then when humans repair a lifetime of errors of physiology using tailored, *multimodal* therapeutic approaches, they can see **truly remarkable results** in conditions that otherwise perplex mainstream medicine.

## WHAT YOU'LL LEARN

In *The Magic of Cholesterol Numbers*, you'll gain knowledge about:

- Why mainstream doctors have taken a disastrous approach to cholesterol.
- What the Atherosclerosis – Cholesterol Axis is and why it's important.
- What the REAL problems created by high and low cholesterol are.
- How cholesterol and steroid hormones are linked.
- What the "Grandmother" of steroids truly is.
- Why there are so many unfavorable misconceptions about estrogen in women.
- How Dr. Dzugan's cutting edge hypothesis about high cholesterol is changing medicine.
- And much, much more!



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#### LIPID PROFILE

**Total Cholesterol**

**LDL** (low-density lipoprotein) calculated

**HDL** (high-density lipoprotein)

**Triglycerides**

#### CARDIAC MARKERS

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

**Homocysteine**

#### HORMONES

**DHEA-S**

**Free and Total Testosterone**

**Estradiol** (an estrogen)

**TSH** (thyroid function)

**Vitamin D 25 hydroxy**

NOW  
INCLUDES  
VITAMIN D

#### METABOLIC PROFILE

**Glucose**

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

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

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

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

#### COMPLETE BLOOD COUNT (CBC)

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

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

**Platelet count**

#### CANCER MARKER

**PSA (Prostate Specific Antigen)**

### FEMALE PANEL

#### LIPID PROFILE

**Total Cholesterol**

**LDL** (low-density lipoprotein) calculated

**HDL** (high-density lipoprotein)

**Triglycerides**

#### CARDIAC MARKERS

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

**Homocysteine**

#### HORMONES

**Progesterone**

**DHEA-S**

**Free and Total Testosterone**

**Estradiol** (an estrogen)

**TSH** (thyroid function)

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# IS IT LOW T?

TAKE  
THE TEST  
←

PLEASE ANSWER YES OR NO

- |  | YES | NO |
|--|-----|----|
| 1. DO YOU HAVE A DECREASE IN LIBIDO (SEX DRIVE)?                           |     |    |
| 2. DO YOU HAVE A LACK OF ENERGY?   |     |    |
| 3. DO YOU HAVE A DECREASE IN STRENGTH AND/OR ENDURANCE?                    |     |    |
| 4. HAVE YOU LOST HEIGHT?   |     |    |
| 5. HAVE YOU NOTICED A DECREASED "ENJOYMENT OF LIFE?"                       |     |    |
| 6. ARE YOU SAD AND/OR GRUMPY?  |     |    |
| 7. ARE YOUR ERECTIONS LESS STRONG?   |     |    |
| 8. HAVE YOU NOTICED A RECENT DETERIORATION IN YOUR ABILITY TO PLAY SPORTS? |     |    |
| 9. ARE YOU FALLING ASLEEP AFTER DINNER?                                    |     |    |
| 10. HAS THERE BEEN A RECENT DETERIORATION IN YOUR WORK PERFORMANCE?        |     |    |

The above ADAM\* questionnaire was developed by John E. Morley, 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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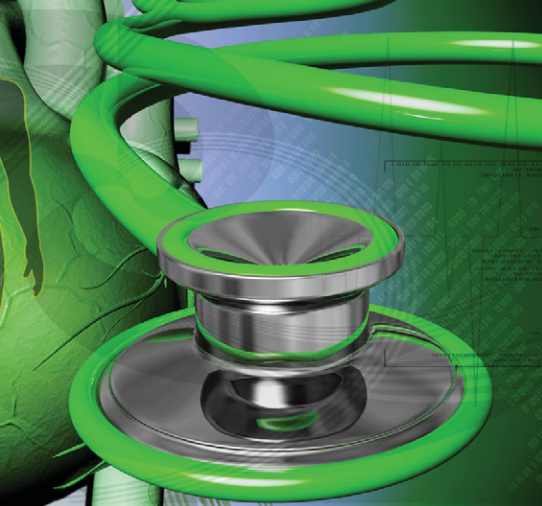
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## SUPER FOODS

BY WILLIAM GAMONSKI

# Time to Celebrate CELERY

Although celery is often a complimentary addition to soups and dishes, its substantial health protection makes it a star player in any meal. Each stalk of celery, along with its seeds and leaves, contains **vitamin K**, **folate**, **vitamin A**, **potassium**, **vitamin C**, and **molybdenum**.<sup>1</sup> It also contains a hefty dose of the unique compound **3-n-butylphthalide**,

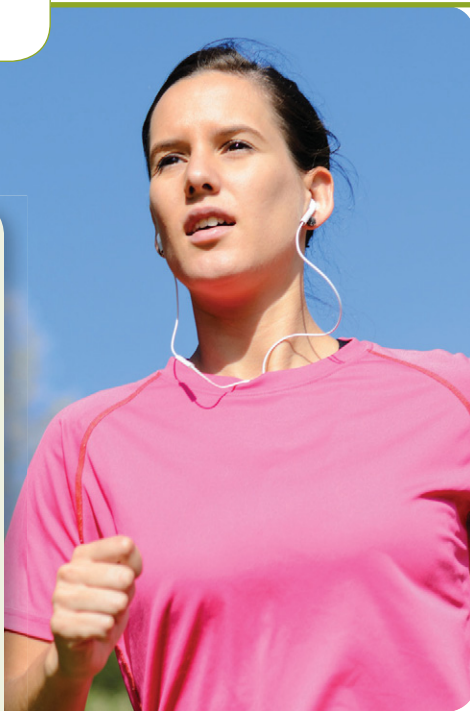
which has shown to enhance cognitive function in a mouse model of Alzheimer's disease.<sup>2</sup> Incorporating celery into your daily diet can provide numerous health benefits, from treating gout to safeguarding against cardiovascular disease, cancer, and diabetes.



# SUPER FOODS

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

1. Although it's grown all-year round, celery is freshest during the summer months.
2. Choose crisp, compact, and relatively light celery in which the stalks snap off easily.
3. The leaves of the celery should be pale to bright green and devoid of yellow and black patches.
4. Store in a container or plastic bag in the refrigerator to retain firmness and freshness.



## Celery's Tale

Celery (*Apium graveolens*) belongs to the *Umbelliferae* family and is derived from wild celery that contains more leaves and less stalks. Although celery is believed to have originated in the Mediterranean, it's also indigenous to India, Nepal, and China. It was first recognized for its medicinal properties as early as the 9th century before being utilized as a food source during the Middle Ages. Celery didn't become a common vegetable until the 1800s in Europe and later was introduced to the United States in the 1900s.<sup>1</sup>

## Anti-Cancer Power

A growing body of evidence indicates that **flavonoids** are an integral component of any cancer-preventive strategy.<sup>3</sup> Two of these flavonoids, **apigenin** and **luteolin**, found in celery are distinguished

for their ability to protect against various types of cancer.<sup>4</sup> In one study reported in the *International Journal of Cancer*, scientists compared the intake of five flavonoids in women with and without ovarian cancer.<sup>4</sup> After adjusting for confounding factors of tubal ligation (tubes tied), physical activity and duration of oral contraceptive use, researchers found only apigenin to be associated with reduced ovarian cancer risk, with the highest intake of the flavonoid linked to a **21%** reduction risk.<sup>4</sup> It is believed apigenin works by decreasing the expression of vascular endothelial growth factor (VEGF), a protein that stimulates the formation of new blood vessels that are vital for tumor growth.<sup>5</sup>

Pancreatic cancer is frequently diagnosed at more advanced stages in patients, making it difficult to treat and causing poor survival rates.<sup>6</sup> Compelling data suggests that apigenin can combat pancreatic cancer through multiple mechanisms including impairing glucose uptake,<sup>7</sup> triggering apoptosis (programmed cell death),<sup>8</sup> and disrupting the cancer cell cycle.<sup>9</sup>

Other laboratory findings show that apigenin has inhibitory growth effects against thyroid, leukemia, lung, and prostate cancers.<sup>10</sup>

