Life Extension

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September 2014

How to Turn 8 Pennies Into \$600

Remarkable
Longevity Benefits
of Tart Cherries

Newly Discovered Effects of

Quercetin

Calorie
Restriction
Benefits
Confirmed





PLUS-

Metformin Stabilizes Metastatic Prostate Cancer Green Tea Shown To Reduce Pancreatic Cancer Risk Magnesium Lowers C-Reactive Protein in Diabetics

ONE OF THIS YEAR'S TOP SELLERS!



Ceramides are essential for preserving healthy-looking skin.^{1,2} That's why they're included in so many anti-aging face creams.

Your body's production of **ceramides** declines with age.3 That's bad news, since ceramides make up 35-40% of the binding matrix that maintains moisture balance and protects the skin's surface.⁴ It's therefore critical that ceramides lost to aging are replaced.

Restore Ceramides Naturally from Within!

The **ceramides** that young skin naturally produces to retain its supple appearance are identical to those present in wheat!

Wheat-derived oils have been used topically for centuries as a natural moisturizer. But you can't get enough ceramides from topically applied wheat oil to have a long-term impact on your skin's appearance. And they don't appear in sufficient concentration in your diet.

That's why **Life Extension**® brought together these skin-nourishing oils in a concentrated oral formula called Skin Restoring Phytoceramides with Lipowheat®.

Lipowheat[®] is a proprietary *ceramide blend* that offers nutritional support for aging skin to complement the topical products you may already be using.

The Moisturizing Pill the Japanese **Have Enjoyed for a Decade!**

Lipowheat® ceramides have been available to Japanese women as a functional food since 2000.5 The hydrating action of **Lipowheat® ceramides** have proven effective in clinical trials.

Aging Americans can now offset the visible impact of the gradual decline in their ability to produce enough ceramides by using **Skin Restoring** Phytoceramides with Lipowheat®.

For most of 2014, demand for **Skin Restoring Ceramides** has far outstripped supply, causing us to back order it for most customers. We are now fully stocked and will ship orders usually within one business day of receipt.

One bottle containing 30 350 mg vegetarian liquid capsules of Skin Restoring Phytoceramides with **Lipowheat**® retails for \$25. If a member buys four bottles, the price is reduced to \$17.25.

Contains wheat.

Lipowheat® is a registered trademark of LAVIPHARM Group of Companies.

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To order Skin Restoring Phytoceramides with Lipowheat® call 1-800-544-4440 or visit www.LifeExtension.com

LifeExtension®

VOLUME TWENTY / NUMBER NINE September 2014

REPORTS

24 REDUCE ABSORPTION OF DANGEROUS DIETARY FATS

Alpha-cyclodextrin, a patented natural fiber, can absorb up to 500 calories a day of dietary fat before it gets absorbed into the bloodstream. Compared to regular fiber, alpha-cyclodextrin selectively eliminates **nine times** more pro-inflammatory fats, while leaving healthy omega-3s untouched.

36 NEW STUDY CONFIRMS CALORIE RESTRICTION EXTENDS LIFE SPAN

A recent study confirms that calorie restriction reduces age-related and all-cause mortality in primates. The calorie-restricted group was almost three times less likely to die, suggesting effective food restriction might be as simple as keeping calorie intake moderate and choosing nutrient-dense foods.

44 TART CHERRIES: A WIDE SPECTRUM OF PROTECTIVE ANTHOCYANINS

Rich in anthocyanins, tart cherry targets a wide spectrum of degenerative diseases at their inflammatory root. For those suffering from gout, a form of arthritis, tart cherries lower both uric acid and C-reactive protein.

56 QUERCETIN FOR CARDIAC PROTECTION

People with high intakes of quercetin have significantly lower risk for cardiovascular diseases. Quercetin provides multimodal cardiac protection such as triggering reverse cholesterol transport and improving after-meal endothelial function by 31.4%.

66 NEWLY DISCOVERED BENEFITS OF VITAMIN K

New research confirms that vitamin K can slash the risk of arterial calcification, coronary heart disease, cancer, type II diabetes, and metabolic syndrome. Most compelling is a study showing that those with the *highest* intakes of vitamin K are less likely to die from any cause.



HOW TO TURN EIGHT PENNIES INTO \$600

Today's healthcare cost crisis is caused by a regulatory system that inflates medical prices beyond affordability. Collusion amongst pharmaceutical companies block competitors from the marketplace, keeping drug prices artificially high and preventing medical science from progressing. Here we report on a generic drug whose active ingredient costs 8 cents but sells to pharmacies for \$600!





17 IN THE NEWS

Green tea reduces pancreatic cancer risk; metformin blocks progression of prostate cancer; zinc reduces mortality risk in malnourished children: intense exercise linked to stroke risk; black cumin seed oil boosts semen quality; diabetes increases pancreatic cancer risk; magnesium lowers C-reactive protein; sugar intake linked to high blood pressure; and more.

79 WELLNESS PROFILE

Known for her starring television roles, Patricia Richardson is a strong voice for the National Organization for Rare Disorders, which combines over 200 advocacy groups for about 7,000 diseases. Her father's death prompted her to raise awareness for these diseases, each of which affects about one in 1,500 people.

85 AUTHOR INTERVIEW

In The Complete Mediterranean Diet-Everything You Need to Know to Lose Weight and Lower Your Risk of Heart Disease, author Michael Ozner. MD, explains the Mediterranean diet's role in preventing heart disease and boosting health.

91 BOOK REVIEW

In his gripping book, Doctored Results: The Suppression of Laetrile at Sloan-Kettering Institute for Cancer Research, Ralph W. Moss, PhD, documents one of the biggest medical cover-ups in the world of cancer research.

95 SUPER FOODS

Phytonutrients found in **kale** can prevent damage to cell membranes and DNA. As part of a regular diet, kale can slash the risk of certain cancers, support cardiovascular health, and provide a rich supply of key minerals and vitamins.









LifeExtension®



VOLUME TWENTY / NUMBER NINE September 2014

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Monday-Friday 9 am-8 pm, Saturday 9 am-6 pm, Sunday 11 am-5 pm

PUBLISHER • LE Publications, Inc.

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LIFE EXTENSION (ISSN 1524-198X) Vol. 20, No.9 ©2014 is published monthly except bi-monthly in April by LE Publications, Inc. at 3600 West Commercial Blvd., Fort Lauderdale, FL 33309-3338. LE Publications, Inc. All rights reserved. Published 13 times a year. Subscription rate: \$40 per year in the United States. US \$47 in Canada. US \$60 in other countries. Subscription included as part of Life Extension Foundation membership. Mail subscriptions or address changes to: LE Publications, Inc., P.O. Box 407198, Fort Lauderdale, FL 33340-7198, USA. Or phone us toll-free at: 1-800-841-5433. Canada Subscriptions: Publications mail agreement number 40028967. Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill, ON L4B4R6. You will be sent your first issue within six weeks after LE Publications, Inc. receives your subscription fee. Periodicals Postage paid at Fort Lauderdale, FL and at additional mailing offices. POSTMASTER: Send address changes to Life Extension, P.O. Box 407198, Ft. Lauderdale, Florida 33340-7198, USA. Printed in USA. Lauderdale, FL and at additional mailing offices. POSIMASI ER: Send address changes to Life Extension, P.O. Box 40/198, Ft. Lauderdale, Florida 33340-7198, USA. Printed in USA. The articles in this magazine are intended for informational purposes only. They are not intended to replace the attention or advice of a physician or other health-care professional. Anyone who wishes to embark on any dietary, drug, exercise, or other lifestyle change intended to prevent or treat a specific disease or condition should first consult with and seek clearance from a qualified health-care professional. LEGAL NOTICE: Health claims contained in articles and advertisements in this publication have not been approved by the FDA with the exception of FDA approved qualified health claims for calcium, antioxidant vitamins, folic acid and EPA and DHA omega-3 fatty acids, and selenium as noted where applicable. Life Extension* does not endorse any of the businesses or the products and/or services that may appear in advertisements for non-Life Extension branded products or services contained in Life Extension magazine* except to state that they are advertisers who may have paid Life Extension for placement of an advertisement in this publication. Life Extension disclaims any and all responsibilities or warranties as to the accuracy of information contained in advertisements for non-Life Extension branded products or services. For Canadian customers send change of address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7.



Validated in Huge New Study: Vascular Benefits of a **Mediterranean Diet**

A large, rigorous study published in the **New England** Journal of Medicine confirmed the health benefits of those who switch to a **Mediterranean diet** rich in **omega-3 fish oil** as well as protective nutrients called polyphenols found in olive oil, fruits, vegetables, nuts like walnuts, and wine. The study ended early because the benefits were so overwhelming, with startling benefits for vascular health, that it was considered unethical to continue to deprive the control aroup.1

In addition to the health-promoting benefits of vegetables and fruits with their abundance of polyphenol nutrients, the Mediterranean diet group took at least 4 tablespoons of polyphenol-rich extra-virgin olive oil a day.1

Life Extension® Members **Benefited Long Ago**

Starting in **2005**, Life Extension members began taking a supplement (**Super Omega-3**) that provided potent concentrations of **fish oil** and **olive polyphenols** like hydroxytyrosol and oleuropein. This supplement also provided standardized sesame lignans to support the beneficial effect of omega-3 fatty acids in the body.2

Olive oil contains polyphenol nutrients that have demonstrated wide-ranging health benefits.3-5 The recommended twice daily dose of **Super Omega-3** supplies a similar polyphenol content to that found in 4 to 6 tablespoons of olive oil.

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CAUTION: If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

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

Super Omega-3 with Sesame Lignans and Olive Fruit Extract

To ensure the purest, most stable, and easy-to-tolerate fish oil, **Super Omega-3 EPA-DHA** is *molecularly distilled*. It enjoys the highest 5-star rating for purity, quality, and concentration from the renowned *International Fish Oil Standards* program.⁶ The **sesame lignans** not only direct the omega-3s fatty acids toward more effective pathways in the body, but guard the delicate fish oil from oxidation.^{2,7}

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

The daily dose (four regular size softgels) of Super Omega-3 EPA /DHA with Sesame Lignans & Olive Fruit **Extract provides:**

EPA (eicosapentaenoic acid)	1,400 mg
DHA (docosahexaenoic acid)	1,000 mg
Typical DPA (docosapentaenoic acid)	156 mg
Olive Extract (fruit and leaf) [39 mg polyphenols, 10.4 mg hydroxytyrosol/ tyrosol, 8.8 mg verbascoside/oleuropein]	600 mg

Sesame Seed Lignan Extract 20 mg

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LifeExtension°

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John Boik, PhD, is the author of two books on cancer therapy, Cancer and Natural Medicine (1996) and Natural Compounds in Cancer Therapy (2001). He obtained his doctorate at the University of Texas Graduate School of Biomedical Sciences with research at the MD Anderson Cancer Center, focusing on screening models to identify promising new anticancer drugs. He conducted his postdoctoral training at Stanford University Department of Statistics. He is currently president of New Earth BioMed, a nonprofit cancer research corporation that studies mixtures of natural products.

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Stanley W. Jacob, MD, is Gerlinger Distinguished Professor, Department of Surgery, Oregon Health and Science University. He has authored 175 scientific articles and 15 books and holds 3 patents, including the initial patent on the therapeutic implications of dimethyl sulfoxide (DMSO).













Richard Kratz, MD, DSci, is clinical professor of ophthalmology at the University of California, Irvine, and the University of Southern California (Los Angeles). Dr. Kratz pioneered the cataract-removal technique called phacoemulsification and developed intraocular lenses to replace the crystalline lens. He is currently involved in projects relating to glaucoma, cataract extraction, and facilitating eyesight for the totally blind.

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Ralph W. Moss, PhD, is the author of books such as Antioxidants Against Cancer, Cancer Therapy, Questioning Chemotherapy, and The Cancer Industry, as well as the award-winning PBS documentary "The Cancer War." Dr. Moss has independently evaluated the claims of various cancer treatments and currently directs The Moss Reports, an updated library of detailed reports on more than 200 varieties of cancer diagnoses.

Michael D. Ozner, MD, FACC, FAHA, is a boardcertified cardiologist who specializes in cardiovascular disease prevention. He serves as medical director for the Cardiovascular Prevention Institute of South Florida and is a noted national speaker on heart disease prevention. Dr. Ozner is also author of The Great American Heart Hoax and The Miami Mediterranean Diet (2008, Benbella Books). For more information visit www.drozner.com.

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

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+	↓	+
Vitamin C	500 mg	60 mg
Vitamin D3	2,000 IU	500 IU
Vitamin B1	75 mg	1.5 mg
Vitamin B2	50 mg	1.7 mg
Vitamin B6	75 mg	3 mg
Vitamin B12 (as methylcobala	min) 300 mcg	25 mcg
Niacin (as niacinamide)	50 mg	20 mg
Pantothenic acid	100 mg	10 mg
Vitamin E	100 IU (natural)	50 IU (synthetic)
Natural Folate	400 mcg	400 mcg (synthetic)
Zinc	30 mg	11 mg
Selenium	200 mcg	55 mcg
Lutein	5,000 mcg	250 mcg
Lycopene	2,000 mcg	300 mcg
Biotin	300 mcg	30 mcg
Boron	3,000 mcg	150 mcg
Chromium	200 mcg	45 mcg
Molybdenum	100 mcg	45 mcg
Magnesium	100 mg	50 mg
Manganese	2 mg	2.3 mg
lodine	150 mcg	150 mcg
Potassium	25 mg	80 mg
Vitamin A (as beta-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)
Calcium	12 mg	220 mg
Alpha Lipoic Acid	25 mg	(none)
Natural Mixed Tocophero	•	(none)
(providing gamma, delta, alph	na, and beta tocopherols)	

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

The chart to the left reveals how much more <u>potent</u> **Two-Per-Day** is compared to the leading commercial multi-vitamin.

When compared to conventional "one-a-day" products, Life Extension Two-Per-Day contains up to 50 times more potency of specific nutrients.

Commercial supplements often contain the cheapest form of nutrients that fail to provide optimal benefits. For example, the 50 IU of <u>synthetic</u> vitamin E contained in **Centrum®** Silver® Adults 50+ may provide relatively little vitamin E to the bloodstream compared to the 100 IU of <u>natural</u> vitamin E in **Two-Per-Day**.

Two-Per-Day provides the <u>three</u> most effective forms of **selenium** which are sodium selenite, L-selenomethionine, and Se-methyl L-selenocysteine, plus **alpha lipoic acid**.





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- 4 times more Vitamin D
- 8 times more Vitamin C
- 2 times more Vitamin E
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- 4 times more Selenium
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- 12 times more Vitamin B12
- More than <u>twice</u> as much niacin, zinc, and many other nutrients

A bottle containing 120 tablets of **Two-Per-Day Tablets** retails for \$20. If a member buys four bottles, the price is reduced to **\$13.50** per bottle. (Item #01815)

A bottle containing 120 capsules of **Two-Per-Day Capsules** retails for \$22. If a member buys four bottles, the price is reduced to **\$15** per bottle. (Item #01814)

Each bottle of **Two-Per-Day** lasts **60 days**, so members can obtain the benefits of this high-potency formula for as little as **\$6.75 per month**.

To order Life Extension Two-Per-Day Tablets or Two-Per-Day Capsules, call 1-800-544-4440 or visit 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-hydroxy vitamin D measurement. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

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AS WE SEE IT

How To Turn 8 Pennies Into \$600



BY WILLIAM FALOON

This nation's finances are being *crippled* by high medical prices.

Hidden from the debate is the fact that today's **healthcare cost crisis** is largely a <u>façade</u>. The underlying culprit is an antiquated **regulatory** structure that inflates medical costs beyond rational affordability.

The government misleads the public into believing that *generic drugs* are a partial solution to high-priced pharmaceuticals. What few understand is that the **FDA** gets to pick and choose <u>which</u> companies are *allowed* to make certain generics. This favoritism enables *collusive behavior* among drug makers that results in extortionist prices for off-patent medicines.

To document this consumer rip-off, I did some research to uncover the **active-ingredient** <u>cost</u> for a popular generic drug. This price information was not easily obtainable, and I had to jump through some hoops to procure it.

What I discovered is beyond shocking.

If you encounter a **shingles** or **herpes** outbreak, you may be prescribed a topical ointment (*acyclo-vir*) that alleviates pain and slightly shortens disease duration.^{1,2} What may hurt more than the viral outbreak is the **price** of a **30-gram** (about **1-ounce**) tube of acyclovir! American pharmacies are charging close to **\$700** for this off-patent ointment.³ The cost of the **active ingredient** for the <u>entire</u> tube, however, is only **8 cents**!

Don't blame your **pharmacy** for this price gouging. The pharmacy's cost for a **30-gram** tube of acyclovir from the generic maker is around **\$600**—and the pharmacy has its own costly bureaucratic mandates to contend with.

In a **free market**, the price of acyclovir ointment would fall to *under* **\$10**. Today's moronic *regulatory* structure precludes this.

Instead, **pharmaceutical companies** are able to **collude** in ways that deny low-cost competitors access to the marketplace. They do this using their political connections and massive wealth to influence Congress, the FDA, and other parts of government to

erect barriers that protect their cozy price-gouging machine.

Their reward for maintaining the *regulatory* status quo is **billions of dollars** in excess payments from struggling consumers, government programs, and health insurance companies. Drug companies of course spend lots of money on lobbying. They'd hate to see anyone in government attempt to abolish *regulations* that guarantee their virtual monopoly.



AS WE SEE IT

The **federal government** would have you believe that the *only* way to provide affordable healthcare is to **force** each American to **purchase** health insurance or provide **free** medical care to those who can't pay the premiums. Free healthcare is provided by **Medicaid**, **Medicare**, and the **Veteran's Administration**. Most Americans forced to buy **private insurance** receive federal subsidies ultimately paid for by tax dollars.

A more efficient solution would be to remove needless *regulations* that cause the citizenry to pay pricy premiums for health insurance that has *higher* deductibles and co-pays than ever before.

Acyclovir Should Not Be A Prescription Drug

Acyclovir was approved by the FDA in **1981** and sold initially under the trade name **Zovirax**[®]. ⁴ It's far from a miracle drug, but it does provide much appreciated relief from the harsh stinging pain of herpes and shingles outbreaks.