Luteolin, another celery flavonoid, has potent anti-cancer activity, particularly against colon cancer. Colon cancer cells secrete insulin-like growth factor II (IGF II), which plays a major role in signaling uncontrolled cell growth and replication. In a study published in the journal *BMC Gastroenterology*, researchers observed that luteolin suppresses the secretion of IGF II, thus halting the progression of colon cancer.<sup>11</sup>

Both apigenin and luteolin provide a powerful defense against breast cancer. Italian researchers discovered that the highest intake of both flavonoids reduced the risk of breast cancer by **19%** compared to the lowest intakes.<sup>12</sup>

## Cardioprotective Effects

The heart promoting properties of celery are related to its ability to reduce the development of major risk factors that contribute to cardiovascular disease. In one study, researchers at the Ulleval University Hospital in Norway observed that increasing intakes of vitamin C rich foods, such as celery, led to less thickening of the carotid artery, thereby ensuring optimal blood flow and preventing atherosclerosis and subsequent heart disease.<sup>13</sup>

In a study published in the journal *Pharmacology Magazine*, scientists found that rats supplemented with celery seed extract daily for 60 days significantly reduced triglycerides levels by **22%** and LDL cholesterol by **27%**, along with a **28%** increase in beneficial HDL cholesterol.<sup>14</sup> The lipid



lowering effects of celery are due to the increased conversion of cholesterol into bile acids, which are eliminated in feces.<sup>15</sup>

In addition to its beneficial effects on lipid levels, celery also shows promise in lowering blood pressure. In the laboratory, celery seeds exhibited potent inhibition of angiotensin converting enzyme (ACE), a protein responsible for constricting blood vessels and elevating blood pressure.<sup>16</sup> This may partially explain the results reported in a study published in the *Tehran University Medical Journal* in which 37 hypertensive patients between the ages of 45 and 65 administered **6 grams** of celery seed powder significantly lowered mean systolic and diastolic readings by **17.1** and **4.4** mmHg, respectively.<sup>17</sup>

## Diabetes Prevention

By 2030, a projected 439 million adults worldwide will be living with diabetes.<sup>18</sup> Emerging research indicates that consuming greater amounts of vitamin K, present in celery, can decrease the risk of

developing this concerning disease. In a recent study, researchers at the University Medical Center Utrecht in the Netherlands assessed the relationship between vitamin K intake and the risk of type II diabetes in more than 38,000 Dutch men and women aged 20-70 years over a 10-year period.<sup>19</sup> Taking into account confounding factors such as age, waist circumference, smoking, and physical activity, researchers concluded that those with the highest intake of vitamin K were nearly **20%** less likely to develop type II diabetes compared with those who had the lowest intake of the vitamin.<sup>19</sup>

Although the mechanisms are not yet clear, the research team noted that vitamin K might exert its protective effect by reducing inflammation, which in turn increases insulin sensitivity and improves glucose metabolism.

The anti-diabetic benefits of celery can also be attributed to its unique ability to fight *Helicobacter pylori* (*H. pylori*), a bacterium that leads to a near **three-fold** increase in the risk of type II diabetes.<sup>20</sup> In

a study reported in the *Journal of Pharmacy and Pharmacology*, researchers identified an antimicrobial compound in celery seeds that is highly effective in blocking the growth of gastric *H. pylori*.<sup>21</sup>

## Relieving Gout

While research has focused primarily on finding safe treatments for rheumatoid arthritis and osteoarthritis, the incidence of gout has quietly risen in the past two decades.<sup>22</sup> Gout is a form of arthritis characterized by elevated levels of uric acid, which causes the formation of crystals in joints that produce inflammation and pain.<sup>23</sup> Celery might help treat gout by modulating uric acid levels. Egyptian researchers tested the effects of different plant extracts, including celery seed, on uric acid levels in rats induced with gout. At the end of the study, rats with gouty arthritis treated with celery seed extracts experienced a **56%** reduction in uric acid levels, the highest of all the plant extracts.<sup>23</sup>



## Nutritional Content of Celery, One Standard NLEA\* Serving<sup>25</sup>

Nutrients	Amount	DV(%)
Vitamin K	32.2 mcg	40%
Folate	39.6 mcg	10%
Vitamin A	494 IU	10%
Potassium	286 mg	8%
Dietary Fiber	1.8 g	7%
Vitamin C	3.4 mg	6%
Manganese	0.1 mg	6%
Calcium	44 mg	4%

\* NLEA stands for the Nutritional Labeling and Education Act. This is a law that sets legal definitions for the terms that are used on food labels. NLEA requires that manufacturers use standard serving sizes on food labels that are based on FDA-established lists of "Reference Amounts Customarily Consumed per Eating Occasion."<sup>26</sup>

# SUPER FOODS

Additional research shows that celery seeds might have potential use in alleviating inflammation and pain associated with gout. A study reported in the journal *Phytomedicine* revealed that celery seeds can provide dramatic pain relief by suppressing cyclooxygenase-2 (COX-2), an enzyme involved in the synthesis of pro-inflammatory cells.<sup>24</sup>

## Summary

While celery is regularly added to soups and dishes as a complimentary component, its vast amount of nutrients, from vitamin K, potassium, folate, and magnesium, to its potent flavonoids apigenin and luteolin, make it a central player in any health-boosting meal. Celery's stalks, along with its seeds and leaves, offer tremendous protection against heart disease, cancer, and diabetes, in addition to providing an effective treatment for gout. An easy way to incorporate celery into your diet is to eat the stalks with peanut butter or use it as a main vegetable in soups and salads. ●

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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CBC/Chemistry Profile      DHEA-S Homocysteine      TSH for thyroid function Free Testosterone      Total Testosterone Estradiol      Vitamin D 25- hydroxy PSA (prostate-specific antigen) C-Reactive Protein (high-sensitivity)		
○ <b>FEMALE LIFE EXTENSION PANEL (LC322535)</b>	<b>\$269</b>	
CBC/Chemistry Profile      DHEA-S Estradiol      Homocysteine Progesterone      TSH for thyroid function Free Testosterone      Total Testosterone C-Reactive Protein      Vitamin D 25- hydroxy (high sensitivity)		
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CBC/Chemistry Profile      DHEA-S Insulin      PSA Free Testosterone      (prostate-specific antigen) Estradiol      Total Testosterone Free T3      TSH C-Reactive Protein      Free T4 (high sensitivity)      SHBG		
○ <b>FEMALE WEIGHT LOSS PANEL (LCWLF)</b>	<b>\$299</b>	
CBC/Chemistry Profile      DHEA-S Progesterone      Insulin Free Testosterone      Total Testosterone Estradiol      TSH Free T3      Free T4 C-Reactive Protein      SHBG (high sensitivity)		
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<b>Pregnenolone and Total Estrogens</b> 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.		
○ <b>LIFE EXTENSION THYROID PANEL (LC304131)</b>	<b>\$75</b>	
TSH, T4, Free T3, Free T4.		
○ <b>FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011)</b>	<b>\$299</b>	
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		
○ <b>MALE COMPREHENSIVE HORMONE PANEL* (LC100010)</b>	<b>\$299</b>	
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		

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

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

## BONE & JOINT HEALTH

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

## BRAIN HEALTH

Acetyl-L-Carnitine  
Acetyl-L-Carnitine-Arginate  
CDP Choline Capsules  
Cognitex® with NeuroProtection Complex  
Cognitex® with Pregnenolone &  
NeuroProtection Complex  
Cognitex® Basics  
DMAE  
Ginkgo Biloba Certified Extract™  
Huperzine A  
Lecithin with B5 and BHA  
Lecithin Granules  
Methylcobalamin Lozenges  
Neuro-Mag™ Magnesium L-Threonate  
Optimized Ashwagandha Extract  
Phosphatidylserine Capsules  
Rhodiola Extract  
Super Ginkgo Extract  
Vinpocetine

## DIGESTIVE

Bifido GI Balance  
Bromelain Powder  
Carnosoothe w/PicroProtect  
Digest RC™  
Enhanced Super Digestive 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®  
Overxcast Polarized Sunglasses  
Solarshield Sunglasses  
Super Zeaxanthin with Lutein &  
Meso-Zeaxanthin and C3G  
Vision Optimizer

## FIBER

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

## FOOD

Spicy Cruciferous Vegetable Soup  
Cruciferous Vegetable Soup  
Rich Rewards Coffee