Cold sores on the lips and face are typically caused by **herpes simplex-1**. A similar virus that usually affects the genital areas is called **herpes simplex-2**.⁵ The virus that causes **shingles** is called **herpes zoster** (also known as the **chickenpox** virus). Shingles occurs when one's **immune function** that originally suppressed the chickenpox virus becomes impaired by aging (immunosenescence).⁶

In addition to providing temporary pain relief, the topical application of acyclovir ointment reduces viral shedding (to lower risk of transmitting the virus to others) and slightly shortens the duration of the herpes virus outbreak.⁷⁻⁹



Acyclovir ointment is one of many overpriced prescription drugs that should be sold over-thecounter without any kind of FDA registration requirement. It is not generally associated with serious side effects. 10,11 If a disreputable company made an ineffective product, users would discover this immediately since it would not provide immediate pain relief when applied to skin lesions. It is doubtful that any company would fail to put into the tube the 8 cents worth of active ingredient. A bigger expense is the cost of the tube and the quality-control to ensure that the acyclovir is evenly spread through the ointment. Acyclovir comprises 5% of the finished product. The remainder is filler.3

If acyclovir were sold over the counter, those who encountered a herpes outbreak could purchase it anywhere and obtain some immediate relief. The risk of transmitting the disease to others would be reduced and the disease duration shortened. The cost would quickly plummet from \$700 to under \$10. At some point it would cost less than \$5. Those with recurrent herpes/shingles outbreaks would not need to squander money and time for needless doctor visits merely to obtain a refill for what is now "prescription" acyclovir ointment.

What Prompted Me To Investigate This?

A member asked me why their **CVS pharmacy** charged so much for a tube of **acyclovir** the size of a small tube of toothpaste. Their **co-pay** was **\$52**, while their insurance company got stuck with a tab of around **\$648**.

At first I thought this must have been an error as I knew acyclovir had been around for decades. It's no longer even the best treatment for cold sore outbreaks since newer topical drugs (like **Denavir**®) purportedly work better.¹²

I had to make quite a few calls and send many emails to get makers of the active **acyclovir** ingredient to disclose the actual cost. It seemed obvious to me they did not want to reveal this pricing information. In fact, **8 cents** a tube for the active ingredient was the *highest* price I found. Other manufacturers of acyclovir quoted <u>less</u> money.

Herpes has been a pandemic disease dating back to ancient times.¹³ Worldwide sales of acyclovir are gargantuan.^{14,15} It sells for less in countries that don't have the onerous *regulatory* strangleholds that exist in the United States.

What's obscenely absurd is when politicians and bureaucrats pretend that drug *regulations*

"protect" consumers. Reality is these regulations enable pharmaceutical companies to collude and financially exploit the citizenry by selling drugs at exploitive prices.

New Hepatitis C Drug Costs \$1,000 Per Pill!

Hepatitis C is a virus that primarily attacks the liver. Over 3 million Americans are infected with hepatitis C.¹⁶ Many don't find out they're infected until liver failure or primary liver cancer is diagnosed.¹⁶

There is now a good reason for everyone to have their blood tested for **hepatitis C.** A new drug called **Sovaldi®** has been shown to cure **90%** of hepatitis C patients with relatively few side effects. ^{17,18}

If Sovaldi® works nearly as well in the real-world setting (as opposed to tightly controlled clinical trials), it represents a medical breakthrough. Up until now, curing hepatitis C has been challenging, involving drug regimens with harsh side effects that often did not work.

A typical course of treatment for Sovaldi® alone will cost \$84,000, plus physician and necessary companion drug costs. 19 Some people will need two courses of treatment, so their total price tag will be around \$200,000.

Harsh criticism has been lodged against the maker of Sovaldi® for charging such high prices. Conservative estimates of the actual manufacturing costs of the drug for a 12-week treatment cycle are under \$160. Yet patients and/or their insurance provider will have to pay \$84,000—a staggering 525-fold markup over the cost to produce the drug!¹⁹

Said differently, a pill that costs under \$2 to make will sell

to consumers for \$1,000 per pill.¹⁹ These estimates of less than \$2 **per pill** to make with a sales price of \$1,000 **per pill** leads to a gross profit margin of 49,000% for the formulation.

Since virtually no one can afford these outlandish prices, the federal government is **forcing** Americans to pay via their health insurance premiums, co-pays, high deductibles, and Medicare contributions. Lowincome individuals will be covered by Medicaid and similar programs paid for by the **taxes** collected by federal and state governments. What this means is that <u>all</u> of us are paying these rip-off drug prices in one way or another.

How To Use Sovaldi®

The dose of Sovaldi® is one **400 mg** tablet taken once a day. For hepatitis C **genotype 2** or **3**, the drug *ribavirin* <u>must</u> be taken with it

For hepatitis genotype **1** or **4**, the required dose is the same **400** mg/day of Sovaldi® plus *ribavirin* and *peginterferon alfa*.²⁰

The maker of Sovaldi® justifies its \$1,000-per-pill cost as a fair price for the value it brings to the healthcare system and hepatitis C patients.¹⁹ This argument can be supported by the high costs of caring for end-stage hepatitis C patients using less effective treatments. The bottom line, however, is that this nation is being rendered insolvent because of these kinds of drug prices. The reason they are so high-priced is the **over**regulation that makes getting approval for a drug like Sovaldi® the equivalent to winning a lottery, and who wouldn't want to cash in their winning lottery ticket?

Even when development costs for Sovaldi® are factored in, experts argue that this price is still exploitive. They point to the fact that once the first **150,000** patients are treated, development costs of Sovaldi® will have been covered. It is expected that Sovaldi® will be quickly used to treat about **2 million** American hepatitis C patients.¹⁹

As we at **Life Extension** have long argued, if it were not for the burdensome regulations obstructing medical innovation, we might have already had several low-cost cures for hepatitis C. With the *collusive* behavior demonstrated by pharmaceutical companies, Sovaldi® prices are likely to remain exorbitant even when other new hepatitis C drugs come to market as expected.



Our Battle To Get Ribavirin Approved

Hepatitis C killed tens of thousands of Americans whose lives could have been spared if not for the **FDA**'s prior political bias against the drug *ribavirin*.

We at Life Extension recognized the efficacy of ribavirin in 1983 and fought a monumental battle to force the **FDA** to approve it by 1998.21 Even then, the FDA erected hurdles that precluded many hepatitis C patients from accessing it.

Ribavirin is a broad-spectrum antiviral drug that has been shown to significantly suppress hepatitis C infection when combined with interferon-alpha. 22-24 After the FDA approved ribavirin, they required hepatitis C patients to first fail a grueling six-month regimen of interferon therapy before they were allowed to try combination interferon-ribavirin. 22,25

The hepatitis C virus inflicts massive damage to liver cells that often leads to cirrhosis and primary liver cancer.26-29 It's the leading reason why 17,000 Americans are awaiting liver transplants today—and no one should think a liver transplant is easy.³⁰

It is crucial for those infected with the hepatitis C virus to eliminate the virus from their bodies before it causes irreversible liver damage. The scientific literature strongly supported the use of ribavirin and interferon as the primary treatment for most hepatitis C infections. 22-24,31 The FDA disregarded these studies because they despised the company that made ribavirin. The company's sin was to "publicize" favorable results from the ribavirin clinical trials. The FDA hates when companies promote a drug before approval because it puts pressure on the FDA to approve it sooner. The FDA would prefer to take their bureaucratic time in approving a new drug rather than capitulate to the pressure of dving Americans who might be cured by the yet-tobe-approved therapy.

The FDA's political suppression of *ribavirin* provides a real world example of what's wrong with today's medical regulatory system. The clinical data consistently showed that when ribavirin plus interferon-alpha were combined during treatment, it resulted in complete eradication of the hepatitis C virus 50 to 100% more often than with interferon alone.32-35

the maker of ribavirin rather than save human lives.

Example Of How **Medical Progress Occurs**

The FDA preferred to punish

Life Extension's discovery of ribavirin's multi-benefits was somewhat serendipitous.

Scientists supported by Life Extension faced a viral epidemic in their animal colony. They went to Mexico in 1983 to purchase ribavirin, hoping it would save their research project. The ribavirin cured the animals. When the scientists contracted viral infections themselves, the ribavirin cured the scientists.²¹ So Life Extension knew ribavirin was effective from studies that had been published in the scientific literature, by the fact it had been approved by drug regulators in most other countries, and because it worked on animals and humans infected with a wide array of viruses.36-40

Ribavirin by itself is not a cure for hepatitis C. It has to be combined with the FDA-approved drug interferon-alpha to achieve viral eradication.41-45 Many hepatitis C patients do achieve viral eradication with interferon alone, but it is a grueling therapy.46-48

So first there was interferonalpha that cured some hepatitis C patients. 49-50 In those it failed to cure, it still reduced future risk of liver cancer.51-55 When ribavirin was added to interferon-alpha, eradication rates doubled, according to some research.33,35 This was a major advance, but the FDA still required hepatitis C patients to undergo six-month treatment using interferon, which inflicts horrific side effects.

With the approval of Sovaldi®, 90% of hepatitis C patients will be



The Shocking Truth Behind Prescription Drug Prices

Do you ever wonder how much it costs a drug company to obtain the active ingredient in a prescription medication? Back in 2002. Life Extension did a search of chemical synthesizers that supply the active ingredients found in drugs approved by the FDA. The chart below shows the active ingredient cost and the price consumers paid for these drugs in 2002 and 2014. This chart was blown up and presented in the House of Representatives to demonstrate how Americans could save money if they could import drugs from other countries where they sell for less. As a stark example of how much influence pharmaceutical companies exert over our federal government, it is still technically illegal for Americans to import lower-cost medications from other countries. Note how prescription drug retail prices have exploded upwards over the past 12 years, yet the cost of the active ingredients is likely to have come down. Most of these drugs now sell as lower cost generics, but note how high the cost of the name brand has skyrocketed upwards. As we described in the beginning of the article with the drug acyclovir, generic availability does not always guarantee substantial price savings for consumers.

	WHAT DE	RUGS REALLY C	OST	
Brand Name	Consumer Price In 2002 (For 100 tabs/caps)	Cost of Generic Active Ingredient (For 100 tabs/caps)	Percent Markup	Consumer Price Today (2014) (For 100 tabs/caps)
Celebrex 100 mg	\$130.27	\$0.60	21,712%	\$453.10
Claritin 10 mg	\$215.17	\$0.71	30,306%	\$90.40
Keflex 250 mg	\$157.39	\$1.88	8,372%	N/A
Lipitor 20 mg	\$272.37	\$5.80	4,696%	\$832.09
Norvasc 10 mg	\$188.29	\$0.14	134,493%	\$489.71
Paxil 20 mg	\$220.27	\$7.60	2,898%	\$496.95
Prevacid 30 mg	\$344.77	\$1.01	34,136%	\$965.73
Prilosec 20 mg	\$360.97	\$0.52	69,417%	N/A
Prozac 20 mg	\$247.47	\$0.11	224,973%	\$790.11
Tenormin 50 mg	\$104.47	\$0.13	80,362%	\$171.56
Vasotec 10 mg	\$102.37	\$0.20	51,185%	\$679.13
Xanax 1 mg	\$136.79	\$0.24	569,958%	\$355.77
Zestril 20 mg	\$89.89	\$3.20	2,809%	N/A
Zithromax 600 mg	\$1,482.19	\$18.78	7,892%	N/A
Zocor 40 mg	\$350.27	\$8.63	4,059%	N/A
Zoloft 50 mg	\$206.87	\$1.75	11,821%	\$611.25

cured19 and most of them should be able to avoid interferon-alpha therapy. But for Sovaldi® to optimally work, it needs ribavirin.

I hope you see the stair-step approach often required for real medical breakthroughs to occur. If it were not for a Herculean battle waged in the 1980s-1990s to get ribavirin approved, Sovaldi® may never have made it past initial clinical testing. It needed co-administering of ribavirin to achieve its curative effect.

The FDA now states that Sovaldi® should not be used without ribavirin.⁵⁶ Yet before 1998, the FDA initiated criminal investigations against those who promoted ribavirin's antiviral benefits.²¹

The problem is that there are precious few resources available to identify which of the thousands of compounds in the developmental stage should be **fast-tracked** to save lives today. It's in the interest of some drug companies to delay expending billions to get a better drug approved if that superior drug would compete with existing. already approved patented drugs.

Life Extension's mission is not to incite revolts against bureaucrats who refuse to recognize good science. Yet we have been put in that position as the pharmaceutical establishment cowers to governmental whim and edict when it comes to obtaining official drug approval.

The frightening aspect of this is that no one really knows how many cures are being suppressed by pharmaceutical

companies that don't want their valuable patents diminished by bringing out more effective treatments. There is also the risk that the FDA might overlook good science and reject an effective therapy after billions have been spent.

We need to tear down *bureau-cratic barriers* that stifle medical progress. Huge numbers of hepatitis C patients could have been saved had the FDA <u>not</u> blocked the approval of ribavirin. Even today, many health insurance companies are refusing to pay for **Sovaldi** (the **\$84,000** drug) until <u>after</u> hepatitis C patients succumb to liver failure.

Our 30-Year War Against Extortionist Drug Prices

Life Extension has members worldwide. This is one reason why we are able to discover novel approaches to disease prevention and treatment <u>before</u> they become accepted by the medical mainstream

A consistent comment we hear from members in other countries is how <u>low</u> priced their drugs are compared to the US. We've used this information to expose the incestuous relationship that exists between pharmaceutical companies, government bureaucrats, and elected politicians that cause American drugs to be so outlandishly priced.

To put this in context, **Life Extension** compiled the chart on the previous page nearly 12 years ago to expose the outlandish markups of prescription drugs.⁵⁷ This chart was blown up and used on the floor of the **House of Representatives** to push through a bill that would allow Americans to import lower-cost medications from other countries. Aggressive

consumer activism enabled this bill to be signed into law.

The **FDA** nixed the law on technical grounds that it (the FDA) did not have the resources to ensure the safety of imported drugs. This single act by the FDA provided the pharmaceutical industry with a financial windfall as Americans struggle to pay increasing health insurance premiums, co-pays, deductibles, <u>and</u> higher **taxes** to subsidize government-mandated insurance programs like the Affordable Care Act.

I relate this history to let new members know that we are no strangers to drug **price gouging**. The markup on acyclovir ointment where consumers pay close to \$700³ for an ingredient that costs **8 pennies** exceeds anything we've seen in the past.

These irrational prices are being forced on consumers who need pharmaceuticals often to stay alive. These outrageous markups would never survive in a **free-market** environment.

This blatant price gouging exists because of **government-imposed regulations** under the guise of consumer protection. These regulations stifle innovation, strangle creation of new treatments, and cost the public their money and longevity.

The obvious solution is to open up the market so that any reputable company could produce something as simple as acyclovir ointment and the many other generics that don't require specialized manufacturing expertise.

For longer life,

William Faloon

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Encapsulation

Probiotic

While people use *probiotics* for intestinal health, compelling new evidence indicates that they have a broad spectrum of health benefits.¹⁻⁶

Scientists are finding that <u>not</u> having the proper balance of good to bad bacteria can wreak havoc throughout the body.⁷⁻¹¹

FlorAssist® offers a <u>new</u> way to help maintain the proper balance of intestinal flora.

Why Don't Probiotics Always Work?

One of the complications many commercial probiotics face is their inability to overcome hurdles in the digestive tract before hitting their target area—an aspect that can greatly limit their beneficial effects.¹²

FlorAssist® Probiotic Liquid Vegetarian Capsules utilize a "dual encapsulation" technology to combat the shortcomings of many commercial probiotics, delivering unprecedented amounts of live bacterial colonies to where your body needs them.

FlorAssist® Probiotic Liquid Vegetarian Capsules...

- Contain probiotic strains that are acid resistant, protecting them from stomach acid that can destroy the viability of the strains;
- Have dual encapsulation technology, keeping the capsule intact longer, and ensuring that the probiotic reaches the small intestine,
- Provide a high CFU (Colony Forming Units) of 15 billion per capsule!

Choosing the Right Probiotic for You

While many supplements provide just **one** type of bacteria, taking a probiotic with <u>multiple</u> varieties of good bacteria can help better fight off bad bacteria.¹³

FlorAssist® Probiotic Liquid Vegetarian Capsules provide a proprietary blend of *six* bacterial strains! Each FlorAssist® dual capsule contains 15 billion CFU consisting of:

- · Lactobacillus acidophilus LA-14
- Bifidobacterium lactis BL-04
- Lactobacillus paracasei LPC-37
- · Lactobacillus rhamnosus LR-32
- Bifidobacterium bifidum/lactis BB-02
- Bifidobacterium longum BL-05

These **potent strains** of probiotic bacteria adhere to the soft lining of the intestinal tract, help maintain a healthy surface, and support the digestive system.

The retail price for a bottle containing 30 capsules of FlorAssist® Probiotic Liquid Vegetarian Capsules is \$33. If a member buys four boxes, the price is reduced to just \$22.50 per box.



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To order FlorAssist® Probiotic Liquid Vegetarian Capsules, call 1-800-544-4440, or visit www.LifeExtension.com



ARE YOU TAKING THE OPTIMAL FORMS OF VITAMIN

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

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

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

SESAME LIGNANS: THE NATURAL VITAMIN E BOOSTER

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

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

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

WORLD'S MOST COMPREHENSIVE VITAMIN E FORMULA!

The Gamma E Tocopherol with Sesame Lignans formula provides potent doses of critically important gamma tocopherol along with sesame lignans to augment its antioxidant effects. Suggested dose is one softgel once or twice daily.

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



Each softgel of Gamma E Tocopherol with Sesame Lignans provides:

Vitamin E (as D-alpha tocopherol)	45 IU
Gamma E mixed tocopherols	359 mg
Sesame seed lignan extract	20 mg

Contains soybeans.

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

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

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

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To order Gamma E Tocopherol with Sesame Lignans, 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.



Active Component In Green Tea Could Reduce Pancreatic Cancer Risk

A study published online in the journal *Metabolomics* found that the powerful catechin in green tea called EGCG (epigallocatechin-3-gallate) changed the metabolism of pancreatic cancer cells by suppressing the expression of the LDHA (lactate dehydrogenase) enzyme associated with cancer metabolism.*

Study author Dr. Wai-Nang Lee, of the Los Angeles Biomedical Research Institute, and colleagues also discovered an enzyme inhibitor called oxamate, which is known to reduce LDHA activity, functioned in a similar manner and also disrupted the metabolic system of pancreatic cancer cells.

Metabolism is the chemical processes that occur in an organism's cells, either normal or cancerous, that keeps cells alive and multiplying.

"Scientists had believed they needed a molecular mechanism to treat cancer, but this study shows that they can change the metabolic system and have an impact on cancer," said Dr. Lee. "By explaining how green tea's active component could prevent cancer, this study will open the door to a whole new area of cancer research and help us understand how other foods can prevent cancer or slow the growth of cancerous cells.

"This is an entirely new way of looking at metabolism. It is no longer a case of glucose goes in and energy comes out," continued Dr. Lee. "Now we understand how cancer cell metabolism can be disrupted, and we can examine how we can use this knowledge to try to alter the course of cancer or prevent cancer."

Editor's Note: A 2012 study recommended that consuming green tea may reduce risk of digestive system cancers in women, while a separate study found that EGCG delivered directly into tumors made two-thirds of them shrink or disappear entirely within a month with no side effects to normal tissue.

—A. Kessler

* Metabolomics. 2014 May 30.

Intense Exercise Linked To Atrial Fibrillation

The results of a study published in the journal *Heart* found a link between men who exercised intensely for more than five hours a week and an increased risk for developing an irregular heartbeat known as atrial fibrillation, a risk factor for stroke.*

Researchers from Karolinska Institute, Sweden, analyzed 44,410 men between the ages of 45 and 79 regarding their exercise habits at the ages of 15, 30, 50, and during the past year, when their average age was 60. They also monitored and recorded the heart health of

these men for an average of 12 years, looking in particular for atrial fibrillation. Those that worked out

than an hour by the age of 60.

intensely—more than five hours a week at the age of 30—were 19% more likely to have an irregular heartbeat by the time they turned 60 than the men who exercised less than one hour per week. The risk level rose to 49% among those who worked out more than five hours per week at the age of 30 and exercised less

However, the men who exercised less intensely—walking briskly or cycling—for an hour a day or more at age 60 were 13% less likely to develop atrial fibrillation than those who got no exercise at all.

Editor's Note: In an accompanying editorial, researchers Eduard Guasch and Lluís Mont say that when it comes to exercising "maximum cardiovascular benefits are obtained if performed at moderate doses, while these positive aspects are lost with (very high) intensity and prolonged efforts."

—A. Kessler

* Heart. 2014 May 14.

Zinc Supplementation Supports Prevention Of Premature Mortality In Malnourished Children

The Cochrane Library published a review on May 15, 2014, which concluded that supplementing with zinc reduced the risk of morbidity and mortality in malnourished children, while improving growth.*

Professor Zulfigar Bhutta, of the Center of Excellence in Women and Child Health at Aga Khan University in Karachi, Pakistan, and colleagues selected 80 randomized controlled trials that included a total of 205,401 boys and girls between the ages of 6 months and 12 years for their review. They found that supplementing with zinc decreased the risk of diarrhea, a major cause of death among children in developing countries. Zinc supplementation was also associated with a reduction in the risk of mortality from diarrhea, lower respiratory tract infection, and malaria, as well as death from all causes.

Editor's Note: Additionally, children who were supplemented with zinc were slightly taller at the end of the trials included in the current study, in comparison with those who did not receive the supplement.

—D. Dve

* Cochrane Database Syst Rev. 2014 May 15.



Metformin Aids In The Stabilization Of Metastatic Prostate Cancer

An article published in European Urology reports the outcome of a Swiss trial involving men with castration-resistant prostate cancer (defined as a testosterone level of less than **50 ng/dL** with progressive disease) who were given the antidiabetic drug metformin.*

For the trial, 44 nondiabetic men who had not been treated with chemotherapy for progressive, metastatic castration-resistant prostate cancer causing few or no symptoms were given 1,000 mg metformin twice a day until disease progression. Assessment of disease status including computed tomography of the abdomen, pelvis, and chest, bone scanning, and serum prostate cancer specific antigen (PSA) level measurement—was conducted every 12 weeks.

After initiation of metformin therapy, 36% of the group was progression-free at 12 weeks, and 9% were still progression-free at 24 weeks. PSA doubling time, a measure of disease progression, was beneficially prolonged in **52**% of patients after the initiation of metformin.

Editor's Note: The drug was also associated with improved insulin sensitivity.

—D. Dve

* Eur Urol. 2014 Jan 4.

Black Cumin Seed Oil Improves Abnormal Semen Quality In Infertile Men

Phytomedicine published the results of a clinical trial that revealed black cumin seed oil, Nigella sativa L., markedly boosts semen quality, motility, and volume with no adverse effects.*

In the study, researchers from Payame Noor University and Shahid Beheshti University of Medical Sciences, in Tehran, Iran, and Institute of Medicinal Plants, Karaj, Iran, tested 34 infertile men with sperm counts below 20 million per mL, or had less than 30% abnormal sperm morphology or type A and B (fast-moving for-

ward and slow-moving forward) motility less than 25 to 50% respectively. They also tested the pH of the semen since pH often determines the level of motility of the sperm.

The men received either 2.5 mL of Nigella sativa L. seed oil or a placebo twice each day. After eight weeks, the researchers again tested the motility, morphology, and sperm counts for the participants. They found the group supplemented with 5 mL of black cumin seed oil daily for two months had significantly higher sperm count, better motility and morphology, and improved pH levels compared to the placebo group and compared to the beginning of the study.

Editor's Note: Sperm counts around the world have been dropping. A 2012 study by researchers at the Institut de Veille Sanitaire (Sanitary Surveillance Institute), Saint Maurice, France, of around 26,000 men with an average age of 35 found that sperm concentrations dropped 32% over a 17-year period by a change rate of about 1.9% a year.

—A. Kessler

* Phytomedicine 2014 May 15.



A Purpose-Driven Life Reduces Mortality

An article published in Psychological Science links having a purpose in life to a reduced risk of premature mortality.*

"Having a purpose in life has been cited consistently as an indicator of healthy aging for several reasons, including its potential for reducing mortality risk," write authors Patrick L. Hill and Nicholas A. Turiano. "In the current study, we sought to extend previous findings by examining whether purpose in life promotes longevity across the adult years."

By evaluating data from over 6,000 men and women enrolled in the Midlife in the United States study, Hill and Turiano uncovered an association between a greater sense of purpose and a reduced risk of dying over 14 years of follow-up. "Our findings point to the fact that finding a direction for life, and setting overarching goals for what you want to achieve, can help you actually live longer, regardless of when you find your purpose," Dr. Hill noted.

Editor's Note: The authors are currently attempting to determine if the reason for the study's finding is due to the practice of healthier lifestyles among those having a purpose. They also plan to explore the effect of life purpose on other aspects of well-being.

—D. Dve

* Psychol Sci. 2014 May 8.

New Home Healthcare Diagnostic Tool

A miniature medical lab that's small enough to hold in your hand will soon allow consumers to run a variety of diagnostic tests from the comfort of their own homes. Known as the Cue, the device can test and track five key health indicators—testosterone, vitamin D, the flu virus, luteinizing hormone (which indicates a woman's fertility), and C-reactive protein (CRP, which serves as a marker of inflammation). Cue developers identify these as the most common tests run by health care practitioners in the US.

Tests are undertaken as the consumer submits a small sample (blood, nasal swab, or saliva) into a customized cartridge, which is then placed inside the Cue. Within moments, it's analyzed and the information is sent to your smartphone or tablet where it's displayed in an easy-to-read format.

The device is expected to retail in the spring of 2015 for \$300, with a price of \$20 for five test cartridges.*

Editor's Note: "We created Cue as a tool for people who are interested in connecting with their health in a much more direct, intuitive, and powerful way than ever before," says Ayub Khattak, Cue founder and CEO. Adds Cue cofounder and Chief Product Officer Clint Sever: "We worked to make sure that Cue delivered meaningful information in a way that can be understood without a medical degree.

—A. Kessler

* Cartridges for the influenza tests are slightly more expensive at three for \$30, but aren't needed as regularly as other test cartridges.

New Study Link Diabetes And Pancreatic Cancer

A study published in the Annals of Surgical Oncology found that people with diabetes have two times the risk of pancreatic cancer compared to those who don't have diabetes, according to an analysis of 88 international studies conducted between 1973 and 2013.*

Diabetes has long been associated with pancreatic cancer, but it hasn't been clear which condition came first. Dr. Mehrdad Nikfarjam, liver, pancreas, and biliary specialist in the Department of Surgery at the University of Melbourne, Australia, said pancreatic cancer is often diagnosed at an advanced, incurable stage.

"The study revealed the risk of pancreatic cancer was greatest after the diagnosis of diabetes, but remained elevated long after the diag-

nosis," Dr. Nikfarjam said. "The presence of diabetes remains a modest risk factor for the development of a cancer later in life."

> While pancreatic cancer cases in the general population remain relatively low, the analysis suggests screening for cancer should be recommended, especially for all newly diagnosed diabetics.

Editor's Note: Diabetics taking the drug metformin slash their risk of pancreatic cancer by 62%, according to a study emanating from MD Anderson.

—A. Kessler

* Ann Surg Oncol. 2014 Mar 14.

Cardiovascular Risks Overlooked In Antidiabetes Drug Trials

In a personal view, written in The Lancet Diabetes & Endocrinology, John McMurray, of the University of Glasgow, and colleagues ask why heart disease is rarely considered in clinical trials regarding glucoselowering drugs.* Hospitalization for heart failure is a common and important cardiovascular complication of diabetes, he continues, and increasing evidence shows that some glucoselowering drugs increase the risk of heart failure. Such findings have prompted the FDA to make new regulations requiring cardiovascular outcome trials for new drugs.

"Fortunately, some trials in progress are taking heart failure into account as a secondary outcome," said Professor McMurray. "But many others are neglecting to report this important complication as a key trial outcome. Until heart failure is systematically evaluated in clinical trials, the cardiovascular safety of antidiabetes drugs will remain uncertain."

Editor's Note: Cardiovascular outcome trials usually use MACE events (major adverse cardiovascular events, which include death, heart attack, and stroke) as a primary outcome. As McMurray points out, heart failure can be more common than these events, especially in patients with advanced diabetes.

-A. Kessler

* Lancet Diabetes Endocrinol. 2014 Mar 13.



Supplementation With Magnesium Lowers C-Reactive Protein In Prediabetics

An article published online on May 7, 2014, in the *Archives of Medical Research* reports the results of a double-blind trial of subjects with prediabetes and low magnesium levels that

found a benefit for magnesium supplementation in reducing C-reactive protein (CRP), a marker of inflammation.*

The trial included 62 men and women between the ages of 18 to 65 years with newly diagnosed prediabetes who had magnesium levels below **0.74 mmol/L**. Participants received an oral magnesium chloride solution containing **382 mg** magne-

sium or a placebo daily for three months, and both groups received advice concerning physical activity and the compo-

nents of a healthy diet. Plasma glucose, serum magnesium, and CRP levels were measured before and after the treatment period.

While both groups experienced a decline in CRP, the decrease was significantly greater among those who received magnesium.

Editor's Note: Additionally, at the end of the study, serum magnesium was higher, and fasting and two-hour post-load glucose levels were lower among those who received magnesium in comparison with the placebo.

—D. Dye

* Arch Med Res. 2014 May 7.

Meta-Analysis Links Greater Sugar Intake To Higher Blood Pressure And Lipids

An article published in the *American Journal of Clinical Nutrition* details the findings of New Zealand researchers of higher blood pressure and cholesterol among men and women who consumed the most sugar.*

Researchers in New Zealand selected

40 trials for their analysis, which included a total of 1,699 men and women. Thirtynine of the studies provided data concerning lipid levels and 12 reported blood pressure. Studies included those in which dietary interventions intended to alter sugar intake in one group of participants were compared to a group with a differing intake. The researchers found an association between increased sugar intake and higher total cholesterol and triglycerides in comparison with levels measured in subjects who had a lower intake, which was particularly strong in subgroup analyses of studies in which no significant difference in weight change occurred between the groups.

Editor's Note: An association between greater sugar intake and higher systolic blood pressure was observed in trials lasting eight weeks or more.

—D. Dye

* Am J Clin Nutr. 2014 May 7.

POWERFUL PROTECTION FOR A LOW PRICE

GREEN TEA EXTRACT

Rich In EGCG For Optimal Health

Nearly 6,000 studies have been published on the broad-spectrum health benefits of green tea. Research shows that green tea favorably influences cardiovascular health, lipid clearance, glucose tolerance, healthy body weight, DNA repair, prostate and breast health, and healthy cell division.¹⁻⁷ Scientists have identified the polyphenol **EGCG** as the key compound for green tea's multimodal health benefits.8

Life Extension® has created a high-potency, standardized 98% polyphenol green tea extract. These highly concentrated Mega **Green Tea Extract Capsules** contain **725 mg** of either lightly caffeinated or decaffeinated 98% standardized green tea extracts.

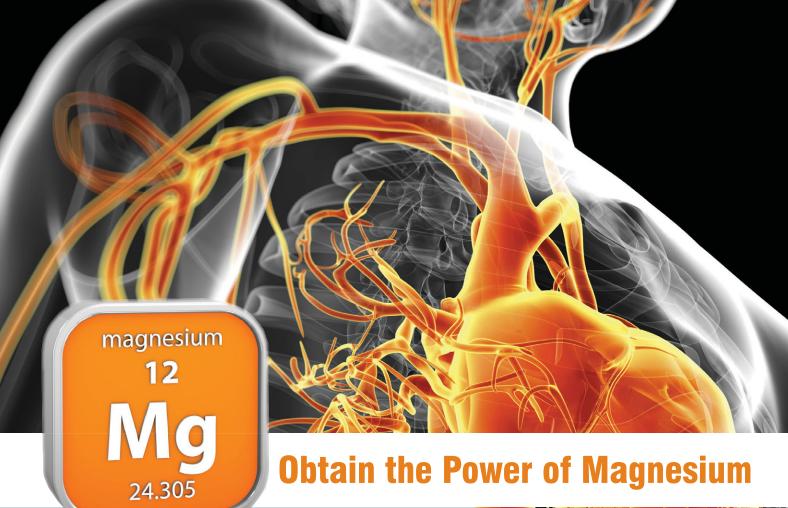
The retail price for **100** vegetarian capsules of Mega Green Tea Extract is \$30. If a member buys four bottles of **725 mg Mega Green Tea Extract** capsules, the price is reduced to \$18 per bottle. Each bottle will last over three months at the typical dose of one capsule daily.

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call 1-800-544-4440 or visit www.LifeExtension.com



Are You Deficient in The Body's #1 Mineral?

Magnesium is the **most important** mineral in the body, yet most Americans do not obtain sufficient magnesium from their diet.

Magnesium is required for more than **300 biochemical reactions** and many of the body's critical functions are dependent upon it. Magnesium helps:^{1,2}

- Maintain normal muscle and nerve function.
- Keep **heart rhythm** steady.
- Support a healthy **immune system**.
- Keep bones strong.
- Maintain **blood sugar levels** already within normal range.
- Promote normal **blood pressure**. Magnesium is also...
- Involved in energy metabolism and protein synthesis.

The recommended intake of magnesium to maintain vascular health is **500 mg** or more a day. With **Life Extension Magnesium Caps**, you can easily obtain **500 mg** of elemental magnesium for less than **7 cents a day**!

A bottle of 100 vegetarian capsules of **500 mg Magnesium Caps** retails for **\$12.** If a member buys four bottles, the price is reduced to **\$7.50** per bottle.

Caution: If taken in high doses, magnesium may have a laxative effect. If this occurs, divide dosing, reduce intake, or discontinue use.



BLACK CUMIN SEED OIL

As we age, a balanced immune and inflammatory response becomes critical to guarding our health.1-5

Research has shown **Black Cumin Seed Oil** to be particularly effective.6-8

UNIQUE MOLECULAR COMPLEX

Scientists have determined that **black cumin seeds** contain a broad spectrum of active compounds.⁶ Combined, these compounds provide powerful and wide-ranging immune support and promote healthy inflammatory response.6,7

DUAL IMMUNE SUPPORT

A number of biological factors contribute to the body's normal inflammatory activity, including cell-signaling chemicals and hormone-like messengers. 8 In a series of scientific studies, **Black Cumin Seed Oil** has been shown to support the normal effectiveness of these inflammatory factors.^{6,7}

Also, an aging, healthy immune system needs to orchestrate the activity of macrophages and helper T-cells that work together to identify and destroy dangerous microbes and abnormal cells. Black Cumin Seed Oil was also shown to support the optimal function of these vitally important defensive activities. 9-11

A BALANCED INFLAMMATION RESPONSE

By acting on both immune factors and inflammatory factors, **Black Cumin Seed Oil** supports a healthy immune system—which is increasingly important as we age—and facilitates a healthy inflammatory response!

The suggested daily dosage of two softgels of Black Cumin Seed Oil provides: Thymocid™ organic Black Cumin seed oil (Nigella sativa)

A bottle containing 60 softgels of **Black Cumin Seed Oil** retails for \$16. If a member buys four bottles, the price is reduced to \$10.50 per bottle. (Item# 01709)

Since **curcumin** possesses some of the properties of **black cumin seed oil**, some people might want to take both nutrients in the same capsule.

The suggested daily dose of two softgels of Black Cumin Seed with Bio-Curcumin® provides:

BCM-95° Bio-Curcumin° (turmeric 25:1) extract (root)	400 mg
Thymocid™ organic Black Cumin Seed Oil (Nigella sativa)	1,000 mg

A bottle containing 60 softgels of **Black Cumin Seed Oil with** Bio-Curcumin° retails for \$32. If a member buys four bottles, the price is reduced to \$22.50 per bottle. (Item# 01710)

To order Black Cumin Seed Oil or Black Cumin Seed Oil with Bio-Curcumin®, call 1-800-544-4440 or visit www.LifeExtension.com





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REDUCE Dangerous Fat FROM FOOD

Revolutionary Natural Fiber <u>Selectively</u> Binds Pro-Inflammatory Fatty Acids In Food

Visceral fat is the fat mass that surrounds the internal organs of our abdomen.