## HAIR CARE

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

## HEART HEALTH

AppleWise Polyphenol  
Advanced Lipid Control  
Aspirin (Enteric Coated)  
Cho-Less™  
D-Ribose Capsules  
D-Ribose Powder  
Endothelial Defense™ with  
Full-Spectrum Pomegranate™  
Fibrinogen Resist  
Forskolin  
Garlicforce™  
Homocysteine Resist  
Krill Healthy Joint Formula  
Natural BP Management  
Olive Leaf Vascular Support  
Peak ATP® with GlycoCarn®  
PhosphOmega®  
Policosanol  
Pycnogenol® French Maritime Pine Bark Extract  
Red Yeast Rice  
Super Absorbable CoQ10™ with d-Limonene  
Super Omega-3 EPA/DHA with Sesame  
Lignans & Olive Fruit Extract  
Super Ubiquinol CoQ10  
Super Ubiquinol CoQ10 with Enhanced  
Mitochondrial™ Support  
Sytinol™  
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®  
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)  
Aloe Vera Force™  
Buffered Vitamin C Powder  
Echinacea  
Enhanced Life Extension Whey Protein  
i26 Hyperimmune Egg  
Immune Protect with PARACTIN®  
Lactoferrin  
Lifeshield® Immunity™  
Maitake SX-Fraction  
Norwegian Shark Liver Oil  
Optimized Fucoidan w/Maritech® 926  
Primal Defense™  
ProBoost™ Thymic Protein A  
Pure Gar™  
Sambu® Guard  
Supercritical Oreganoforce™  
Thymic Immune Factors  
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  
Serraflazyme  
SODzyme™ with GliSODin® and Wolfberry  
Super Omega-3 EPA/DHA with Sesame  
Lignans & Olive Fruit Extract  
Tart Cherry  
Udo's Choice Oil  
Zylamend® 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



# Products

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  
LifeShield® Breathe™  
The Capsule Filler Machine

## MITOCHONDRIAL SUPPORT

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

## MOOD RELIEF

Adrenal Energy Formula™  
Bioactive Milk Peptides  
Holy Basil  
LifeShield® Cordyceps  
L-Theanine  
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®  
Lavinil Underarm Deodorant  
Lifting & Tightening Complex  
LifeShield® Reishi  
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®  
GlucFit™  
Hearos™ Ear Plugs  
Ideal Bowel Support 299  
Maitake SX-Fraction™  
Migra-eeze™  
Natural Female Support  
Organic Total Body Cleanse

Pecta-Sol®  
Potassium Iodide  
PQQ Caps with BioPQQ™  
PteroPure™  
Prelox® Natural Sex for Men®  
Pyridoxal 5' - Phosphate  
Rosmarinic Acid Extract  
Ultra Natural Prostate w/AprèsFlex™ and Standardized Lignans

## SPORTS PERFORMANCE

Creatine Capsules  
Creatine Powder  
Enhanced Life Extension Protein  
DMG (N, N-dimethylglycine)  
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	\$34.00	\$25.50		
	Buy 4 bottles, price each	30.00	22.50		
00788	<b>ACETYL-L-CARNITINE ARGINATE</b> - 100 caps	59.00	44.25		
	Buy 4 bottles, price each	50.99	38.24		
01628	<b>ADRENAL ENERGY FORMULA™</b> - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01308	<b>ADVANCED LIPID CONTROL</b> - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01521	<b>ADVANCED ORAL HYGIENE</b> - 60 veg. mint lozenges	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00681	<b>AHCC</b> - 500 mg, 30 caps	59.98	44.99		
	Buy 4 bottles, price each	53.33	40.00		
*46925	<b>ALLI® REFILL PACK</b> - 120 caps	69.95	58.00		
01375	<b>ALOE VERA FORCE™</b> - 60 veg. caps	34.95	26.21		
00457	<b>ALPHA-LIPOIC ACID w/BIOTIN (SUPER)</b> - 250 mg, 60 caps	37.00	27.75		
	Buy 4 bottles, price each	32.00	24.00		
01440	<b>ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO</b> - 100 caps	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01510	<b>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT</b> - 60 veg. caps	35.00	26.25		
	Buy 4 bottles, price each	32.00	24.00		
01509	<b>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT &amp; INTEGRA LEAN® (ADVANCED)</b> - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01625	<b>APPLEWISE POLYPHENOL EXTRACT</b> - 600 mg, 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	19.00	14.25		
01039	<b>ARGININE/ORNITHINE</b> - 500/250, 100 caps	16.00	12.00		
	Buy 4 bottles, price each	14.50	10.88		
00038	<b>ARGININE/ORNITHINE POWDER</b> - 150 grams	22.95	17.21		
	Buy 4 bottles, price each	19.00	14.25		
01624	<b>(L)-ARGININE CAPS</b> - 700 mg, 200 veg. caps	26.50	19.88		
	Buy 4 bottles, price each	23.25	17.44		
01025	<b>(L)-ARGININE FREE-FORM POWDER</b> - 100 grams	15.98	11.99		
	Buy 4 bottles, price each	14.31	10.73		
01617	<b>ARTHRONAX™ w/THEAFLAVINS &amp; APRESFLEX™</b> - 120 veg. caps	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01618	<b>ARTHRONAX™ ADVANCED w/UC-II® &amp; APRESFLEX™</b> - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01404	<b>ARTHRO-IMMUNE JOINT SUPPORT</b> - 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
00919	<b>ARTICHOKE LEAF EXTRACT</b> - 500 mg, 180 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.38	19.04		
00080	<b>ASCORBIC ACID POWDER</b> - 454 grams	38.00	28.50		
	Buy 4 bottles, price each	34.93	26.20		
00082	<b>ASCORBYL PALMITATE</b> - 500 mg, 100 caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		

**SUB-TOTAL OF COLUMN 1**

NOVEMBER 2012

No.		Retail Each	Member Each	Qty	Total
00888	<b>ASHWAGANDHA EXTRACT (OPTIMIZED)</b> - 60 veg. caps	\$10.00	\$7.50		
	Buy 4 bottles, price each	9.00	6.75		
01066	<b>ASPIRIN</b> - 81 mg, 300 enteric coated tablets	6.00	4.50		
	Buy 4 bottles, price each	5.33	4.00		
00708	<b>ASTAXANTHIN</b> - 2 mg, 30 softgels	10.25	7.69		
<b>B</b>					
00920	<b>BENFOTIAMINE w/ THIAMINE</b> - 100 mg, 120 veg. caps	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.60	13.95		
00925	<b>BENFOTIAMINE (MEGA)</b> - 250 mg, 120 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01206	<b>BERRY COMPLETE</b> - 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	18.67	14.00		
01406	<b>BERRY COMPLETE w/RZD™ ACAI (ENHANCED)</b> - 60 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.00	19.50		
00664	<b>BETA-CAROTENE</b> - 25,000 IU, 100 softgels	11.25	8.44		
	Buy 4 bottles, price each	10.13	7.60		
00653	<b>BETTERWOMAN®</b> - 40 caps	40.00	30.00		
	Buy 4 bottles, price each	38.00	28.50		
01622	<b>BIFIDO GI BALANCE</b> - 60 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01073	<b>BILBERRY EXTRACT</b> - 100 mg, 100 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
01512	<b>BIOACTIVE MILK PEPTIDES</b> - 30 caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01631	<b>BIO-COLLAGEN w/PATENTED UC-II®</b> - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
*01006	<b>BIOSIL™</b> - 5 mg, 30 veg. caps	18.95	15.16		
*01007	<b>BIOSIL™</b> - 1 fl oz	29.99	23.99		
00102	<b>BIOTIN</b> - 600 mcg, 100 caps	7.50	5.63		
	Buy 4 bottles, price each	6.50	4.88		
00145	<b>BIOTIN POWDER</b> - 30 grams	12.50	9.38		
	Buy 4 bottles, price each	11.00	8.25		
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 - ARM CUFF (medium)</b>	99.95	64.97		
70004	<b>BLOOD PRESSURE MONITOR - WRIST (travel size)</b>	69.95	52.46		
01214	<b>BLUEBERRY EXTRACT</b> - 60 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
01438	<b>BLUEBERRY EXTRACT w/ POMEGRANATE</b> - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01506	<b>BONE FORMULA (DR. STRUM'S INTENSIVE)</b> - 300 veg. caps	56.00	42.00		
	Buy 4 bottles, price each	50.00	37.50		
01611	<b>BONE RESTORE</b> - 150 caps	22.50	16.88		
	Buy 4 bottles, price each	19.50	14.63		
01211	<b>BONE STRENGTH FORMULA w/KOACT®</b> - 120 caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
00313	<b>BONE-UP®</b> - 240 caps	24.95	18.71		
	Buy 4 bottles, price each	22.50	16.88		
01379	<b>BOOSTER</b> - 60 softgels	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01680	<b>BOOSTER w/ADVANCED K2 COMPLEX (SUPER)</b> - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
00621	<b>BORON</b> - 3 mg, 100 caps	5.95	4.46		
	Buy 4 bottles, price each	5.25	3.94		