<u>Excess</u> visceral fat promotes systemic **inflammation**, which <u>accelerates</u> the diseases of aging.¹

Ingestion of simple sugars and certain types of dietary fat, including **trans fats** and **saturated fat**, all contribute to **inflammation**.

Typical Americans ingest too many sugars, starches, and unfriendly fats. The result is they frequently carry around excess **abdominal fat** despite all the exercise and weightloss programs available.

Drugs that block dietary fat absorption are typically <u>non-selective</u>, meaning they impede the absorption of anti-inflammatory **omega-3** fatty acids as well as pro-inflammatory saturated fatty acids. These drugs are also well-known for side effects like diarrhea and bloating.

A product that selectively binds pro-inflammatory fats like **trans fat** and **saturated fats** while sparing beneficial anti-inflammatory fatty acids would be ideal.





Most Americans consume too many saturated fats in their diet, and deadly trans fats continue to be hidden in commercially prepared foods.

Reducing the quantity of these ingested fats that are *absorbed* into one's bloodstream provides a myriad of health benefits.

For example, for people who eat two heavy-fat meals a day,³ 2 grams of *alpha-cyclodextrin* taken before each of these meals can remove up to 320 calo**ries** from the body before absorption.

Alpha-cyclodextrin can be a helpful strategy in maintaining healthy cholesterol and triglyceride levels while reducing the risk of **metabolic syndrome**. This fiber has been shown to lower the dangerous apolipoprotein B (ApoB) type of cholesterol, known to increase with ingestion of pro-inflammatory saturated fat. Elevated ApoB has been shown to contribute to atherosclerosis.4

Human research demonstrates that alpha-cyclodextrin can be a highly useful component in controlling the negative impact of harmful fats before they enter the bloodstream.

The Problems With Fat-Blocking Drugs

Many people have tried—and given up on—fatblocking drugs such as orlistat, which is marketed as **Alli**[™] or **Xenical**[®]. There are problems with these drugs that make them difficult to use. Unlike alphacyclodextrin, these medications rely on inhibiting the *lipase* enzyme that breaks down triglycerides (the major form of dietary fat) into single fatty acid molecules.5

Instead of isolating dietary fatty acids from the rest of the intestinal contents the way alpha-cyclodextrin



does, these drugs leave triglycerides "loose" in the colon. There, they may undergo digestion or fermentation to produce gas and fluids, leading to flatulence. urgency, cramping, loose stools, and possibly diarrhea or release of oily material from the rectum.⁵

An additional problem with fat-blocking drugs is they remove all types of fats, regardless of whether they are good fats or bad fats.

As you'll read, the fat-absorbing qualities of *alpha*cvclodextrin translate directly into reduced markers of cardiovascular and metabolic risk.

Alpha-Cyclodextrin's **Broad Spectrum Of Benefits**

For nearly 30 years, researchers have been investigating *alpha-cyclodextrin* as a dietary fiber that can modulate fat (lipid) metabolism in animals.⁶ This effect was first established by scientists in Japan who fed young, growing rats a fiber supplement containing alpha-cyclodextrin in their diets. The result was less weight gain and less body fat deposition compared with animals that did not receive this fiber.6 As an added benefit, these rats showed reduced levels of triglycerides in both blood and liver tissue.

Improvements in lipid profile have since been shown in numerous animal studies involving the use of alpha-cyclodextrin. Laboratory mice fed a high-fat, Western-style diet were supplemented with alphacyclodextrin for 14 weeks. This supplemented group showed decreases of 15.3% in total cholesterol, 20% in free cholesterol, and 14% in cholesterol esters (a bound form of cholesterol).7

Importantly, the majority of the type of cholesterol that was reduced was the dangerous ApoB, known to be increased with the intake of dietary saturated fat, and which is associated with a higher risk for atherosclerosis.⁷ This ApoB cholesterol fraction can be measured through a VAP blood test. A further reduction in the risk of atherosclerosis and cardiovascular disease was seen when the animals' fatty acid blood levels were measured. Alpha-cyclodextrin supplementation increased beneficial unsaturated fats by 2.5%. while reducing pro-inflammatory saturated fats and trans fats by **4.5** and **11%**, respectively.⁷

This led researchers to believe that alpha-cyclodextrin could selectively reduce unhealthy fats, while leaving alone the safer fats. In a compelling confirmatory experiment, rats were fed diets containing alpha-cyclodextrin or control supplements, and then given a test diet with radioactively labeled saturated or unsaturated fats. The result was a seven-fold increase in **excretion** of saturated fats in those given alphacyclodextrin compared with control animals. And in

the alpha-cyclodextrin group, there was no increase in excretion of the beneficial polyunsaturated fats like omega-3s.8

Further exciting evidence that alpha-cyclodextrin preferentially reduces dangerous fats comes from an animal experiment in which mice were fed either a standard Western diet laden with fat, or the same diet with alpha-cyclodextrin supplementation.⁴ As can be seen in Figure 1, the alpha-cyclodextrin-supplemented animals had major reductions in almost all fatty acids in their blood, indicating the elimination of those fats from the body. But the most interesting thing about this figure lies in exactly which fats were decreased. and which were increased.

There was a 25% reduction in deadly trans fats as well as a significant 10% reduction in the saturated fats that also contribute to cardiovascular risk.⁴ At the same time, there was a roughly 13% increase in beneficial omega-3 DHA. In this same study, the ratio of LDL ("bad") to HDL ("good") cholesterol was reduced by nearly 5% in the alpha-cyclodextrin group, demonstrating still further reduction in cardiovascular risk. Recent studies reveal that elevated LDL cholesterol is not only a cardiovascular catastrophe, it also has now been shown to promote the spread of cancer throughout the body.1

Note that these changes were made entirely without reducing dietary intake of dangerous fats, and

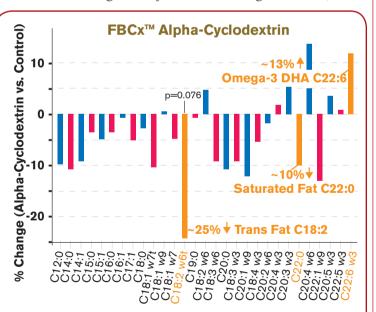
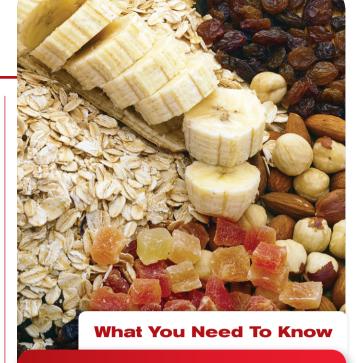


Figure 1. Animals were fed a high-fat diet with or without alpha-cyclodextrin supplementation. The alpha-cyclodextrinsupplemented animals experienced a nearly 25% reduction in deadly trans fats, as well as a significant 10% reduction in saturated fats. Supplemented animals also experienced a 13% increase in the beneficial omega-3 fatty acid DHA.4



Unique Fiber Disrupts Fat Cycle

- Even the most careful diet and lifestyle modifications leave many people still unable to lose weight and unable to manage their out-of-control blood lipid profiles.
- Such people remain at increased risk of early death or disability, risks that grow each
- A new dietary fiber, alpha-cyclodextrin, has the ability to engulf excess dietary fat, especially pro-inflammatory saturated fat, from the intestine at the rate of up to 2 ounces per day (saving up to 500 calories in the process).
- Unlike many other forms of fiber, alpha-cyclodextrin has a pleasant taste and texture, and far fewer of the side effects like bloating, gas, and loose stools that are common with fat inhibitors such as orlistat (Xenical®, Alli™).
- Both acute and chronic use of alpha-cyclodextrin slashes the amount of dietary fat absorbed from meals, helps normalize lipid profiles, and slows persistent weight gain, helping to lower the risk of an early cardiovascular or metabolic death.
- If you can't improve your lipid profile or lose weight and keep it off, you owe it to yourself to start regular daily supplements with 2 grams of alpha-cyclodextrin per meal.

How Alpha-Cyclodextrin Engulfs And Eliminates Trans Fat And Saturated Fat

The selective fat-absorbing effectiveness of the natural fiber alpha-cyclodextrin is due to the unique structure of this molecule.

In contrast to conventional fiber molecules that are linked in large, bulky chemical chains and bind fat non-selectively, each molecule of alphacyclodextrin is composed of streamlined chemical chains, linked head-to-tail to form a doughnut-like shape.

The outer section of the alpha-cyclodextrin doughnut-like shape dissolves readily in the water found in the intestinal tract. But the inner walls (the walls of the "doughnut hole") repel water, and selectively cling to fat molecules.

Due to the molecular structure of saturated fats. these pro-inflammatory fats are strongly attracted to the soluble alpha-cyclodextrins. Once the saturated fats are bound in the "doughnut hole" of the cyclodextrins, the cyclodextrin/fat complexes become insoluble in water, so they form tiny clumps of material that are readily excreted from the body before entering the bloodstream.7

As millions of small alpha-cyclodextrin "doughnut" molecules mix in the intestine, they rapidly and selectively "suck up" unhealthy, pro-inflammatory fat molecules (trans fat, saturated fat) and safely carry them out of the body in fecal matter.

Unlike conventional dietary fiber, which nonselectively binds fat in about a 1:1 ratio, a single gram of alpha-cyclodextrin is able to bind up to approximately 9 grams of fat.2

The math is easy to do: At a daily dose of 6 grams of alpha-cyclodextrin, this fiber has the potential to grab up to approximately 54 grams of fat (6 x 9 fat grams equaling 54 grams of fat).

That's about 2 ounces of pro-inflammatory trans fat and saturated fat exiting the colon that the body will never see circulating in its bloodstream. Equally impressive, taking just 6 grams of alpha-cyclodextrin can potentially eliminate nearly 500 fat calories/day.



also without supplementation with omega-3 and other beneficial fats. Rather, the alpha-cyclodextrin itself appears to have caused these favorable shifts in lipid profiles through its remarkable ability to selectively bind and eliminate destructive lipid molecules.

Dumping out significant quantities of unabsorbed dietary fat might be expected to combat weight gain and improve markers of the metabolic syndrome. That's exactly what scientists found when they fed a high-fat diet to rats that were supplemented with alphacyclodextrin.9 All of the animals on the unhealthy diet that were not supplemented with alpha-cyclodextrin gained weight. The supplemented animals had significantly less weight gain, and had a 30% reduction in plasma triglycerides, a 9% reduction in cholesterol, and an increased amount of fat excretion in their feces, demonstrating successful elimination of unabsorbed fat from the intestine.9 In addition, these animals had improved insulin sensitivity and showed normalization of serum *leptin*, the satiety hormone that signals the body that it no longer has to feel hungry.

Human Studies Confirm Metabolic Effects Of Alpha-Cyclodextrin

Human studies showing the effectiveness of alphacyclodextrin on reducing blood lipids, body fat, and body weight have confirmed the evidence found in animal and lab studies. In one such study, obese patients with type II diabetes were randomly assigned to take 2 grams of alpha-cyclodextrin with each fat-containing meal. Patients were asked not to change their regular eating habits or daily routine.10

For 30 days before the beginning of the supplement period, participants in both groups gained an average of **2.2 pounds** each, but once the supplement period

began, placebo recipients continued to gain weight, while subjects in the alpha-cyclodextrin group had no significant further weight gain.¹⁰

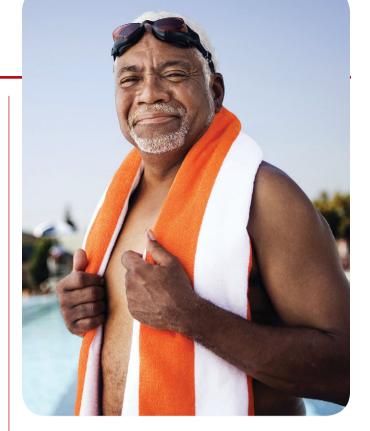
There was also good news on the blood lipid front: Among those who started the study with elevated lipids, supplemented patients had an 8.2% reduction in total cholesterol, while those in the placebo group saw their total cholesterol *rise* significantly by **5.2**%. ¹⁰ In addition, patients taking alpha-cyclodextrin had an increase in levels of adiponectin, a hormone that appears to be protective against atherosclerosis, while levels of this beneficial substance fell in the placebo

After a fat-rich meal, blood triglyceride levels tend to rise very sharply, and the degree of that rise is a strong predictor of cardiovascular risk. Thus, lowering post-meal triglyceride levels is an important component for reducing heart disease.11-14

In an attempt to acutely lower post-meal triglycerides, researchers randomly assigned healthy adults to receive either **2 grams** alpha-cyclodextrin or a placebo immediately following a commercially prepared high-fat breakfast rich in saturated fat. 15 Compared to placebo recipients, patients supplemented with this one-time dose of alpha-cyclodextrin absorbed 69% less of the fat provided in the test meal.

Alpha-cyclodextrin's effects can be sustained over long periods of time, according to a study of 66 obese diabetic patients.² Subjects were randomly assigned to receive either placebo or two 1 gram tablets of alpha-cyclodextrin with each meal for three months (total 6 grams/day). Those with the highest intakes of total and saturated fat lost more weight than those with lower intakes, again demonstrating that alpha-cyclodextrin has a preferential affinity for the





more dangerous saturated fats. Careful analysis also showed that the amount of fat (in grams) excreted by these subjects was about nine times the amount of alpha-cyclodextrin that they had ingested, confirming previous laboratory studies.

Effect Of Alpha-Cyclodextrin In Healthy Adults

So far we have looked at human studies involving obese and/or diabetic individuals. But a recent study showed that alpha-cyclodextrin has benefits on body weight and lipid profiles even in healthy, non-obese, nondiabetic people, demonstrating genuine preventive effects.16

A group of overweight people (with a body mass index of 25 to 30) were randomly assigned a placebo or 2 grams alpha-cyclodextrin with each meal (6 grams/ day). After two months, supplemented individuals had an average weight loss of just under a pound with decreases in total cholesterol (5.3%) and LDL ("bad") cholesterol (6.7%). The atherosclerosis-promoting protein ApoB also fell **5.6**% in supplemented patients, while serum insulin levels fell 9.5%, compared to controls.16

In a similar study on healthy volunteers, these beneficial effects on metabolic parameters were further validated.¹⁷ After an overnight fast, subjects consumed either 100 grams (about 3.3 ounces) of white bread with water or 100 grams of white bread with 10 grams alpha-cyclodextrin in water. Researchers recorded the **glucose** and **insulin** responses following this "meal" in both groups over a three-hour period.

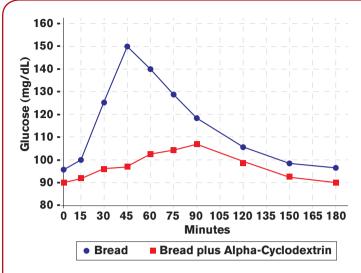


Figure 2. Blood sugar levels following "meal" of **100 grams** of bread alone or with **10 grams** of alpha-cyclodextrin in healthy volunteers. Note the peak rise of blood sugar to **150 mg/dL** in control subjects, with gradual rise not reaching **110 mg/dL** in supplemented group.

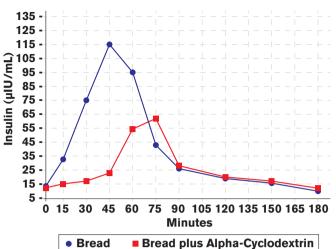
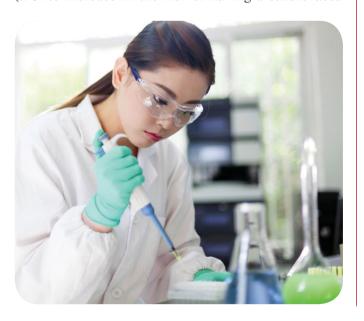


Figure 3. Blood insulin levels following "meal" of **100 grams** of bread alone or with **10 grams** of alpha-cyclodextrin in healthy volunteers. Note the sharp and early peak in insulin in control subjects, with much lower, later, and less-prolonged elevation in supplemented subjects.

As might be expected, the control group that was not taking alpha-cyclodextrin had a dramatic post-meal rise in both glucose and insulin levels. By contrast, the subjects supplemented with alpha-cyclodextrin had hardly any rise in post-meal glucose (Figure 2), as well as a delayed and much reduced increase in post-meal insulin (Figure 3).¹⁷

This study is especially important, given the outsized impact on cardiovascular and diabetic risk posed by such sharp after-meal spikes in insulin and glucose (a 51% increase in the risk of having a cardiovascu-



lar event and an **89%** increase in the risk of dying).¹⁸ It also shows that you can gain control not only of your blood lipids and body weight, but also metabolic and cardiovascular risks, by taking alpha-cyclodextrin before meals.

Similar results were obtained in a study in which the alpha-cyclodextrin (at doses of **2**, **5**, and **10 grams**) was directly mixed with boiled white rice.¹⁹ At **5** and **10 grams** of alpha-cyclodextrin, the amount of **glucose** that was absorbed was significantly <u>reduced</u> and the volunteers experienced a greater feeling of satiety.

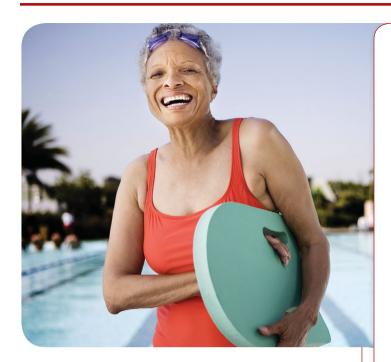
As has long been reported in *Life Extension*® magazine, after-meal (*postprandial*) surges in blood **glucose** and **insulin** levels create metabolic havoc and sharply increase vascular disease risk.²⁰⁻²⁵

Summary

Too much saturated fat in the diet is one of the leading causes of America's ongoing epidemic of obesity, lipid disturbances, and the resulting high risk of cardiovascular disease.

Even with the best attempts to eat a balanced diet and get regular exercise, many people find it difficult to lose weight, balance their blood lipid profiles, and reduce their risk of dving early.