**SUB-TOTAL OF COLUMN 2**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS



No.		Retail Each	Member Each	Qty	Total
00202	<b>BOSWELLA</b> - 100 caps	\$38.00	\$28.50		
	Buy 4 bottles, price each	30.00	22.50		
00258	<b>BOSWELLA TOPICAL CREAM</b> - 4 oz	15.00	11.25		
	Buy 4 jars, price each	13.00	9.75		
01253	<b>BRANCHED CHAIN AMINO ACIDS</b> - 90 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.00	12.75		
00999	<b>BREAST HEALTH FORMULA</b> - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
00893	<b>BRITE EYES III</b> - 2 vials, 5 ml each	34.00	25.50		
	Buy 4 boxes, price each	32.00	24.00		
00136	<b>BROMELAIN POWDER</b> - 100 grams	21.00	15.75		
	Buy 4 bottles, price each	18.75	14.06		
01203	<b>BROMELAIN (SPECIALLY-COATED)</b> - 500 mg, 60 enteric coated tablets	21.00	15.75		
	Buy 4 bottles, price each	19.00	14.25		
00884	<b>BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID</b> - 60 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.60	29.70		
<b>C</b>					
01015	<b>CALCIUM CITRATE w/VITAMIN D</b> - 300 caps	\$24.00	\$18.00		
	Buy 4 bottles, price each	21.25	15.94		
00535	<b>CALCIUM D-GLUCARATE</b> - 200 mg, 60 caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
01693	<b>CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR</b> - 414 grams powder	60.00	45.00		
	Buy 4 jars, price each	54.00	40.50		
	Buy 8 jars, price each	50.00	37.50		
01694	<b>CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR</b> - 60 individual packs	64.00	48.00		
	Buy 4 boxes, price each	60.00	45.00		
	Buy 8 boxes, price each	56.00	42.00		
00118	<b>CAPSULE FILLER MACHINE FOR "00" CAPSULES</b>	18.95	14.21		
	Buy 4 machines, price each	18.25	13.69		
00613	<b>CAPSULE FILLER MACHINE FOR "0" CAPSULES</b>	18.95	14.21		
	Buy 4 machines, price each	18.25	13.69		
00916	<b>CARNITINE w/GLYCOCARN® (OPTIMIZED)</b> - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01041	<b>L-CARNITINE</b> - 500 mg, 30 caps	15.00	11.25		
	Buy 4 bottles, price each	13.20	9.90		
01258	<b>CARNOSOOTHIE w/PICROPROTECT™</b> - 60 veg. caps	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
01287	<b>CARNOSINE (SUPER)</b> - 500 mg, 90 caps	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01003	<b>CAT MIX</b> - 100 grams powder	15.00	11.25		
	Buy 4 jars, price each	12.00	9.00		
00390	<b>CDP CHOLINE CAPS</b> - 250 mg, 60 caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	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	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00550	<b>CHLORELLA</b> - 500 mg, 200 tablets	23.50	17.63		
	Buy 4 bottles, price each	21.00	15.75		
01571	<b>CHLOROPHYLLIN w/ZINC</b> - 100 mg, 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	20.00	15.00		
01359	<b>CHO-LESS™</b> - 90 capsules	32.50	24.38		
00541	<b>CHOLINE CHLORIDE</b> - 16 oz liquid	12.95	9.71		
	Buy 4 bottles, price each	12.17	9.13		

**SUB-TOTAL OF COLUMN 3**

No.		Retail Each	Member Each	Qty	Total
00364	<b>CHONDROITIN SULFATE CONCENTRATE</b> - 400 mg, 60 tablets	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.00	13.50		
01477	<b>CHROMIUM ULTRA</b> - 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
01504	<b>CHROMIUM w/CROMINEX® 3+ (OPTIMIZED)</b> - 500 mcg, 60 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
00551	<b>CILANTRO HERBAL EXTRACT</b> - 1 oz	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
01503	<b>CINSULIN® w/INSEA® AND CROMINEX® 3+</b> - 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
00069	<b>CITRUS BIOFLAVONOID</b> - 100 caps	17.63	13.22		
	Buy 4 bottles, price each	16.40	12.30		
00818	<b>CLA BLEND w/SESAME LIGNANS (SUPER)</b> - 1000 mg, 120 softgels	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
	Buy 10 bottles, price each	26.33	19.75		
00819	<b>CLA BLEND w/GUARANA &amp; SESAME (SUPER)</b> -1000 mg, 120 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.33	28.75		
00050	<b>COD LIVER OIL (EMULSIFIED)</b> - 12 fl oz (355 ml)	15.59	11.69		
	Buy 4 bottles, price each	13.10	9.83		
00293	<b>COD LIVER OIL (EMULSIFIED)</b> - 100 softgels (Emulsified)	10.97	8.23		
	Buy 4 bottles, price each	10.34	7.76		
01707	<b>COFFEEGENIC™ WEIGHT MANAGEMENT w/GREEN COFFEE EXTRACT</b> - 90 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	42.00	31.50		
01697	<b>COGNITEX® w/PREGNENOLONE &amp; NEUROPROTECTION COMPLEX</b> - 90 softgels	74.00	55.50		
	Buy 4 bottles, price each	66.60	49.95		
	Buy 12 bottles, price each	64.00	48.00		
00921	<b>COGNITEX® w/o PREGNENOLONE w/NEUROPROTECTION COMPLEX</b> - 90 softgels	72.00	54.00		
	Buy 4 bottles, price each	64.00	48.00		
	Buy 12 bottles, price each	62.00	46.50		
01421	<b>COGNITEX® BASICS</b> - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
00110	<b>COMPLETE B-COMPLEX</b> - 180 caps	21.50	16.13		
	Buy 4 bottles, price each	18.00	13.50		
00119	<b>COPPER CAPSULES</b> - 2 mg, 100 caps	9.91	7.43		
	Buy 4 bottles, price each	8.96	6.72		
00949	<b>COQ10™ w/ α-LIMONENE (SUPER ABSORBABLE)</b> - 50 mg, 60 softgels	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
	Buy 10 bottles, price each	20.00	15.00		
00950	<b>COQ10™ w/ α-LIMONENE (SUPER ABSORBABLE)</b> - 100 mg, 100 softgels	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
	Buy 10 bottles, price each	56.00	42.00		
01226	<b>COQ10 (SUPER UBIQUINOL)</b> - 100 mg, 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
	Buy 10 bottles, price each	48.00	36.00		
01426	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -100 mg, 60 softgels	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01425	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -50 mg, 100 softgels	58.00	43.50		
	Buy 4 bottles, price each	53.00	39.75		
	Buy 10 bottles, price each	50.00	37.50		
01427	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)</b> -50 mg, 30 softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	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>CORILUS 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>	29.00	21.75		
	Buy 4 bottles, price each	26.63	19.97		
01646	<b>CREATINE WHEY GLUTAMINE POWDER - 1000 grams (vanilla)</b>	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01530	<b>CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle</b>	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	<b>(SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle</b>	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
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	\$65.00	\$48.75		
	Buy 4 bottles, price each	59.00	44.25		
00658	<b>7-KETO® DHEA METABOLITE</b> - 25 mg, 100 caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01479	<b>7-KETO® DHEA METABOLITE</b> - 100 mg, 60 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
01640	<b>DHA (VEGETARIAN SOURCED)</b> - 200 mg, 30 veg. softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00607	<b>DHEA</b> - 25 mg, 100 tablets (dissolve in mouth)	14.00	10.50		
	Buy 4 bottles, price each	11.75	8.81		
01478	<b>DHEA COMPLETE</b> - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	43.20	32.40		
00335	<b>DHEA</b> - 25 mg, 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
00454	<b>DHEA</b> - 15 mg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
00882	<b>DHEA</b> - 50 mg, 60 caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
00883	<b>DHEA</b> - 100 mg, 60 caps	22.50	16.88		
	Buy 4 bottles, price each	19.00	14.25		
01358	<b>DIGEST RC</b> - 30 tablets	19.95	14.96		
	Buy 4 boxes, price each	17.00	12.75		
01272	<b>DIGESTIVE ENZYMES (ENHANCED SUPER)</b> - 100 veg. caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
00034	<b>D,L-PHENYLALANINE CAPSULES</b> - 500 mg, 100 caps	18.75	14.06		
	Buy 4 bottles, price each	16.00	12.00		
00257	<b>DMAE BITARTRATE</b> - 150 mg, 200 caps	14.00	10.50		
	Buy 4 bottles, price each	10.50	7.88		
00059	<b>DMG</b> - 125 mg, 60 tablets	22.80	17.10		
	Buy 4 boxes, price each	21.00	15.75		
01570	<b>DNA PROTECTION FORMULA</b> - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	32.00	24.00		
00544	<b>DOG MIX</b> - 100 grams powder	19.50	14.63		
	Buy 4 jars, price each	16.00	12.00		
00321	<b>DR. PROCTOR'S ADVANCED HAIR FORMULA</b> - 2 oz	39.95	29.96		
	Buy 4 bottles, price each	32.00	24.00		
00320	<b>DR. PROCTOR'S HAIR FORMULA SHAMPOO</b> - 8 oz	24.95	18.71		
	Buy 4 bottles, price each	22.00	16.50		
00899	<b>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE</b> - 2.4 oz	39.95	29.96		
	Buy 4 jars, price each	38.95	29.21		
00240	<b>DUAL-C</b> - 90 caps	12.00	9.00		
	Buy 4 bottles, price each	10.50	7.88		
<b>E</b>					
00388	<b>ECHINACEA EXTRACT</b> - 250 mg, 60 caps	\$14.35	\$10.76		
	Buy 4 bottles, price each	12.50	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	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
00997	<b>ENDOTHELIAL DEFENSE™ w/GLISODIN®</b> - 60 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
00625	<b>EPA/DHA (MEGA)</b> - 120 softgels	19.95	14.96		
	Buy 4 bottles, price each	18.00	13.50		
01042	<b>EUROPEAN LEG SOLUTION DIOSMIN 95</b> - 600 mg, 30 veg. tabs	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01514	<b>EYE PRESSURE SUPPORT w/MIRTOGENOL®</b> - 30 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		