A new form of fiber, *alpha-cyclodextrin*, selectively engulfs dietary fat from the intestine, holding about **9 grams** of fat for each **gram** of the supplement ingested. This high-efficiency dietary fat absorber can cut your



exposure to dietary fat by about 2 ounces per day, at a daily savings of around **500 calories**.

And just as importantly, alpha-cyclodextrin, dosed at about 6 grams/day, can reduce high levels of triglyceride, cholesterol, and pro-atherosclerosis lipidcarrying proteins like ApoB, the latter of which is known to be increased by dietary saturated fat.

Studies show that regular use of alpha-cyclodextrin slows weight gain in both obese and non-obese patients, and those both with and without type II diabetes.

The fact that keeping nearly 500 calories a day of fat from entering the bloodstream does not result in substantial weight loss demonstrates how challenging it can be for aging individuals to shed body fat. If one were to engage in an aggressive diet and exercise program, it would appear that the addition of 6 grams a day of *alpha-cyclodextrin* would produce an additive weight-loss effect.

Alpha-cyclodextrin is available in a chewable tablet with a pleasant taste and texture and a near-complete lack of the intestinal side effects common with other, less selective "fat-blocking" drugs.

NOTE: Alpha-cyclodextrin is best taken in a *chewable* tablet that allows the unique fiber to be masticated and ready to work once it hits the stomach.

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

The Dangers Of High **After-Meal Glucose**

After-meal surges in blood glucose create a long-lasting metabolic disaster that can lead to vascular diseases including heart attacks, strokes, kidney damage, retinal disease, and more.26

In this article you learned that alpha-cyclodextrin, in addition to quelling dangerously elevated fat levels, helps reduce those after-meal glucose spikes. Several other unique compounds have been shown to tame these surges as well, and should be considered in people who want to maximize their protection.

Such supplements are remarkable for the similarity in their mechanisms of action to alphacyclodextrin: They "trap" carbohydrate molecules in the intestine and prevent their entry into the bloodstream, just as alpha-cyclodextrin "traps" saturated fatty acids in the intestine. Here is a summary of those compounds:27-34

- Transglucosidase, which converts readily digested starch into non-digestible, prebiotic fiber molecules. This action retains the sugar from ingested starch in the intestinal tract, while nourishing beneficial gut bacteria.
- Extracts of mulberry leaf and green coffee, which inhibit the alpha-glucosidase enzyme responsible for breaking simple starches into free sugars. Again, the net effect is the trapping of sugar in the intestine, rather than allowing its absorption.
- Phloridzin from apple extract, which inhibits the molecular carriers responsible for transporting sugars from the intestine into the bloodstream. In the presence of phloridzin, these sugars are trapped in the gut.
- Extracts of white kidney bean, which inhibit the enzyme amylase, another vital step in the breakdown of branched starch molecules into simple sugars. Sugars in unbrokendown amylose starch remain in the gut and are excreted before they can be absorbed to contribute to high blood sugar.
- **Propolmannan**, which slows stomach emptying, delaying delivery of carbohydrates to the small intestine for absorption.

Why You Still Need **Adequate Dietary Fiber**

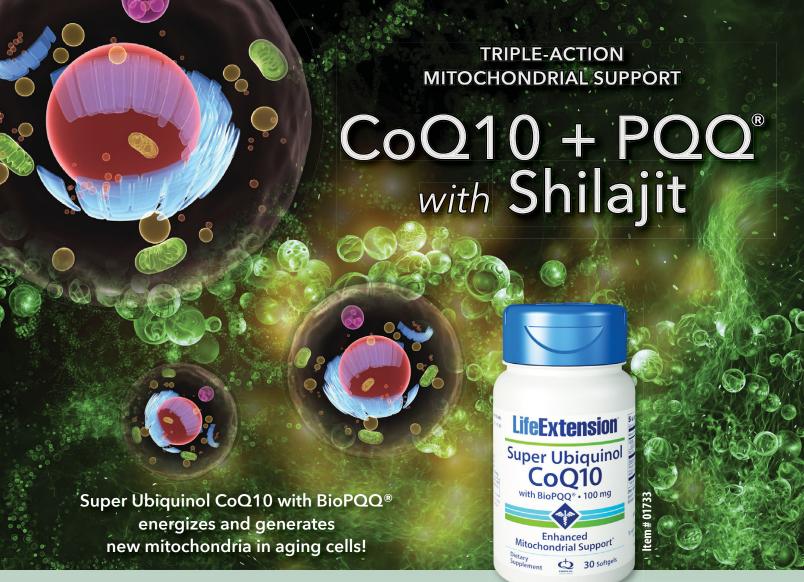
Alpha-cyclodextrin is a novel dietary fiber, but it is highly specialized for the purpose of vacuuming up fats that have been ingested in the diet. One of its remarkable properties is that you only need a relatively small dose (on the order of 6 grams daily) to achieve important reductions in the amount of fat and calories absorbed from meals.

Unlike other dietary fiber sources, however, alpha-cyclodextrin, once loaded with its cargo of fat, is excreted intact, without further breakdown by bacteria living in the colon. That's why you still need ample dietary fiber in order to provide the beneficial breakdown products your colon cells need to stay healthy. You should aim for a minimum of 30 grams (a bit more than an ounce) of dietary fiber each day, in addition to your regular dosing of alpha-cyclodextrin, to optimally promote your cardiovascular, metabolic, and colonic health.

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1. Super Ubiquinol CoQ10

CoQ10 is required for generating optimal cellular energy. The *ubiquinol* form of CoQ10 offers superior absorption to the standard ubiquinone form.¹

2. Shilajit Complex

PrimaVie® Shilajit has been shown to <u>double</u> levels of CoQ10 in the mitochondria.¹ Combining CoQ10 and Shilajit produced a **56**% increase in energy production in the brain and a **144**% increase in energy production in muscle.²

3. BioPQQ®

PQQ activates genes that promote the formation of new mitochondria while boosting mitochondrial antioxidant defenses.^{3,4}

The optimal dose of PQQ is 20 mg each day. Members taking Mitochondrial Energy Optimizer, Mitochondrial Basics, or PQQ 10 mg caps obtain this optimal PQQ dose when taking the new Super Ubiquinol CoQ10 with BioPQQ*.

The suggested dosage of <u>one</u> softgel daily of Super Ubiquinol CoQ10 with BioPQQ® provides:

Ubiquinol (as Kaneka QH Ubiquinol®)	100 mg
PrimaVie® Shilajit fulvic acid complex	100 mg
BioPOO® Pyrrologuinoline guinone disodium salt	10 ma

A bottle of 30 softgels of **Super Ubiquinol CoQ10 with BioPQQ**® retails for \$54. If a member buys four bottles, the price is reduced to **\$37.50** per bottle.

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Many aging individuals find themselves under assault from rising blood sugar levels.

Despite a healthy diet and exercise, blood sugar levels can rise due to a number of factors including excess *qluco*neogenesis whereby the liver produces glucose from protein. Another issue is the rapid conversion of any **starch**, including whole grains, into glucose. The result is that even health-conscious, active people can experience higherthan-desired blood sugar levels as they age. 1,2

An all-natural, multi-pronged approach has been designed to support the natural balance of key *qlucose* pathways!

Tri Sugar Shield™ provides three plant-derived nutrients that—through their rich array of complementary mechanisms³⁻¹⁸—afford an unrivaled level of optimal, broadspectrum support for healthy glucose metabolism in aging individuals within normal range.

MULTI-PRONGED APPROACH

Life Extension® Tri Sugar Shield™ contains the following three nutrients:

Sorghum Extract

Sorghum has long been cultivated in Asia (and now is grown in Africa, India, China, Australia, and the USA) and helps maintain healthy blood sugar levels, among those in the normal range, by modulating four different mechanisms:

- Balances the rate of sugar manufacture in the liver (gluconeogenesis).5
- Promotes insulin sensitivity.6
- Regulates PPAR-aamma, a metabolic thermostat controlling glucose metabolism.^{6,7}
- Regulates the enzyme alpha-amylase, which in turn controls the release of sugar found in starch.3,4

Mulberry Leaf Extract

Mulberry leaf has been used in Chinese traditional medicine for centuries. Mulberry leaf extract targets three different mechanisms:

- Targets the *alpha-glucosidase* enzyme to regulate conversion of starch into glucose. 8-10
- Supports glucose transporter GLUT4 that moves glucose out of the bloodstream and into muscle and liver cells. 11,12
- Promotes insulin sensitivity.13

Phloridzin

Phloridzin is a natural polyphenol found in various fruit trees.14 Phloridzin helps maintain healthy blood sugar levels, among those in the normal range by:

- Targeting carrier protein SGLT1, in turn helping to block the absorption of glucose into the bloodstream. 15,16
- Targeting carrier protein SGLT2, in turn supporting glucose elimination via urine.17,18

By targeting **all** of these diverse glucose pathways, **Life Extension® Tri Sugar Shield™** delivers the widest possible **support** to help naturally stabilize already healthy glucose levels!

The suggested daily dose of one vegetarian capsule taken twice daily before the heaviest carbohydrate or sugarcontaining meals/drinks of **Tri Sugar Shield**™ provides:

Sorghum bran (<i>Sorghum bicolor</i>) extract [providing 540 mg proanthocyanidins (540 mg)]	600	mg
White mulberry extract (leaf) [providing 15 mg 1-deoxynojirimycin (DNJ) (15 mg)]	300	mg
Phloridzin [from apple extract (root bark)]	100	mg

A bottle of 60 vegetarian capsules of Life Extension® Tri Sugar Shield™ retails for \$36. If a member buys four bottles, the price is reduced to \$24 per bottle.

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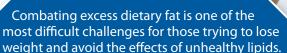


FIT



LIMIT EXCESS DIETARY FAT

FIBER



CalReduce Selective Fat Binder safely binds to **excess fats** in your body and can help you maintain a healthy weight.

The primary ingredient in this formula is **alpha-cyclodextrin**, a <u>patented</u> super-fiber that **absorbs** fat molecules from your food before they enter your bloodstream.

This soluble fiber absorbs **9 times** its weight in dietary fat—without undesirable gastrointestinal side effects. And research shows that **alphacyclodextrin** selectively binds to unhealthy **saturated** and **trans fats** without affecting healthy fats such as polyunsaturated fatty acids. In one experimental study, it was shown that **alpha-cyclodextrin** caused an approximately **13%** increase in beneficial **omega-3** DHA blood levels.

Chewing the recommended **two tablets** after each fat-containing meal binds up to **36 grams** of pure dietary fat, assuming you eat two fat-containing meals daily. This is sufficient to decrease up to **320 calories** from the fat in your food.¹ If all your daily meals are high in fat, chew **two tablets** of **CalReduce Selective Fat Binder** with each of your **three meals** to reduce your caloric intake up to **500** calories a day.

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

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Primate Study Confirms CALORIE RESTRICTION

Extends Life And Protects
Against Age-Related Disease

Eating less can enable you to live longer in a far healthier state.

A controversy erupted two years ago when researchers at the **National Institute on Aging** proclaimed that humans may *not* benefit by consuming fewer calories.

The media reacted by running headlines and news articles stating that how much you eat has no effect on health and longevity.

Life Extension® knew the National Institutes of Health's findings were <u>erroneous</u> and published rebuttals to it.

We are pleased to report that a **2014** primate study at the *University of Wisconsin* showed that compared to calorie-restricted monkeys, those in the control group (not calorie restricted) were almost three times more likely to <u>die</u> from age-related causes.





Two Calorie Restriction Studies Compared

Ben Best, in his excellent report on the European Biogerontology Conference in the May 2014 issue of this publication, analyzed differences between the two studies that would likely account for such findings.

...the UW control monkeys could eat whenever they wanted (which represents the typical human diet), whereas the NIA control monkeys received a standard allotment of food, which mildly restricted their calories. On average, there was a greater difference in body weight between the calorie-restricted and the control monkeys at UW than at the NIA. In rats, very low levels of dietary restriction have a significant effect on survival, so the NIA controls may be showing those benefits, which diminished the longevity difference between the two groups of monkeys (calorie-restricted versus controls).⁵

Ben Best also mentioned important differences in the carbohydrate composition between the two studies:

Although both the NIA and the UW monkeys received nearly 60% carbohydrates, the UW diet was 28.5% sucrose, whereas the NIA diet was only 3.9% sucrose. The UW protein source was lactalbumin, whereas the NIA diet included fish meal, which is rich in omega-3 fatty acids. Omega-3 fats are known to reduce cardiovascular disease.⁵

The NIA paper caused a media frenzy with headlines, declaring that calorie restriction doesn't work. And calls came in to our group, the **CR Way**TM, asking for clarification of the results. So we collaborated



with the CR Society in organizing a joint meeting of scientists who study calorie restriction in rhesus monkeys and those studying long-term caloric restriction in humans.

Many important ideas were exchanged that are outside the scope of this article. But one important outcome was that the scientists plan to issue a paper analyzing the NIA and UW studies together.

For most members of LivingTheCRWay.com, the studies made little difference. Every day, we experience extraordinary results that would be common for people of much younger ages. But for millions who are influenced by headlines, the negative stories discouraged them from finding out how calorie restriction might help them live better and possibly longer.

In April 2014, the Wisconsin scientists' paper titled "Caloric restriction reduces age-related and all-cause mortality in rhesus monkeys," was published.

The researchers acknowledge that their data contrasts with findings in the widely reported 2012 National Institute on Aging study; however, they emphasize an important point that Ben Best identified: The NIA <u>control</u> monkeys were effectively practicing modest calorie restriction because their food allotments were well controlled.

The CR Way™

If you are considering starting a calorie-restricted diet, the Wisconsin research results should be encouraging: All the monkeys in the study were adults, suggesting that you can start a calorie-restricted diet now and reap significant benefits. In fact, the study includes a helpful statistical analysis, indicating that the control animals had **2.9 times** greater **rate of death** from age-related causes than the calorie-restricted animals.

Modest calorie restriction resonates with the CR WayTM. The days are gone when human calorie restrictors practiced draconian diets that produced extremely low body weights. The CR WayTM changed that. It takes advantage of the latest scientific research, showing that activation of longevity cell signals is the important factor for slowing aging. As the rhesus monkey studies confirm, this may be as simple as keeping calorie intake moderate and choosing nutrient-dense foods. Regular moderate exercise and maintaining a happy approach to life are also important.

The Wisconsin study results support the findings of the extensive human study of elderly Okinawans who followed "modest" calorie restriction for 60 years, limiting calories by only 11%. Their average life span is the longest recorded in the world. They also experience less heart disease, cancer, diabetes, and Alzheimer's disease. Their quality of life is better too.

Many Okinawans who practice calorie restriction remain active well into their 90s and beyond.6

We see similar results among LivingTheCRWay. com members. The CR WayTM encourages moderate calorie restriction, which improves quality of life and is easy to follow.

Summary

Interestingly, both the University of Wisconsin and National Institute of Aging studies indicate that greatly extended life span may be possible from moderating calorie intake. For example, five monkeys in the NIA study—four calorie-restricted and one (mildly calorie-restricted) control monkey—lived exceptionally long lives, beyond 40 years of age, when the average age of death of monkeys in captivity is 26. Following a CR WayTM-type lifestyle has produced supercentenarians, such as the famed Jiroemon Kimura, who ate small meals, didn't smoke, and exercised by farming for 25 of his elder years, and is verified as the longest-lived (116 years) man in history.7

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

Paul McGlothin and Meredith Averill are co-authors of The CR Way™ (HarperCollins, 2008) and they lead The CR Way™ Longevity Center. To learn more about the CR Way™ or the CR Society International, visit www.LivingTheCR Way.com or www.CRSociety.com

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Calorie Restriction Extends Life Span

- A controversial 2012 study from the National Institute on Aging found no survival benefit from calorie restriction in their rhesus monkey research.
- But results from the University of Wisconsin's long-term study of calorie restriction in rhesus monkeys found a significant survival benefit for calorierestricted monkeys when compared to the non-calorie-restricted controls.
- In the May edition of Life Extension® magazine, writer Ben Best analyzed the differences between the two studies that would likely account for such findings: The UW control monkeys could eat whenever they wanted (representing a typical human diet), whereas the NIA control monkeys received a standard allotment of food, which actually restricted their calories.
- The UW study indicates that the control animals had 2.9 times greater rate of death from age-related causes than the calorie-restricted animals.
- The CR Way™ encourages moderate calorie restriction, which improves quality of life and is easy to follow.



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Reference

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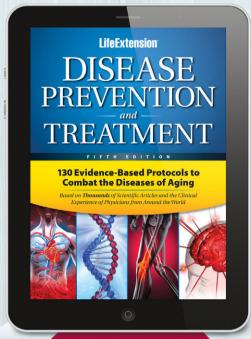


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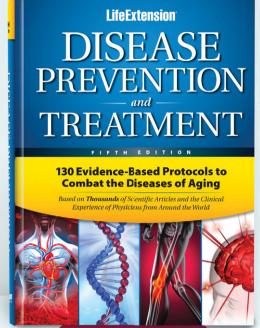
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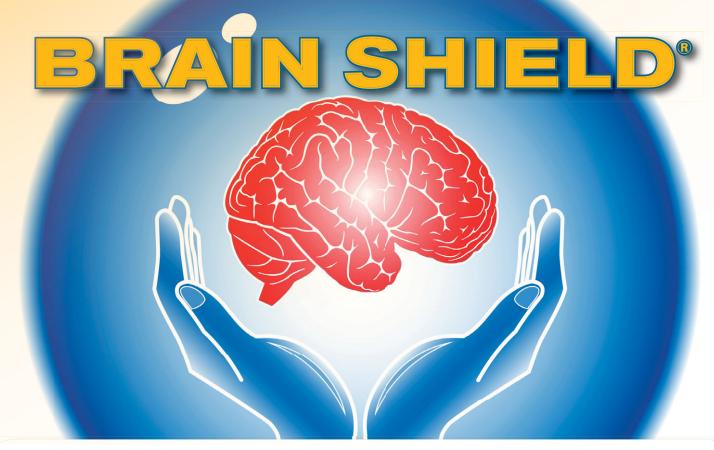
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SUPPORT for COGNITIVE FUNCTION with AGING

Your brain is under constant onslaught from environmental and stress-related challenges, as well as normal aging processes.^{1,2}

Fortunately, our brain cells have built-in, self-healing systems that provide natural defenses against these ongoing threats.³ Even more remarkable, molecular science is revealing that the human brain has the capacity to *preserve* the neurons involved in brain remodeling (plasticity).3

Scientists in China and Singapore have found that **gastrodin**, a compound typically derived from a traditional Chinese orchid (Gastrodia elata), provides powerful support for the brain's normal defenses and regenerative mechanisms.⁴⁷

To make these benefits available to members, **Life Extension**® introduces **Brain Shield**®, providing **300 mg** of **gastrodin** in each capsule for *maximum* brain support.