SUB-TOTAL OF COLUMN 7

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

No.		Retail Each	Member Each	Qty	Total
<b>F</b>					
01054	<b>FACE MASTER® PLATINUM</b>	\$199.00	\$199.00		
00965	<b>FAST-ACTING JOINT FORMULA</b> - 30 caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
20053	<b>FEM DOPHILUS®</b> - 30 caps	25.95	19.46		
20055	<b>FEM DOPHILUS®</b> - 60 caps	39.95	29.96		
01064	<b>FEMMESENCE MACAPAUSE®</b> - 120 veg. caps	34.99	26.24		
01311	<b>FERNBLOCK® w/SENDARA™ (ENHANCED)</b> - 30 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	35.00	26.25		
00229	<b>FIBER FOOD CAPS</b> - 200 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
	Buy 10 bottles, price each	11.90	8.93		
00718	<b>FIBRINOGEN RESIST™</b> - 30 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	44.00	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	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
00347	<b>FOLIC ACID + B12 CAPSULES</b> - 200 caps	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
00300	<b>FORSKOLIN</b> - 10 mg, 60 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
01513	<b>FUCOIDAN w/MARITECH® 926 (OPTIMIZED)</b> - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
00993	<b>FUCOXANTHIN-SLIM™</b> - 90 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.00	29.25		
<b>G</b>					
00127	<b>GABA POWDER</b> - 100 grams	\$23.75	\$17.81		
	Buy 4 bottles, price each	22.50	16.88		
00559	<b>GAMMA E TOCOPHEROL/TOCOTRIENOLS</b> - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	37.00	27.75		
00759	<b>GAMMA E TOCOPHEROL w/SESAME LIGNANS</b> - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01394	<b>(OPTIMIZED) GARLIC</b> - 200 veg. caps	24.95	18.71		
	Buy 4 bottles, price each	21.00	15.75		
01378	<b>GARLIC FORCE™</b> - 30 softgels	34.95	26.21		
00117	<b>GELATIN CAPSULES</b> - 1000 empty caps size "00"	19.00	14.25		
	Buy 4 bags, price each	18.00	13.50		
01301	<b>GH PITUITARY SUPPORT DAY FORMULA</b> - 120 vegetarian tabs	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01302	<b>GH PITUITARY SUPPORT NIGHT FORMULA</b> - 120 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.50	16.88		
01228	<b>GINGER FORCE</b> - 60 softgels	29.95	22.46		
00778	<b>GINKGO BILOBA CERTIFIED EXTRACT™</b> - 120 mg, 365 caps	46.00	34.50		
	Buy 2 bottles, price each	43.50	32.63		
00504	<b>GINKGO EXTRACT (SUPER)</b> - 120 mg, 100 caps	29.00	21.75		
	Buy 4 bottles, price each	26.50	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	19.50	14.63		
	Buy 4 bottles, price each	18.00	13.50		
00345	<b>(L) GLUTAMINE CAPSULES</b> - 500 mg, 100 caps	14.95	11.21		
	Buy 4 bottles, price each	13.50	10.13		
00141	<b>(L)-GLUTAMINE POWDER</b> - 100 grams	19.00	14.25		
	Buy 4 bottles, price each	16.88	12.66		

SUB-TOTAL OF COLUMN 8

NOVEMBER 2012

# 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		
01606	<b>GREEN TEA W/COFFEEGENIC™ GREEN COFFEE EXTRACT (MEGA)</b> 120 veg. caps, low caffeine Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
<b>H</b>					
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		
01433	<b>HOLY BASIL</b> - 60 softgel caps	34.95	26.21		
01434	<b>HOLY BASIL</b> - 120 softgel caps	54.95	41.21		
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	34.00 30.00	25.50 22.50		
00661	<b>HYDRODERM®</b> - 1 oz Buy 2 bottles, price each	79.95 65.33	59.96 49.00		
<b>I</b>					
*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		

**SUB-TOTAL OF COLUMN 9**

No.		Retail Each	Member Each	Qty	Total
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		
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		
<b>J, K</b>					
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		
01224	<b>K w/ADVANCED K2 COMPLEX (SUPER)</b> - 90 softgels Buy 4 bottles, price each	26.00 23.00	19.50 17.25		
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		
<b>L</b>					
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		
01655	<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		
01657	<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		
01654	<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		
01656	<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		
01665	<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		
01667	<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		
01664	<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		

**SUB-TOTAL OF COLUMN 10**



To order online visit: [www.LifeExtension.com](http://www.LifeExtension.com)

# Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01666	<b>LIFE EXTENSION MIX™ POWDER</b> - 14.81 oz w/o copper	\$98.00	\$73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	72.00	54.00		
00263	<b>LIFE FLORA™</b> - 300 mg, 120 caps	20.50	15.38		
	Buy 4 bottles, price each	18.75	14.06		
01377	<b>LIFESHIELD® BREATHE™</b> - 60 veg. caps	34.95	26.21		
01349	<b>LIFESHIELD® CORDYCEPS</b> - 60 veg. caps	34.95	26.21		
01314	<b>LIFESHIELD® IMMUNITY™</b> - 60 veg. caps	39.95	29.96		
01339	<b>LIFESHIELD® REISHI™</b> - 60 veg. caps	34.95	26.21		
01608	<b>LIVER EFFICIENCY FORMULA</b> - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	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	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01013	<b>L-LYSINE</b> - 620 mg, 100 caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
00129	<b>L-LYSINE POWDER</b> - 300 grams	16.00	12.00		
	Buy 4 bottles, price each	13.75	10.31		
01470	<b>LURALEAN® CAPS SPECIAL PROPOLMANNAN</b>	28.00	21.00		
	<b>PARTICLE SIZE</b> - 120 veg. caps				
	Buy 4 bottles, price each	25.00	18.75		
00455	<b>LYCOPENE EXTRACT (MEGA)</b> - 15 mg, 90 softgels	35.00	26.25		
	Buy 4 bottles, price each	30.00	22.50		
<b>M</b>					
01369	<b>MAGNESIUM CAPS</b> - 500 mg, 100 veg. caps	\$10.00	\$7.50		
	Buy 4 bottles, price each	9.00	6.75		
00502	<b>MAGNESIUM CITRATE</b> - 160 mg, 100 caps	9.00	6.75		
	Buy 4 bottles, price each	7.50	5.63		
00704	<b>MAITAKE™ SX-FRACTION</b> - 90 veg. tablets	49.95	37.46		
00547	<b>MELATONIN</b> - 300 mcg, 100 caps	5.75	4.31		
	Buy 4 bottles, price each	5.00	3.75		
01083	<b>MELATONIN</b> - 500 mcg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00329	<b>MELATONIN</b> - 1 mg, 60 caps	5.00	3.75		
	Buy 4 bottles, price each	4.63	3.47		
00330	<b>MELATONIN</b> - 3 mg, 60 caps	8.00	6.00		
	Buy 4 bottles, price each	6.88	5.16		
01086	<b>MELATONIN</b> - 3 mg, 60 time-release veg. caps	10.50	7.88		
	Buy 4 bottles, price each	9.38	7.04		
00331	<b>MELATONIN</b> - 10 mg, 60 caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
00332	<b>MELATONIN</b> - 3 mg, 60 lozenges	8.00	6.00		
	Buy 4 bottles, price each	6.88	5.16		
01087	<b>MELATONIN TIME RELEASE</b> - 300 mcg, 100 veg. caps	6.25	4.69		
	Buy 4 bottles, price each	5.63	4.22		
01088	<b>MELATONIN TIME RELEASE</b> - 750 mcg, 60 veg. caps	5.75	4.31		
	Buy 4 bottles, price each	5.00	3.75		
01009	<b>MEMORY UPGRADE™</b> - 600 grams powder	26.95	20.21		
01536	<b>METHYLCOBALAMIN</b> - 1 mg, 60 lozenges (vanilla)	9.95	7.46		
	Buy 4 bottles, price each	8.00	6.00		
01537	<b>METHYLCOBALAMIN</b> - 5 mg, 60 lozenges (vanilla)	32.00	24.00		
	Buy 4 bottles, price each	25.00	18.75		
	Buy 10 bottles, price each	23.00	17.25		

**SUB-TOTAL OF COLUMN 11**

No.		Retail Each	Member Each	Qty	Total
00709	<b>MIGRA-EEZE™ (BUTTERBUR)</b> - 60 softgels	\$29.50	\$22.13		
	Buy 4 bottles, price each	26.33	19.75		
01522	<b>MILK THISTLE (CERTIFIED EUROPEAN)</b> - 750 mg, 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
01517	<b>MILK THISTLE (CERTIFIED EUROPEAN)</b> - 120 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		
00623	<b>MINERAL FORMULA FOR MEN</b> - 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
	Buy 12 bottles, price each	10.83	8.13		
00624	<b>MINERAL FORMULA FOR WOMEN</b> - 100 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
	Buy 12 bottles, price each	10.83	8.13		
01698	<b>MIRAFORTE w/STANDARDIZED LIGNANS (SUPER)</b> - 120 caps	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
01569	<b>MITOCHONDRIAL BASICS w/BIOPQQ™</b> - 30 caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
01568	<b>MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ™</b> - 120 caps	94.00	70.50		
	Buy 4 bottles, price each	84.00	63.00		
00803	<b>MIST ORAL III w/COQ10</b> - 2 fl oz	28.00	21.00		
	Buy 4 bottles, price each	25.33	19.00		
00065	<b>MK-7</b> - 90 mcg, 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01279	<b>MOUTHWASH w/POMEGRANATE</b> - 16 oz	18.50	13.88		
	Buy 4 bottles, price each	17.00	12.75		
00451	<b>MSM (METHYLSULFONYLMETHANE)</b> - 1000 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	11.95	8.96		
<b>N</b>					
00215	<b>N-ACETYL-L-CYSTEINE</b> - 600 mg, 60 caps	\$14.00	\$10.50		
	Buy 4 bottles, price each	13.50	10.13		
00066	<b>NATTOKINASE</b> - 60 softgels	25.50	19.13		
00891	<b>NATURAL APPETITE CONTROL</b> - 90 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.20	18.90		
00984	<b>NATURAL BP MANAGEMENT</b> - 60 tablets	42.00	31.50		
	Buy 4 bottles, price each	37.80	28.35		
00913	<b>NATURAL ESOPHAGUARD</b> - 10 softgels	19.95	14.96		
	Buy 2 boxes, price each	19.00	14.25		
00712	<b>NATURAL ESTROGEN w/POMEGRANATE EXTRACT</b> - 60 caplets	38.00	28.50		
	Buy 4 bottles, price each	33.00	24.75		
01221	<b>NATURAL FEMALE SUPPORT</b> - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01471	<b>NATURAL GLUCOSE ABSORPTION CONTROL</b> - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
00698	<b>NATURAL RELIEF 1222™</b> - 2 oz	28.00	21.00		
	Buy 4 tubes, price each	25.00	18.75		
01627	<b>NATURAL SEX FOR WOMEN ® (ADVANCED)</b> - 60 veg. caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01626	<b>NATURAL SEX FOR WOMEN ® 50+ (ADVANCED)</b> - 90 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	45.33	34.00		
01084	<b>NATURAL SLEEP®</b> - 3 mg, 60 veg. caps	12.99	9.74		
	Buy 4 bottles, price each	10.00	7.50		

**SUB-TOTAL OF COLUMN 12**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

NOVEMBER 2012

# 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</b> CONTINUED					
01507	<b>NATURAL SLEEP® (ENHANCED) W/ MELATONIN</b> - 30 caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
01511	<b>NATURAL SLEEP® (ENHANCED) W/O MELATONIN</b> - 30 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01085	<b>NATURAL SLEEP MELATONIN®</b> - 5 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00987	<b>NATURAL STRESS RELIEF</b> - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01603	<b>NEURO-MAG™ MAGNESIUM L-THREONATE</b> - 90 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
01602	<b>NEURO-MAG™ L-THREONATE W/CALCIUM &amp; VITAMIN D</b> 205 grams - Lemon flavor	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00373	<b>NO-FLUSH NIACIN</b> - 800 mg, 100 caps	19.00	14.25		
	Buy 4 bottles, price each	17.00	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	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
01483	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 60 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01482	<b>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 120 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01484	<b>OMEGA 3 EPA/DHA W/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER)</b> - 120 enteric coated softgels	34.00	25.50		
	Buy 4 bottles, price each	31.00	23.25		
	Buy 10 bottles, price each	28.00	21.00		
01619	<b>OMEGA 3 EPA/DHA W/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL)</b>	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01632	<b>OMEGA-3 LEMON WHIRL</b> - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01633	<b>OMEGA-3 TROPICAL WHIRL</b> - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01601	<b>ONE-PER-DAY</b> - 60 veg. tablets	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01328	<b>ONLY TRACE MINERALS</b> - 90 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
00915	<b>OPTIZING®</b> - 30 mg, 90 veg. caps	5.95	4.46		
	Buy 4 bottles, price each	5.00	3.75		
01348	<b>OREGANOFORCE™</b> - 30 softgels	34.95	26.21		
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	\$15.42	\$11.57		
	Buy 4 bottles, price each	13.59	10.19		
00073	<b>PANCREATIN</b> - 500 mg, 50 caps	13.22	9.92		
	Buy 4 bottles, price each	12.12	9.09		
01323	<b>PEAK ATP® WITH GLYCOARN®</b> - 60 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	56.00	42.00		