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Recent studies confirm that the **gastrodin** in **Brain Shield**® is one of the most powerful compounds for supporting healthy brain function at any age! Gastrodin works by the following mechanisms:

- To retain normal function, the aging brain relies on adequate **blood flow** to get sufficient oxygen and fuel.8 It has been repeatedly shown that formulas containing gastrodin beneficially support normal, healthy levels of brain blood flow in both animals and in humans.6,7
- The body maintains a delicate balance of **neurotransmitters**, such as GABA, which is of tremendous importance to healthy brain function. Studies show that alone or in combination the active compound **gastrodin** helps maintain healthy levels of vital neurotransmitters in those whose levels are already within the normal range.9-11

- With aging, short-term memory function is often impaired. Studies show that **gastrodin** helps support the healthy body's normal defenses against the mild memory problems associated with aging.¹²
- Scientists have shown that the breakdown metabolites of **gastrodin** help provide support against the normal stress and tension of daily life. 13,14
- And Brain Shield® helps alleviate the occasional cranial pain associated with daily life.15

Brain Shield® supports healthy cognitive and circulatory function in aging individuals.

Those seeking maximum benefit should start with one 300 mg capsule of Brain Shield® taken twice daily.16 After 30 days, one **Brain Shield**® (gastrodin) capsule daily may be sufficient based upon the experience of gastrodin as an over-the-counter (OTC) pharmaceutical agent. Those taking Cognitex® are obtaining 50 mg of gastrodin in the daily dose along with complementary nutrients. As additional research continues on gastrodin, better clarification on optimal dosing for a wide range of neurovascular and neuro-inflammatory conditions should be available.



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A bottle of 60 **300 mg** vegetarian capsules of **Brain Shield**® retails for \$33. If a member buys four bottles, the price is reduced to \$22.50 per bottle.

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Broad-Spectrum Disease-Fighting Properties Of TART CHERRIES

Scientists at the annual meeting of the American College of Sports Medicine concluded that **tart cherries** provide impressive **anti-inflammatory** activity in comparison to most other foods.¹

The main ingredient responsible for their potency are *anthocyanins*, a special class of flavonoids that provides tart cherries with their characteristic pigmentation and diverse health benefits.²

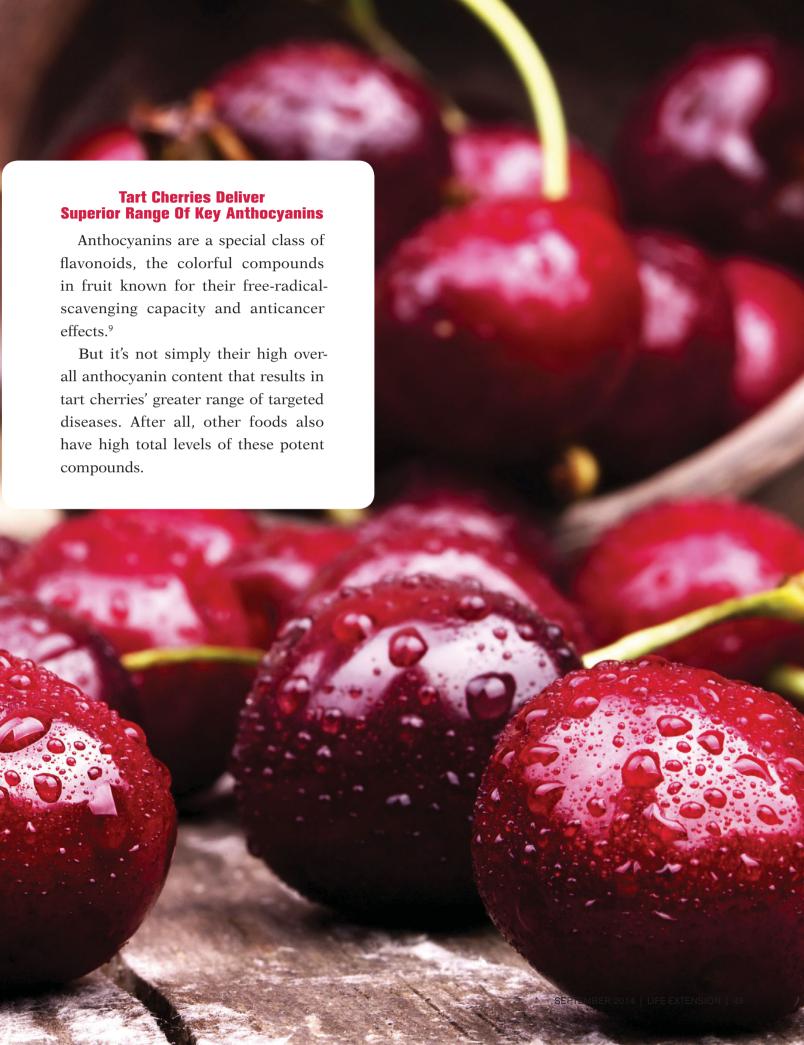
Every anthocyanin-rich food has its distinct set of *anthocyanins*, *flavanols*, and other *polyphenols*.³ And for that reason, each of these foods helps protect against a unique set of—but not all—diseases.

Compared to bilberries, blueberries, and cranberries, tart cherries contain a very broad range of anthocyanins.^{4,5} As a result, they target a much wider spectrum of inflammation-induced diseases, including diabetes, arthritis, heart disease, Alzheimer's, and more.⁶⁻⁹

In addition, tart cherry compounds have been shown to increase the activity of the body's key antioxidant enzyme, *superoxide* dismutase (SOD).¹⁰

In this article, you'll learn how tart cherries *block* inflammatory factors in a range of degenerative diseases!⁶⁻⁹





The secret to tart cherries' broad disease protection is the wide variety of key anthocyanins and other powerful phytonutrients, 4,5 all of which work together to provide greater potency.¹¹

In addition, tart cherries offer anthocyanins not found in many other deeply colored fruits.⁵

In fact, when scientists compared the components of tart cherries to those in other anthocyaninrich fruits, they found that tart cherries were the only fruit that contained every single anthocyanin for which they tested.4

When they tested a variety of fruits for six specific anthocyanins (including cyanidin and peonidin), they found that apples contained one, strawberries contained two, and grapes contained three—but only tart cherries contained all six key anthocyanins.4

When they further tested these and other anthocvanin-rich fruits for three key flavonols (such as quercetin and kaempferol), once again, tart cherries were the only fruits found to contain all three flavonols.4

Similarly, when they tested several anthocyaninrich fruits for nine other potent natural compounds including polyphenols, tart cherries were the only fruit shown to contain all nine.4

Although these represent just a few of a long list of phytochemicals found in foods, this comparison illustrates that tart cherries don't simply have a high anthocyanin content—they have a wider range of anthocyanins and other phytochemicals, which offers broader protection against disease.

Let's now look at how this impressive range of anthocyanins in tart cherries work together to fight against some key chronic conditions.

Inhibit Cancer's Origins

Tart cherries' array of anthocyanins promotes broad protection against cancer, the second leading cause of death in the US.12

When scientists conducted a thorough review of past studies, they concluded that cherries exert a variety of potent anticarcinogenic effects.6

A tart cherry diet fed to mice significantly inhibited both the number and size of adenomas (benign tumors) of the *cecum*, ¹³ an area at the beginning of the large intestine that is a common colon cancer site.¹⁴ In the same study, tart cherry anthocyanins reduced the growth of human colon cancer cell lines. 13

Cyanidin, a flavonoid in cherries, has been shown to inhibit colonic carcinogenesis in animal models.¹⁵

All of these anticancer benefits derive from tart cherries' ability to battle cancer via several distinct mechanisms.

Studies demonstrated that the anthocyanins in tart cherry naturally switch off genes that can promote cancer. These include genes that activate cell proliferation and inflammation as well as genes that promote angiogenesis, the growth of new blood vessels that nourish a tumor. 9,16,17

Tart cherry anthocyanins can also trigger apoptosis, the programmed cell death that causes precancerous cells to self-destruct. 16,18



Reverse Cardiovascular Risk Factors

The risk of developing atherosclerosis and other cardiovascular diseases is much greater among those with elevated readings of low-density lipoprotein (LDL) cholesterol.19

Fortunately, evidence demonstrates that tart cherries reverse some of the most prominent risk factors for cardiovascular disease, including high cholesterol, high triglycerides,²⁰ and excess weight.

Tart cherries are also able to calm inflammation at critical body sites—such as the belly and heart—that are specifically linked to heart disease risk.²¹⁻²³

As a result, mice given tart cherry powder experienced a 26% decrease in cholesterol and a 65% reduction in early death, believed to be due to improved cardiovascular health.21

In human studies, consuming just 8 ounces daily of tart cherry juice for four weeks was found to lower triglyceride levels by an average of over 17%.24

The ability of tart cherries to safely reverse these prominent risk factors for cardiovascular disease is especially important considering that the standard medical therapies, such as cholesterol-lowering statins or fibrates, involve risks ranging from myalgia to liver dysfunction to rhabdomyolysis, a condition in which damaged skeletal muscle is broken down, sometimes resulting in kidney failure. 25,26

Protect Against Oxidative Stress

Oxidative stress, combined with aging, can cause some nerve cells in certain regions of the brain to die. This process contributes to neurodegenerative disorders such as Alzheimer's, 27 Parkinson's, 28 and Huntington's²⁹ diseases, as well as amyotrophic lateral sclerosis (ALS or Lou Gehrig's disease) and general cognitive decline.²⁷

One of the best ways to battle against these diseases is to fight the oxidative stress that underlies those conditions—and that's exactly what tart cherries do.

Tart cherries are rich in flavonoids (such as anthocyanins)² and researchers found that flavonoids have strong neuroprotective activity—specifically against cell-damaging oxidative stress.²⁷

However, although both sweet and tart cherries provide broad benefits against multiple degenerative diseases, 9,30,31 tart cherries contain higher concentrations of anthocyanins that protect neurons from dangerous oxidative stress.31

Scientists concluded that tart cherries' rich phenolic content-including its highly diverse supply of anthocyanins—was responsible for this enhanced neuron defense, which they described as "strong antineurodegenerative activity."31



What You Need To Know

Tart Cherries Offer Potent Protection

- Free-radical-induced inflammatory molecules are key contributors to the onset of diabetes, arthritis, obesity, heart disease, Alzheimer's, and cancer-virtually all degenerative diseases.
- Scientists have found a nutrient that both quenches free radicals and delivers an unrivaled, direct inflammomodulatory effect.
- Researchers have stated that tart cherries "have the highest antioxidant and anti-inflammatory content of any food." Also, tart cherry compounds increase the activity of superoxide dismutase (SOD), your body's key antioxidant enzyme.
- While tart cherries owe their potency in part to high anthocyanin content, their real secret is their extremely broad range of anthocyanins. As a result, tart cherries synergistically target a remarkably wide spectrum of oxidation- and inflammationinduced diseases.

Inhibit Early Development Of Diabetes

Remarkable evidence indicates that tart cherries' broad variety of anthocyanins may reverse elements involved in metabolic syndrome, a condition that often precedes the development of type II diabetes.³²

Metabolic syndrome is a collection of conditions that includes high triglycerides, high blood pressure. high fasting blood sugar, abnormal lipid profiles, and excess weight.33 In addition to raising your risk of diabetes, it can also increase the risk of heart disease and stroke.34

When obesity-prone rats were fed a diet partly comprised of whole tart cherry powder, various components of metabolic syndrome were substantially decreased—after 90 days. For example, the compounds in tart cherries reduced fat mass, weight around the abdomen, elevated blood lipids, expression of inflammation markers and tumor necrosis factor, and exerted other beneficial metabolic changes.³²

The research team concluded that, "Tart cherries may reduce the degree or trajectory of metabolic syndrome, thereby reducing risk for the development of type II diabetes and heart disease."32

Tart Cherry Juice Versus Extract

Many of the studies cited in this article use tart cherry juice. However, many people prefer to use a tart cherry extract to avoid the high calories and sugar content in tart cherry juice. For the purposes of comparison, two vegetarian capsules (1,231 mg) of the leading tart cherry extract are the equivalent to approximately 45 ounces of tart cherry juice.76



Safely Lower Arthritic Inflammation

At some point in their lives, almost half of all Americans will develop symptomatic osteoarthritis,³⁵ a chronic condition characterized by a breakdown of joint cartilage that results in serious pain and injury. 36,37

One of the most commonly used osteoarthritis pain medications³⁸—acetaminophen—does not effectively lower inflammation,³⁹ and its adverse effects can include liver or kidney damage.40

Tart cherries, however, have been shown to safely protect against the devastating pain and dysfunction of osteoarthritis by targeting the underlying inflammation.41-43

In a pilot study, scientists gave tart cherries in pill form to patients with osteoarthritis of the knee. After just eight weeks, over 50% of patients experienced a significant improvement in both pain and function.⁴¹

Researchers then conducted a double-blind, randomized, placebo-controlled trial on patients suffering from inflammatory osteoarthritis—a condition involving sudden signs of inflammation such as redness, pain, and swelling. They measured the impact of tart cherry on serum inflammatory biomarkers.⁴²

This trial included 20 female participants between 40 and 70 years old who experienced at least moderate osteoarthritis pain. They consumed two 10.5-ounce bottles of either tart cherry juice or a control beverage every day for three weeks. The patients who consumed the tart cherry juice experienced a significant decrease in inflammation, shown by reduced C-reactive protein (CRP) levels.

These results underscore the capacity of tart cherry juice to provide osteoarthritis patients with potent antioxidant and anti-inflammatory activity without the adverse effects and risks of traditional arthritis medications.

Inhibit The Inflammatory Pathway Of Gout

Gout is another type of inflammatory arthritis that is caused by high concentrations of uric acid in the body44 and is associated with higher risks of cardiovascular disease and mortality.20

Drugs such as allopurinol and probenecid are typically used to help reduce uric acid levels, but the side effects can include breathing difficulties, unusual bleeding, vomiting, nausea, severe rash—and even death.45-47 These drugs may also interfere with other medications.48,49

Fortunately for gout sufferers, cherries have been shown to safely and naturally prevent the underlying factors involved in gout.50,51

Researchers first proposed cherries as a gout inhibitor in 1950. A preliminary study showed daily cherry



Tart Cherries' Comprehensive Phytonutrient Profile
Here's how some other sample fruits match up alongside cherries' broad-spectrum phytonutrient composition.⁴

Natural Compound	Cherries	Strawberries	Grapes (black/red)	Apples
ANTHOCYANINS/ ANTHOCYANIDINS				
Cyanidin	✓	✓	✓	✓
Cyanidin 3-glucosylrutinoside (anthocyanin 1)	✓			
Cyanidin 3-rutinoside (anthocyanin 2)	✓	✓		
Cyanidin sophoroside	✓			
Peonidin	✓		✓	
Peonidin 3-glucoside	✓		✓	
FLAVANOLS				
Epicatechin	✓		✓	✓
Catechin	✓	✓	✓	✓
Procyanidins (B1, B2 or B3)	✓	✓	✓	✓
FLAVONOLS				
Quercetin	✓	✓	✓	✓
Kaempferol	✓	✓		
Isorhamnetin	✓		✓	✓
OTHER POLYPHENOLS AND OTHER NATURAL COMPOUNDS				
Chlorogenic acid	✓	✓	✓	✓
Neochlorogenic acid	✓		✓	✓
3-coumaroylquinic acid	✓			✓
Melatonin	✓	✓	✓	
Perillyl alcohol	✓			
p-coumaric acid	✓	✓	✓	✓
Gallic acid	✓	✓	✓	✓
D-glucaric acid	✓		✓	✓
Ellagic acid	✓	✓	✓	

consumption relieved gout attacks and reduced serum uric acid levels.⁵² Since then, several studies have further established this defense.^{50,51}

Scientists at the USDA's ARS Western Human Nutrition Research Center at the University of California, Davis; ARS Arkansas Children's Nutrition Center, Little Rock; and Department of Pomology, University of California, Davis, gave healthy women between 20 and 40 years old **280 grams** of cherries following an overnight fast. Over the next five hours, the participants' **uric acid** levels dropped by **14.5%**, and their *C-reactive protein* levels also decreased. No significant reductions in any of these levels were observed with similar doses of grapes, strawberries, or kiwifruit. The researchers concluded that the wide variety of compounds such as anthocyanins in cherries inhibited the inflammatory pathways of gout. 50

With the knowledge that cherries are able to inhibit the onset of gout, scientists at Boston University set out to determine if cherry extract could reduce the *recurrence* of gout attacks. When they gave a cherry extract to 633 gout sufferers, they found that cherry extract reduced the risk of attacks by **45%**. And when cherry intake was combined with the drug *allopurinol*, gout attacks were decreased by **75%** compared to no intervention.⁵¹

Put The Brakes On Age-Related Muscle Loss

The anti-inflammatory effects of tart cherries prompted investigations into their potential to lower muscle pain, protect muscle strength, and accelerate muscle repair. This is especially important for aging individuals who experience loss of muscle mass and strength (*sarcopenia*).



Choosing The Right Type Of Cherry

Not all cherries provide the full antioxidant and anti-inflammatory punch that scientists have described as "the highest antioxidant and anti-inflammatory content of *any* food."

The two cultivated varieties of cherry are the sweet cherry (*Prunus avium L.*), sometimes known as the wild cherry, and the tart cherry (*Prunus cerasus L.*), sometimes known as sour cherry or pie cherry.

They don't deliver the same type or the same amounts of their potent compounds.