**SUB-TOTAL OF COLUMN 13**

NOVEMBER 2012

No.		Retail Each	Member Each	Qty	Total
00342	<b>PECTA SOL-C® MODIFIED CITRUS PECTIN</b> - 454 grams powder	\$99.95	\$74.96		
	Buy 4 jars, price each	95.70	71.78		
01080	<b>PECTA SOL-C® MODIFIED CITRUS PECTIN</b> - 270 veg. caps	69.95	52.46		
00673	<b>PGX™ SOLUBLE FIBER BLEND (WELLBETX®)</b> -180 caps	34.95	26.21		
00865	<b>PHARMAGABA™</b> - 60 chewable tablets	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
00368	<b>PHOSPHATIDYL SERINE CAPS</b> - 100 mg, 100 caps	54.00	40.50		
	Buy 4 bottles, price each	48.00	36.00		
01390	<b>PHOSPHOMEGA®</b> - 60 softgels	39.95	26.96		
00561	<b>POLICOSANOL</b> - 10 mg, 60 tablets	24.00	18.00		
	Buy 6 bottles, price each	18.00	13.50		
01423	<b>POMEGRANATE™ (FULL-SPECTRUM)</b> - 30 softgels	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
00956	<b>POMEGRANATE EXTRACT</b> - 30 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.55	13.16		
00957	<b>POMEGRANATE JUICE CONCENTRATE</b> - 16 oz. liquid	25.95	19.46		
	Buy 4 bottles, price each	24.00	18.00		
00577	<b>POTASSIUM IODIDE</b> - 1 box, 14 tablets	6.95	5.21		
	Buy 4 boxes, price each	5.25	3.94		
01500	<b>PQQ CAPS W/BIOPQQ™</b> - 10 mg, 30 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01647	<b>PQQ CAPS W/BIOPQQ™</b> - 20 mg, 30 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00302	<b>PREGNENOLONE</b> - 50 mg, 100 caps	24.00	18.00		
	Buy 4 bottles, price each	19.00	14.25		
00700	<b>PREGNENOLONE</b> - 100 mg, 100 caps	26.00	19.50		
	Buy 4 bottles, price each	22.50	16.88		
***01373	<b>PRELOX® NATURAL SEX FOR MEN®</b> - 60 tablets	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		
00571	<b>PRIMAL DEFENSE™</b> - 90 caplets	49.95	37.46		
	Buy 4 bottles, price each	48.50	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	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01695	<b>PROSTATE FORMULA W/APRESFLEX™ STAND. LIGNANS (ULTRA NAT)</b> 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
01642	<b>PROTEIN - VANILLA</b> - (Enhanced Life Extension) -1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01643	<b>PROTEIN - CHOCOLATE</b> - (Enhanced Life Extension) - 1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01644	<b>PROTEIN - NATURAL</b> - (Enhanced Life Extension) -1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01645	<b>PROTEIN - BERRY</b> - (Enhanced Life Extension) -1 lb. powder	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01508	<b>PTEROPURE™</b> - 50 mg Pterostilbene 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	30.00	22.50		

**SUB-TOTAL OF COLUMN 14**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS



To order online visit: [www.LifeExtension.com](http://www.LifeExtension.com)

# Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
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>PHYCNOGENOL® 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		
<b>Q, R</b>					
01309	<b>QUERCETIN (OPTIMIZED)</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	\$18.00 17.00	\$13.50 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 Buy 4 bottles, price each	19.95 18.67	14.96 14.00		
01448	<b>REJUVENEX® BODY LOTION</b> - 6 oz Buy 4 tubes, price each Buy 8 tubes, price each	24.00 19.80 17.00	18.00 14.85 12.75		
00918	<b>REJUVENEX® FACTOR</b> - 1.7 oz airless pump Buy 2 bottles, price each Buy 4 bottles, price each Buy 8 bottles, price each	65.00 60.00 55.00 49.91	48.75 45.00 41.25 37.43		
01621	<b>REJUVENEX® FACTOR FIRMING SERUM</b> - 1.7 oz Buy 2 bottles, price each Buy 4 bottles, price each Buy 8 bottles, price each	65.00 60.00 55.00 49.91	48.75 45.00 41.25 37.43		
01220	<b>REJUVENEX® (ULTRA)</b> - 2 oz Buy 2 jars, price each Buy 4 jars, price each Buy 8 jars, price each	52.00 48.00 44.00 39.93	39.00 36.00 33.00 29.95		
00676	<b>REJUVENIGHT® (ULTRA)</b> - 2 oz Buy 4 jars, price each	39.95 36.00	29.96 27.00		
00706	<b>REJUVENIGHT® w/PROGESTERONE (ULTRA)</b> - 2 oz Buy 4 jars, price each	42.00 38.00	31.50 28.50		
01413	<b>RESVERATROL W/PTEROSTILBENE</b> - 20 mg, 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01410	<b>RESVERATROL W/PTEROSTILBENE</b> - 100 mg, 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01430	<b>RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED)</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	46.00 41.33	34.50 31.00		
00889	<b>RHODIOLA EXTRACT</b> - 250 mg, 60 veg. caps Buy 4 bottles, price each	11.75 10.58	8.81 7.94		
00972	<b>(D) RIBOSE POWDER</b> - 150 grams Buy 4 jars, price each	27.50 24.75	20.63 18.56		
01473	<b>(D) RIBOSE TABLETS</b> - 100 veg. tabs Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
01609	<b>RICH REWARDS BREAKFAST GROUND COFFEE</b> - 12 oz. bag	13.00	9.75		
01610	<b>RICH REWARDS DECAFFEINATED ROAST GROUND COFFEE</b> - 12 oz. bag	14.00	10.50		
01208	<b>R-LIPOIC ACID (SUPER)</b> - 300 mg, 60 veg. caps Buy 4 bottles, price each	49.00 45.00	36.75 33.75		

**SUB-TOTAL OF COLUMN 15**

No.		Retail Each	Member Each	Qty	Total
00070	<b>RNA CAPSULES</b> - 500 mg, 100 caps Buy 4 bottles, price each	\$17.95 16.16	\$13.46 12.12		
00917	<b>ROSMARINIC ACID EXTRACT</b> - 60 veg. caps Buy 4 bottles, price each	59.00 53.00	44.25 39.75		
<b>S</b>					
01067	<b>SACCHAROMYCES BOULARDII + MOS</b> - 90 veg. caps	\$21.95	\$16.46		
01432	<b>SAFFRON w/SATIEREAL (OPTIMIZED)</b> - 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 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 Buy 8 boxes, price each	16.00 14.00	12.00 10.50		
00453	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00557	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each	28.00 24.00	21.00 18.00		
01055	<b>SAME (S-ADENOSYL-METHIONINE)</b> - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01543	<b>SEA-IODINE™</b> - 1000 mcg, 60 caps Buy 4 bottles, price each	8.00 7.20	6.00 5.40		
00046	<b>SELENIUM</b> - 2 oz dropper bottle Buy 4 bottles, price each	9.95 9.45	7.46 7.09		
00567	<b>SE-METHYL L-SELENOCYSTEINE</b> - 200 mcg, 100 caps Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
00318	<b>SERRAFLAZYME</b> - 100 tablets Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00011	<b>SHAMPOO</b> - 16 fl oz Buy 4 bottles, price each	6.00 4.75	4.50 3.56		
00284	<b>SHARK LIVER OIL (NORWEGIAN)</b> - 1000 mg, 30 softgels Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00184	<b>SILYMARIN</b> - 100 mg, 50 caps Buy 4 bottles, price each	9.25 8.25	6.94 6.19		
01502	<b>SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT™</b> - 30 liquid caps Buy 4 bottles, price each	25.00 23.00	18.75 17.25		
00961	<b>SODZYME® w/GLISODIN® AND WOLFBERRY</b> - 90 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
00657	<b>SOLARSHIELD SUNGLASSES</b> - 1 pair smoke color Buy 2 pairs, price each	12.99 11.50	9.74 8.63		
01097	<b>SOY EXTRACT (ULTRA)</b> - 150 veg. caps Buy 4 bottles, price each	87.00 78.00	65.25 58.50		
00286	<b>SOY PROTEIN CONCENTRATE</b> - 16 oz of powder Buy 4 jars, price each	12.00 10.63	9.00 7.97		
01099	<b>STABILUM® 200</b> - 30 caps	30.00	22.50		
00432	<b>STEVIA EXTRACT</b> - 100 packets, 1 gram each Buy 4 boxes, price each	9.95 9.00	7.46 6.75		
01396	<b>ST. JOHN'S WORT EXTRACT</b> - 300 mg, 60 veg. caps Buy 4 bottles, price each	10.98 10.00	8.24 7.50		
00327	<b>ST. JOHN'S WORT EXTRACT (PLANETARY)</b> - 600 mg, 60 tablets Buy 4 bottles, price each	16.75 13.85	12.56 10.39		
01476	<b>STRONTIUM</b> - 750 mg, 90 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00747	<b>SUNGLASSES (OVERXCAST POLARIZED)</b> - gray color, large Buy 2 pairs, price each	27.00 21.00	20.25 15.75		