All cherries provide substantial quantities of antioxidants and other nutrients. But compared to their sweet cousins, **tart** cherries provide:

- Less sugar and fewer calories than sweet cherries.
- Much higher content of various anthocyanins.^{5,31}
- Twice the level of various phenolic compounds and greater levels of other nutrients.³¹
- Compounds that increase the activity of superoxide dismutase (SOD), the body's key antioxidant enzyme.¹⁰
- Powerful antioxidant and anti-inflammatory effects when compared to other foods.¹
- A superior range of anthocyanins and other phytonutrients.⁴

Due to their superior anthocyanin and phenolic matrix, tart cherries may help reduce the risk of osteoarthritis, gout, cardiovascular disease, metabolic syndrome, diabetes, and neurodegenerative diseases such as Parkinson's and Alzheimer's. 6-9

But keep in mind that tart cherries are not the cherries you're likely to see at the grocery store, which will almost certainly be sweet cherries. The potent but less common tart cherries are chiefly used for baking and usually come frozen, canned, dried, or juiced. Tart cherries may occasionally be located at a farmer's market.

Fortunately, standardized extracts of tart cherries are available so you can take advantage of the latest scientific findings regarding tart cherries and their potent health benefits.



In one study, runners who drank 710 mL of tart cherry juice—providing at least 80 mg of various anthocyanins-daily for one week prior to and during a 24-hour relay race experienced substantially less post-race pain, compared to controls.⁵³

Another group of runners who drank tart cherry juice daily from five days before until two days after a marathon had significantly reduced inflammation markers (interleukin-6 and C-reactive protein) compared to controls. They also recovered isometric strength faster.54

Also, in young men who normally never exercised, drinking 12 ounces of tart cherry juice twice daily for eight days resulted in only a 4% decrease of arm strength after repeated arm exercises—compared to a strength decrease of 22% in controls.55

Scientists then conducted a trial on 10 men to assess muscle-repair potential. Initially, each participant conducted an intensive leg exercise on one leg only. Then, the exercise was repeated on the other leg after two weeks. For seven days before and 48 hours after exercise, participants consumed 1 ounce of tart cherry drink or placebo twice daily. Faster recovery of the knee extension (maximum voluntary contraction force) was observed with the tart cherry juice protocol versus control-which researchers believed was due to attenuation of oxidative damage.56

These studies confirm that tart cherries deliver significant muscle-protecting benefits.

Unparalleled Protection And Anti-Inflammatory Potency

There are multiple elements behind tart cherries' proven superiority at targeting the underlying oxidative and inflammatory origins of disease. Recent evidence indicates that anthocyanin-rich tart cherries exert their effects in 15 different ways. Tart cherries have been shown to:

- 1. Enhance the body's own endogenous antioxidants.65
- 2. Beneficially inhibit certain enzymes^{5,66} while boosting others.7,67,68
- 3. Provide compounds that increase the activity of the body's antioxidant enzyme, superoxide dismutase (SOD).10
- 4. Deliver a higher content of anthocyanins than sweet cherries.^{2,5,31}
- 5. Contain a wider range of anthocyanins,4 including some not found in other berries.5
- 6. Deliver over 20 richly bioactive antioxidants.4,10
- 7. Provide an abundance of phenolic compounds-such as gallic acid, p-coumaric acid, kaempferol, and quercetin-that are both antioxidant and inflammomodulatory chemicals.10
- 8. Contain cyanidin, which forms cyanidin-DNA complexes that make DNA more resistant to oxidative damage. 69,70
- 9. Modulate inflammatory cell-signaling molecules such as tumor necrosis factor.32
- 10. Decrease levels of C-reactive protein (CRP), uric acid, and nitric oxide. 50
- 11. Strongly inhibit inflammatory diseases^{71,72} and inflammatory pain.73
- 12. Reduce early mortality in animal studies.²¹
- 13. Switch on cancer defenses. 6,13,74
- 14. Reduce blood glucose.75
- 15. Decrease levels of cholesterol and triglycerides.21,24

With so many beneficial activities, it's no wonder that tart cherries have been shown to have a superior ability1 to protect against the full range of conditions associated with oxidative stress-induced inflammation-including cancer, cardiovascular disease, metabolic syndrome, and Alzheimer's disease.6-9

Summary

Inflammatory molecules contribute to the onset of diabetes, arthritis, obesity, heart disease, Alzheimer's, and cancer—virtually every degenerative disease. 57-64

Tart cherries deliver an unrivaled, direct inflammomodulatory effect. In fact, some scientists have stated that tart cherries "have the highest antioxidant and anti-inflammatory content of any food" and they also increase the activity of your body's key antioxidant enzyme, superoxide dismutase (SOD)!65

Tart cherries have high anthocyanin content. But the real secret to their effectiveness against many inflammatory diseases is their broad range of anthocvanins.4 As a result, tart cherries synergistically target a remarkably wide spectrum of oxidation- and inflammation-induced diseases.

Tart cherries allow aging individuals to block an extremely wide range of degenerative diseases—at their oxidative-inflammatory root!

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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Reishi Mushroom

Boosts Immune Vitality

Reishi mushroom, a medicinal mushroom used for centuries in traditional Chinese medicine, was known as "the mushroom of immortality." Science has now confirmed what the ancients knew— **Reishi** boosts immune vitality. Its broad-spectrum benefits have been demonstrated in thousands of studies.²

Reishi supports a healthy immune system. An abundance of evidence demonstrates that **Reishi** mushroom <u>enhances</u> the protective activity of the body's crucial immune factors.³⁻¹⁰ The **Reishi** mushroom also supports the body's production of antioxidant enzymes— such as *superoxide dismutase* (SOD), *catalase*, and *glutathione*— which, in turn, support the body's natural immune defenses against free radical damage!^{11,12}

Reishi Extract Mushroom Complex delivers powerful compounds thanks to an advanced extraction technology. This *full-spectrum* **Reishi** extract has multiple components that have been shown to support healthy immune function and enhanced longevity in an experimental aging model.¹³

The suggested <u>two</u> vegetarian capsules a day of Reishi Extract Mushroom Complex provide:

Reishi mushroom (Ganoderma lucidum) extract (Fruit body) [standardized to 13.5% polysaccharides (132.3 mg) and 6% triterpenes (58.8 mg)]

Shell-broken Reishi mushroom (Ganoderma lucidum) spore

A bottle containing 60 vegetarian capsules of **Reishi Extract Mushroom Complex** retails for **\$30**. If a member buys four bottles, the price is reduced to **\$20.25**.

STANDARDIZED **TART CHERRY** EXTRACT

Powerful Support For Muscles And Exercise Recovery

Tart cherries are packed with unique compounds that have been shown to block the COX-1 and COX-2 inflammatory enzymes. The benefits of tart cherry include rapid muscle recovery after exercise and fast relief from the minor aches, discomfort, and stiffness that can follow everyday muscle exertion. The state of the compound of the c

Clinically Proven

In human studies, researchers have scientifically confirmed the muscle-supporting benefits of tart cherries. For example, a randomized controlled trial found that consuming tart cherry juice twice daily produced a substantial decrease in muscle symptoms related to exercise. In the same study, the exercise-induced loss of strength over the four days following a workout was reduced from 22% to only 4%.⁴

Anthocyanins

Anthocyanins are powerful flavonoids that provide the dark pigmentation in blueberries, raspberries, and bilberries.^{5,6} What has drawn the attention of scientists is that tart cherries contain a higher content of anthocyanins than other fruits.¹

Anthocyanins have been extensively studied for their numerous advantages that include heart, cellular, and cognitive health. 6-8

Life Extension® now offers 100%
natural Tart Cherry Extract, a supplement that opens the door to the remarkable benefits of continued physical activity—at any age! This formulation provides all the muscle-supporting benefits of tart cherries and mimics the anthocyanin dose used in successful clinical trials by providing a standardized 40 mg dose of anthocyanins in each capsule.^{2,4}

The serving size of one vegetarian capsule of Tart Cherry Extract with Standardized CherryPURE® contains:

CherryPURE® Tart cherry (*Prunus cerasus*) **extract** (skin) **615.5** mg [std to 6.5% anthocyanins (40 mg)]

A bottle of 60 vegetarian capsules of **Tart Cherry Extract with Standardized CherryPURE®** retails for \$22. If a member buys four bottles, the price is reduced to **\$15** per bottle.

CherryPURE® is a registered trademark of Shoreline Fruit, LLC.



Item #01723

To order Tart Cherry Extract with Standardized CherryPURE®, call 1-800-544-4440 or visit www.LifeExtension.com

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QUERCETIN'S Unique PROTECTIVE MECHANISMS

In our quest to identify cutting-edge therapies to protect against age-related disorders, we sometimes overlook the basics.

Found in certain fruits and vegetables, **quercetin** has been studied for decades and evidence supporting its biological properties is substantial.

Recent lab and human studies are confirming that **quercetin** can prevent many of the underlying factors that are destructive to our health. These deleterious biological events are often unnoticed by medical doctors until they manifest as major diseases.

Quercetin fits nicely into a broad-based anti-aging strategy and has long been included in nutrient formulas used by health-conscious individuals.



Protecting Hardworking Heart Muscle

People with high intakes of dietary flavonols and flavones such as quercetin have a demonstrably lower risk for cardiovascular diseases.^{1,2} Exciting new research suggests that a big part of the reason for this protection is quercetin's effects on mitochondria.

Proof of the impact of quercetin's mitochondrial "boost" can be seen in a pair of animal and human exercise studies. Untrained mice supplemented with quercetin for seven days increased both their maximal endurance capacity on a

treadmill and their voluntary use of the treadmill, while biopsies showed formation of new mitochondria in their muscles and brains.3

In the companion human trial, untrained volunteers took 500 mg/day of quercetin, or placebo, for seven days, with their exercise performance measured before and after the trial period.4 Subjects taking quercetin modestly increased their oxygen consumption by 3.9%, but increased their riding time to fatigue by 13.2%, entirely without additional training!

In a similar trial, untrained young men who took 1,000 mg/day of guercetin for two weeks also increased the distance they could run on a treadmill by 2.9%. while placebo subjects lost 1.2%; muscle mitochondrial numbers grew by 4.1% in supplemented subjects. while falling 6% in placebo recipients.⁵

Plaque Regression

Ouercetin has been analyzed for its ability to counteract atherosclerosis—the gradual blockage of blood flow through arteries. Atherosclerotic plaques are a major cause of heart attack and stroke, two of the top killers of Americans.

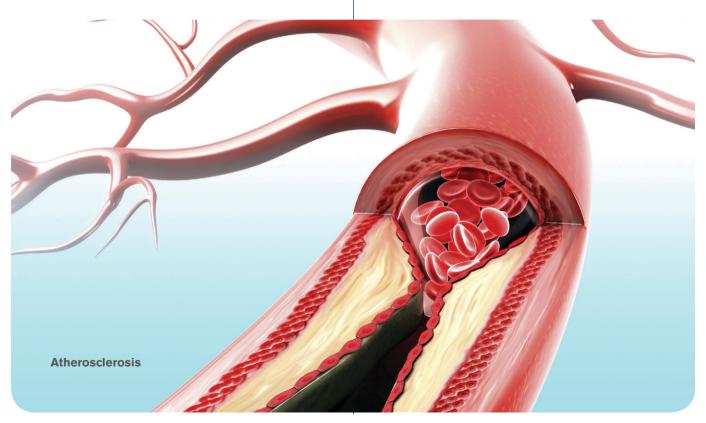
In a study of rabbits fed a high-cholesterol diet, quercetin prevented the oxidative and inflammatory effects of the diet on arterial walls, as expected. But it also promoted regression of atherosclerotic plaque, a direct effect of its inhibition of inflammatory enzymes such as COX and 5-LOX (these enzymes produce proinflammatory molecules called prostaglandins and leukotrienes).6

This plaque regression is likely driven by a recently discovered property of quercetin. Scientists found that quercetin triggers reverse cholesterol transport, which is the removal of cholesterol from the arterial wall by **HDL** for transport to the liver for safe disposal.7-9

Ouercetin has additional benefits for the endothe**lial cells** lining the blood vessels that normally control blood flow and pressure. Quercetin restores normal production of the relaxation-signaling molecule *nitric* oxide, and has been shown to produce relaxation of major arteries to promote improved blood flow. 10-12 This played out in an impressive fashion in a human study showing that a quercetin-containing food improved after-meal endothelial function by 31.4%.13

New data on quercetin's many cardiovascular benefits are being published regularly. Here are just a few highlights from the recent literature:

- Quercetin counteracts the development of tolerance to nitroglycerin and related drugs used in treatment of angina.14
- Quercetin reduces abnormal heart rhythms in patients with ischemic heart disease who were already on standard medical therapy.¹⁵
- Ouercetin reduces the incidence of abdominal aortic aneurysms in animal models; these deadly defects in the wall of the aorta can lead to sudden death.16
- Quercetin helps to slow platelet aggregation, which can lead to blood clots that produce heart attacks and strokes. 17,18



Potent Neuroprotection

Like the heart, the human brain is a major consumer of energy. That means it depends heavily upon its mitochondria to deliver the power needed for normal thought, memory, and cognition. Aging reduces mitochondrial function in the brain, mainly as a result of the strong oxidant impact of electrical and chemical activity.19

Quercetin is showing real promise as a neuroprotective nutrient. Studies show that guercetin protects brain cells against excitotoxicity, the damage done by repeated excitatory electrical impulses observed in Alzheimer's and other neurodegenerative diseases.²⁰⁻²³ Acting through its antioxidant mechanisms, quercetin may reduce toxicity of the dangerous and abnormal amyloid-beta proteins that accumulate in the brain, eventually producing symptoms of memory loss and dementia.²⁴ In fact, quercetin has now been found to prevent brain cell death in animal models of Parkinson's disease.25

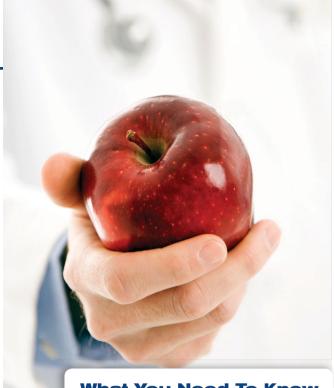
Excitingly, quercetin has been found to activate the brain's powerful natural antioxidant defense system (called Nrf2) that upgrades cellular defenses such as glutathione and prevents brain cell death.26 Quercetin also increases brain mitochondrial expression of the protective paraoxonase 2 (PON2), which scavenges the free radicals that break down mitochondrial membranes and cause them to lose their electrical potential.27-29

Chronic oxidation leads to chronic inflammation in the brain as it does in the rest of the body, eventually producing changes that can lead to both Alzheimer's and Parkinson's diseases.³⁰ Quercetin is among the nutrient molecules capable of preserving vital brain cell function in the face of those changes, limiting the cell death that produces neurodegenerative diseases.³¹

Obesity And Metabolic Syndrome

Obesity is best thought of in relation to other metabolic disturbances, such as blood lipid abnormalities, elevated blood sugar, insulin resistance, and hypertension. Together, these problems define metabolic syndrome, which is strongly associated with poor health outcomes and sudden death.^{32,33} A prospective study assessing the mortality status of 6,678 healthy middle-aged men concluded that metabolic syndrome increased the risk of sudden death from heart attack by 68%.33

It is widely recognized that plant flavonoids, especially quercetin, can play important roles in fighting individual components of metabolic syndrome, and may work to reduce the impact of the syndrome as a whole.34,35 In a laboratory animal model, quercetin



What You Need To Know

Quercetin Can Restore And Refurbish Mitochondria

- Studies show that quercetin triggers reverse cholesterol transport, which results in the removal of cholesterol from the arterial wall by HDL for transport to the liver for safe disposal.
- Excitingly, quercetin has been found to activate the brain's powerful natural antioxidant defense system (called Nrf2) that upgrades cellular defenses such as glutathione and prevents brain cell death.
- As a neuroprotective agent, guerceting protects brain cells against excitotoxicity, the damage done by repeated excitatory electrical impulses observed in Alzheimer's and other neurodegenerative diseases.
- Quercetin, found in onions and apples, has now been shown to preserve mitochondria in the heart, brain, liver, and skeletal muscles.
- Quercetin boosts cardiovascular function, muscular endurance and performance, protects against loss of brain cells, corrects blood glucose and lipid abnormalities in metabolic syndrome, and shows evidence of anticancer and bone health-promoting properties.

completely abolished glucose-induced life span reduction by enhancing natural cellular "clean-up" mechanisms that prevented loss of function.³⁶

Lab studies show that quercetin is effective at suppressing fat accumulation in the liver,³⁷ leading to a reduction in fat-induced inflammation triggered by high levels of *leptin*, the hormone produced in excess in fat tissue deposits.³⁸⁻⁴¹ An eight-week study demonstrated that quercetin-rich onion skin extracts led to reduced internal fat accumulation while increasing levels of the hormone *adiponectin*, thus improving insulin sensitivity and promoting weight loss.⁴²

Increased amounts of fat tissue lead directly to insulin resistance, which produces high blood sugar while at the same time starving cells of the glucose they need for normal function.⁴³ In fact, even mild elevations of blood sugar, over a lifetime, can accelerate aging.36 In rats fed a high-fat, high-sugar diet, quercetin reduced blood sugar and insulin release, improving insulin resistance.⁴⁴ Other studies show that quercetin-supplemented rats fed a high-fat, highcarbohydrate diet had less abdominal fat, lower blood pressure, and reduced heart and liver fat accumulations, likely due to antioxidant and anti-inflammatory mechanisms.³² Similar findings were made in diabetic and insulin-resistant rats.45

But these exciting results are not limited to lab and animal studies. In a group of overweight and obese adults with early metabolic syndrome, just 150 mg of quercetin daily reduced blood pressure and levels of oxidized LDL cholesterol, two major components of metabolic syndrome.46 Another human study found that the same dose of quercetin (150 mg/day) for eight weeks decreased waist circumference and after-meal

systolic blood pressure, while also lowering after-meal triglyceride levels in a group of otherwise healthy men.35 Another study showed women with type II diabetes reduced systolic blood pressure nearly nine points after taking quercetin.⁴⁷

In other words, quercetin supplementation in animal and now in human studies proved capable of reversing the major components of metabolic syndrome.