**SUB-TOTAL OF COLUMN 16**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

NOVEMBER 2012

# 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	\$27.00	\$20.25		
	Buy 2 pairs, price each	21.00	15.75		
00758	<b>SUPER ABSORBABLE SOY ISOFLAVONES</b> - 60 caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	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	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
	Buy 12 bottles, price each	24.00	18.00		
01407	<b>SUPER SAW PALMETTO W/BETA-SITOSTEROL</b> - 30 softgels	15.00	11.25		
	Buy 12 bottles, price each	12.00	9.00		
00578	<b>SUPER SELENIUM COMPLEX</b> - 200 mcg, 100 caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
	Buy 12 bottles, price each	9.00	6.75		
00674	<b>SYTRINOL™</b> - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	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	8.95	6.71		
	Buy 4 bottles, price each	8.00	6.00		
00133	<b>TAURINE POWDER</b> - 300 grams	20.00	15.00		
	Buy 4 bottles, price each	16.88	12.66		
01304	<b>THEAFLAVIN STANDARDIZED EXTRACT</b> - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00555	<b>(L) THEANINE</b> - 100 mg, 60 caps	24.00	18.00		
	Buy 4 bottles, price each	20.50	15.38		
***01038	<b>THERALAC PROBIOTICS</b> - 30 caps	47.95	35.96		
00224	<b>THYMIC IMMUNE FACTORS</b> - 100 caps	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
00668	<b>THYROID FORMULA™ (METABOLIC ADVANTAGE)</b> - 100 caps	21.95	16.46		
00349	<b>TMG POWDER</b> - 50 grams	14.00	10.50		
	Buy 4 bottles, price each	11.00	8.25		
00359	<b>TMG</b> - 500 mg, 180 tablets	18.00	13.50		
	Buy 4 bottles, price each	15.50	11.63		
00781	<b>TOCOTRIENOLS WITH SESAME LIGNANS</b> - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	36.00	27.00		
01400	<b>TOCOTRIENOLS (SUPER-ABSORBABLE)</b> - 60 softgels	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
01278	<b>TOOTHPASTE</b> - 4 oz (Mint)	9.50	7.13		
	Buy 4 tubes, price each	8.67	6.50		
01274	<b>TOTAL SUN PROTECTION CREAM W/BETA GLUCAN</b> - 4 oz	28.00	21.00		
	Buy 4 tubes, price each	25.20	18.90		
01468	<b>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT</b> - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01469	<b>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL</b> -60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	29.60	22.20		
01386	<b>TRUFIBER®</b> - 180 grams	32.95	24.71		
01389	<b>TRUFLOA PROBIOTICS &amp; ENZYMES</b> - 32 veg. caps	42.95	32.21		
01616	<b>TWO-PER-DAY</b> - 60 veg. tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01615	<b>TWO-PER-DAY</b> - 120 veg. tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		

**SUB-TOTAL OF COLUMN 17**

No.		Retail Each	Member Each	Qty	Total
01614	<b>TWO-PER-DAY</b> - 120 caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	<b>L-TYROSINE</b> - 500 mg, 100 tablets	12.98	9.74		
	Buy 4 bottles, price each	11.81	8.86		
<b>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	\$15.00	\$11.25		
	Buy 4 bottles, price each	12.50	9.38		
00408	<b>VENOTONE</b> - 60 caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01327	<b>VINPOCETINE</b> - 10 mg, 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
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	18.73	14.05		
	Buy 4 bottles, price each	17.00	12.75		
00093	<b>VITAMIN B2 CAPS</b> - 100 mg, 100 caps	14.32	10.74		
	Buy 4 bottles, price each	13.00	9.75		
00096	<b>VITAMIN B3 NIACIN</b> - 1000 mg, 100 caps	12.75	9.56		
	Buy 4 bottles, price each	12.00	9.00		
00372	<b>VITAMIN B3 NIACIN</b> - 500 mg, 100 caps	7.65	5.74		
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00098	<b>VITAMIN B5</b> - 500 mg, 100 caps (Pantothenic Acid)	10.50	7.88		
	Buy 4 bottles, price each	9.38	7.04		
00556	<b>VITAMIN B6</b> - 250 mg, 100 caps	12.50	9.38		
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00927	<b>VITAMIN C w/ DIHYDROQUERCETIN</b> - 1000 mg, 250 tablets	25.50	19.13		
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00084	<b>VITAMIN C (BUFFERED) POWDER</b> - 454.6 grams	23.95	17.96		
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00864	<b>VITAMIN D3</b> - 2000 IU, 1 fl oz	28.00	21.00		
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01572	<b>VITAMINS D AND K w/SEA-IODINE™</b> - 60 caps	24.00	18.00		
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00063	<b>VITAMIN E (PURE NATURAL)</b> - 400 IU, 100 caps	18.75	14.06		
	Buy 4 bottles, price each	17.25	12.94		
	Buy 10 bottles, price each	15.00	11.25		
01225	<b>VITAMIN K2 (LOW-DOSE)</b> - 45 mcg, 90 softgels	\$18.00	\$13.50		
	Buy 4 bottles, price each	16.00	12.00		

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01685	ZEAXANTHIN W/LUTEIN & MESO-ZEAXANTHIN AND C3G (SUPER) - 60 softgels	\$22.00	\$16.50		
	Buy 4 bottles, price each	19.80	14.85		
00061	ZINC LOZENGES - 75 lozenges	9.50	7.13		
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01051	ZYFLAMEND® WHOLE BODY - 120 softgels	60.95	45.71		
01029	ZYFLAMEND® TINY CAPS® - 180 softgels	31.95	23.96		
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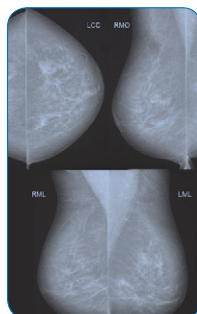
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# LifeExtension® Magazine



### 7 METFORMIN MAKES HEADLINE NEWS

It is illegal for manufacturers to promote **metformin** to healthy people for the purposes of reducing **cancer** risk; yet hundreds of scientific studies document its efficacy. The law that results in this kind of needless suffering and death must be repealed!



### 30 INNOVATIVE LASER THERAPY FOR BREAST CANCER

In a clinical trial supported by **Life Extension®**, scientists are using **laser-assisted immune therapy** to destroy breast tumors and prevent recurrences.



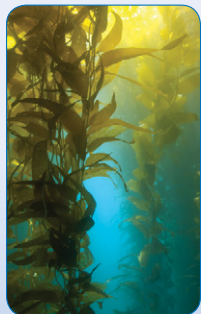
### 42 DOROTHY HAMILL: AN INSPIRATION ON AND OFF THE ICE

Diagnosed with breast cancer, Olympic Gold Medal winner **Dorothy Hamill** has returned to vibrant health through diet, exercise, and other lifestyle changes.



### 50 BREAST CANCER PREVENTION

Up to **50%** of breast cancer cases are preventable and the science of **epigenetics** uses nutrients and certain drugs to *regulate* genes to stop cancer cells from replicating out of control.



### 66 DHA: AN ESSENTIAL BRAIN FOOD

For those wishing to boost their **DHA** levels to avoid cognitive degeneration, NASA scientists have discovered a rich source of vegetarian DHA from marine algae.



### 78 BIOFLAVONOIDS CREATE YOUTHFUL SKIN TONE

Three **flavonoids**—**quercetin**, **hesperidin**, and **rutin** nourish and heal skin cells through multiple pathways to help minimize age spots, wrinkles, and spider veins.