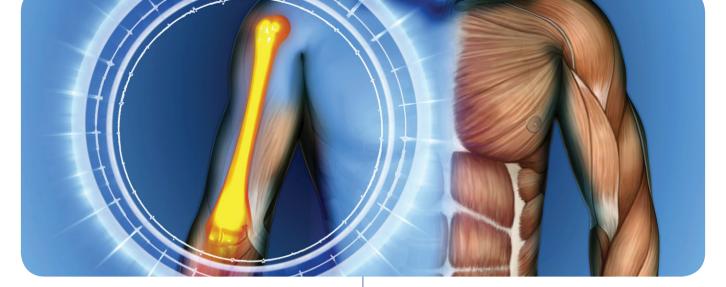
Cancer Protection From Ouercetin

Ouercetin has been shown to possess numerous anticancer properties, including the ability to interrupt the rapid cell proliferation cycle in growing cancers, and to induce apoptosis, the programmed cell death that cancer cells have lost. 48,49 Quercetin's actions appear to be cancer type- and site-specific, with its most aggressive action on the most aggressive and rapidly growing cancers of the blood (leukemia), brain, lung, uterus, and skin (melanoma).⁵⁰

Additional data suggest that quercetin is highly effective in preventing the division of colon cancer cells as well.⁵¹ Indeed, one small human study has already shown that the combination of guercetin with curcumin, another potent anti-inflammatory nutrient, can slow the growth of precancerous colonic polyps in patients with familial polyposis, a condition always associated with colorectal cancers.52

Estrogen receptors present on the surface of cells can serve as growth stimulators in many cancer types. including lung cancer.⁵³ A unique property of quercetin is its ability to modulate the activity of estrogen receptors,⁵⁴ and in a lab study, this attribute was shown to





reduce the proliferation of lung cancer cells.⁵⁵ It was also demonstrated that quercetin binds to estrogen receptors just as tightly as tamoxifen, the drug most commonly used in breast cancer therapy.⁵⁵ As a result, quercetin effectively inhibited proliferation of dangerous drug-resistant breast cancer cells, while also preventing their accumulation into lump-like clusters capable of growth and invasion.⁵⁶

Ouercetin Fights Mitochondrial Threats To Bone And Joint Health

Quercetin has powerful bone health-promoting effects, some of which were superior to the prescription anti-osteoporosis drug alendronate in preclinical research. Unlike such drugs, quercetin promotes new bone formation, rather than simply slowing bone degradation.⁵⁷⁻⁶⁰ This is important because alendronate and similar drugs act by essentially inhibiting the bone-resorbing cells⁶¹ in the hope that the boneforming cells that remain intact will predominate and keep bones strong. Quercetin, by contrast, works by stimulating new bone production by bone-forming cells, allowing bones to retain their normal responses to physical stress.62

"Secondary" osteoporosis and osteopenia (a condition where bone mineral density is lower than normal) can occur with certain diseases and drug treatments, most commonly chronic steroid use. Lab studies show that both quercetin and *alendronate* could completely reverse steroid-induced osteoporosis, but quercetin also stimulated new bone formation in rat femurs by up to 36%, while alendronate did not. 59 Very similar results were shown in animals with steroid-induced osteoporosis and osteopenia secondary to diabetes, both of which commonly cause bone loss.^{58,59}

In the management of arthritis, quercetin has demonstrated superior anti-inflammatory properties. When a group of flavonoids was studied, quercetin showed the strongest specific inhibitory effects on the pro-inflammatory enzymes COX-1 and 15-LOX, both of which produce powerful pro-inflammatory signaling molecules in arthritis.63 Recent studies suggest that guercetin may also reduce accumulation of stiff, fibrous tissue in inflamed joints, potentially improving their function.64,65

Quercetin may also be effective in ameliorating the intensely painful arthritis caused by gout, in which crystals of uric acid accumulate in the joint and induce vigorous inflammation.65 Animals with gouty arthritis showed reduced joint swelling, reduced white blood cell infiltration, lower oxidant levels, and lower levels of inflammatory cytokines following supplementation with quercetin.66

Human studies of quercetin in osteoarthritis are encouraging, especially given the lack of any known drug that can effectively modify or slow the disease's progress. Added to a standard joint supplement containing glucosamine and chondroitin, 45 mg/day of quercetin for 12 or 16 weeks significantly improved joint pain and function scores compared with placebo, while laboratory markers of new collagen formation (important in preserving joint function) were increased.67,68

Summary

Studies show that quercetin preserves and improves cardiovascular health, slows neurodegeneration, and fights metabolic syndrome. Moreover, quercetin may offer protection against cancer, osteoporosis, and osteoarthritis through its multiple beneficial mechanisms.

The beneficial effects of whole fruits and vegetables in the human diet may be partially explained by the quercetin they contain. Those who don't consume enough healthy fruits and vegetables can obtain this multi-faceted polyphenol (quercetin) in low-cost supplements. •

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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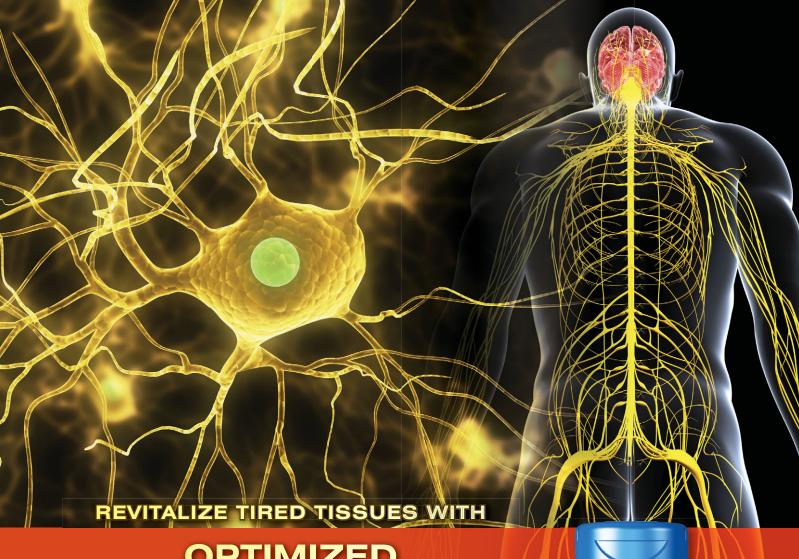
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The Surprising Longevity Benefits Of VITAMIN K

Dr. Bruce Ames is one of the world's leading authorities on aging and nutrition. Four years ago, Dr. Ames published research indicating that optimum intake of **vitamin K** plays an important role in longevity.¹

A new **2014** study on vitamin K confirms that ample vitamin K intake can indeed help you live longer.² In a group of more than 7,000 people at high risk for cardiovascular disease, people with the *highest* intake of **vitamin K** were **36%** less likely to die from *any cause at all*, compared with those having the lowest intake.

This protection even extended to those with initially low vitamin K intake who boosted their consumption during the course of the study-demonstrating that it's never too late to start gaining the benefits of vitamin K supplementation. Increasing intake conferred protection against cardiovascular death as well.²





The Many Benefits Of Vitamin K

Vitamin K was first discovered in 1935, when it was found to be an essential nutrient to prevent abnormal bleeding in chickens.8 For decades thereafter, vitamin K was identified as the "coagulation vitamin" (in fact, the initial "K" comes from the German spelling, koagulation.) During that time, it was established that vitamin K worked by activating certain proteins made in the liver that are required for normal blood clotting. Without sufficient vitamin K, blood would not clot, and severe bleeding would ensue.9,10

Vitamin K activates those blood-clotting proteins by making a small but vital chemical change in the

Risk Reduction By **Increased Vitamin K Intake** Vitamin K Condition **Risk Reduction Form** All-Cause K, 26% (Highest vs. Lowest Intake)3 Mortality All-Cause K, 36% (Highest vs. Lowest Intake)² Mortality Cancer K, 46% (Highest vs. Lowest Intake)2 Cancer. Advanced K, 63% (Highest vs. Lowest Intake)⁷ Prostate Cancer K, 28% (Highest vs. Lowest Intake)54 Death Coronary Artery K, 20% (Highest vs. Lowest Intake)30 Calcification Coronary 21% (Highest vs. Lowest Intake)66 K, **Heart Disease** Coronary 9% lower risk for each K, **Heart Disease** 10 microgram/d increased intake⁶⁷ Coronary **Heart Disease** K, 57% (Highest vs. Lowest Intake)3 Mortality 27% for having low HDL-cholesterol* Metabolic 49% for having elevated triglycerides* K, Syndrome 82% for having high blood sugar* (All Highest vs. Lowest Intake)68 Type II 7% lower risk for each K, **Diabetes** 10 microgram/d increased intake⁵ Type II 17% reduction for each K, **Diabetes** 100 microgram/d increased intake⁶ Type II 51% with increased K, intake vs. K, **Diabetes** decreased or no change in intake⁶ *Based off of odds ratios

proteins' structure, specifically on the protein building block called glutamic acid.11

By the turn of the 21st century, scientists had learned that vitamin K produces similar changes to glutamic acid molecules to activate a handful of other vital proteins in the body, with the collective name of Gla-proteins. 12-16 According to 2014 research, 16 different vitamin K-dependent Gla-proteins have been identified.¹⁷ This means that they depend on vitamin K to activate them in order to carry out their intended

With the discovery of the Gla-proteins, scientists learned that vitamin K is vital for much more than

> the healthy clotting of blood. For example, the Gla-protein in bone, called **osteocalcin**, is responsible for making sure calcium is deposited in bones, while the Gla-protein in arterial walls, called **matrix Gla protein**, prevents calcium from being deposited in arteries.18

> Insufficient blood clotting was thought to be the main sign of vitamin K deficiency. However, scientists have since learned that you can have enough vitamin K to promote healthy blood clotting, yet still not have enough vitamin K for it to activate the Gla-proteins necessary to help prevent cardiovascular disease, osteoporosis, diabetes, and cancer, all conditions in which vitamin K-dependent proteins are known to be factors. 13,14,19 Fortunately, studies show that vitamin K supplementation can significantly increase the amount of activated Glaproteins in tissues—without over-activating the clotting proteins.¹⁸

Vitamin K And Atherosclerosis

As we age, calcium that belongs in our bones begins to make its appearance in other unwanted areas, including inside the linings of major arteries.²⁰ Over time, normal smooth muscle cells in artery walls transform into bone-like cells through the deposition of calcium, essentially turning sections of artery into bony tissue that is not resilient and flexible, and does not have the ability to effectively regulate blood flow. 19,21 This process lends literal reality to the term "hardening of the arteries," which we now know as late-stage atherosclerosis.

Nature has provided a powerful inhibitor of arterial calcification in the form of matrix **Gla protein**, one of the 16 Gla-proteins activated by vitamin K. This specific Gla-protein is produced in arterial walls, but is only activated when sufficient vitamin K is present.^{3,14,15,19,22-24} In the absence of sufficient vitamin K, arterial calcification is able to continue unopposed, leading to advanced atherosclerosis and its deadly consequences, heart attacks and strokes.14,16 Indeed, in older men and women who had the highest levels of inactive matrix Gla protein (indicating low vitamin K levels), there was a nearly 3-fold increased risk of cardiovascular disease compared to those with the lowest levels.²³

Researchers have known for nearly 20 years that insufficient vitamin K intake in the diet is related to atherosclerosis in the aorta, the body's largest blood vessel.¹⁶ Since that time, a host of basic science and laboratory studies have indicated that higher vitamin K intake is essential for preventing atherosclerosis in major vessels of all kinds. Animal studies even show that vitamin K can "rescue" calcified arteries that occur as a result of the overuse of drugs that inhibit vitamin K, such as certain blood thinners. 25,26

Another way matrix Gla proteins help protect against atherosclerosis is by inhibiting the production of inflammatory signaling molecules (cytokines), which contribute to plaque formation and calcification.²⁷ People with the highest dietary intake of vitamin K have significantly lower levels of those inflammatory markers, and also of substances involved in appetite generation and insulin resistance, both of which are important in preventing atherosclerosis.²⁸ (Some of these effects may be related to increased levels of another vitamin K-dependent Gla-protein that suppresses inflammation and promotes glucose tolerance.) 29

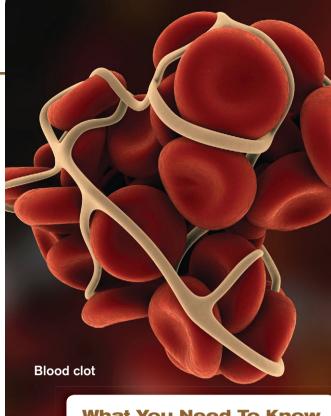
Human Studies On Vitamin K

Human studies on dietary vitamin K intake have been somewhat inconsistent, probably because of confusion about which form of the vitamin is most important.30

Vitamin K₁ (phylloquinone) is the main dietary form of the vitamin, but vitamin K, (menaquinone) has a stronger relationship to arterial calcification. 15

In one study, people with the highest intake of vitamin K, were 57% less likely to die of coronary heart disease compared with those with the lowest intake.³ In another study, women with the highest intake of vitamin K, were found to be at a 20% lower risk for coronary artery calcification compared with women with the lowest intake levels, while the same study found that vitamin K, had no significant impact.³⁰

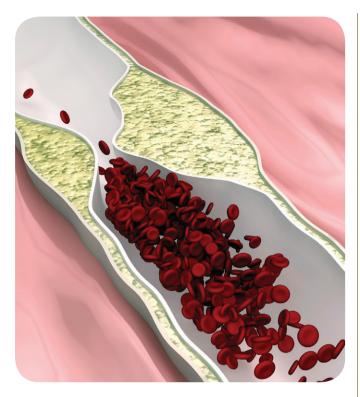
Vitamin K supplementation studies suggest that both forms of the vitamin contribute to protection



What You Need To Know

Vitamin K **Promotes Longevity**

- Once thought to be exclusively concerned with blood coagulation, vitamin K is now known to affect at least 16 Gla-proteins in the body.
- These include proteins involved in protecting arteries from calcification, those protecting bones from losing calcium, and ones that help prevent against diabetes and cancer.
- A new study demonstrated that people with higher vitamin K intakes are less likely to die from all causes, lending new urgency to the issue of supplementation.
- A multitude of studies now point to the fact that adequate vitamin K intake, including supplementation, can offer prevention against atherosclerosis, osteoporosis, diabetes, and cancer.
- Assure that your vitamin K intake is adequate by adopting a daily vitamin K supplement that provides both K, and K, for optimum coverage.



from arterial calcification in atherosclerosis, with a slight edge for vitamin K_2 . For example, when healthy men and postmenopausal women supplemented with $\bf 500$ micrograms of vitamin K_1 per day, they experienced a modest $\bf 6\%$ reduction in the progression of arterial calcification, but only in subjects with the most advanced disease at baseline. And a study using vitamin K_1 in combination with vitamin $\bf D$ and minerals demonstrated that the combined supplement could slow the loss of arterial suppleness and promote elasticity.

Similarly, supplementation with both **180** and **360 micrograms** of vitamin K₂ significantly reduced the amounts of inactivated matrix Gla protein, thereby lowering the risk of atherosclerosis with calcification; placebo recipients in that study showed no effect.³¹ In another study, a group of kidney disease patients on hemodialysis (who have a very high risk for advanced atherosclerosis with calcification) took either **135** or **360 micrograms** of vitamin K₂ Supplementation dramatically decreased the amount of inactivated matrix Gla protein by **77**% at the lower dose, and **93**% at the higher dose.³²

Intriguingly, it is now apparent that women with atherosclerosis are more likely to have lower bone mass than women without atherosclerosis. They're also more likely to have lower circulating vitamin K levels, highlighting the age-related trade-off between calcium in bones (which is desirable) and calcium in arterial walls (which is undesirable).²⁰

Vitamin K And Osteoporosis

Sufficient vitamin K is also required in order to activate the Gla-protein **osteocalcin**, which binds tightly to bone minerals to create strong bones.³³ With inadequate vitamin K, bones can't hold on to vital calcium, which leads to osteoporosis.³⁴ To make matters worse, the calcium has to go somewhere, so it enters the bloodstream, where it contributes to stiffening arteries.³³

Fortunately, supplementation with vitamin K is an effective means of protecting your bones from osteoporosis.

A study of healthy postmenopausal women between 50 and 60 years old demonstrated that three years of supplementation with 1 mg/day of vitamin K_1 , plus 8 micrograms (320 IU)/day of vitamin D together with minerals, reduced the loss of bone in the hip and spine compared both to placebo recipients and to those supplemented with vitamin D and minerals alone.³⁵

In another study, postmenopausal women with preexisting osteoporosis took **1,500 mg** of calcium carbonate and **45 mg** of vitamin K₂ or placebo each day for 48 weeks. Compared to baseline values, the women experienced an increase in spinal bone mineral density and a **55.9%** reduction in inactive osteocalcin levels, while a **9.3%** reduction occurred in the group taking only the calcium supplement.³⁶ The same dose of K₂ was later shown to maintain hip bone strength and improve the overall geometry of the femoral neck over a three-year period, while placebo recipients lost hip bone strength during that time.³⁷

Even lower doses of **180 micrograms/day** of vitamin K₂ (especially in the form of longer-lasting MK-7, which is derived from *natto* or fermented soybeans), when given for three years, increased the amount of activated osteocalcin and produced significant improvements in bone mineral content and density in the lower spine and femoral neck, while also increasing bone strength and preventing loss of height in spinal vertebrae.³⁸

Vitamin K_2 has recently been recognized by the European Food Safety Authority as having an important role in maintaining normal bone health.³⁸ When added to *alendronate*, a common anti-osteoporosis drug, vitamin K_2 significantly increased bone mineral density in the femoral neck compared with alendronate alone.³⁹

Vitamin K And Diabetes

Type II diabetics have an increased risk of bone fracture. This is likely due in part to the incomplete activation of the Gla-protein osteocalcin (caused by lack of vitamin K), and the decrease of calcium being

deposited in bone that occurs as a result.⁴⁰ Conversely, people with the highest vitamin K, intakes have reductions in inflammatory markers related to diabetes.²⁸

Vitamin K has also been found to have a direct impact on the diabetic state itself. In a group of healthy volunteers between 26 and 81 years old, higher dietary vitamin K, intake was associated with greater insulin sensitivity and lower post-meal glucose levels. 41 And in a study of older adults at high risk for cardiovascular disease, the risk of developing type II diabetes was reduced by 17% per 100 micrograms of K, intake per day.6

Another study demonstrated that both vitamins K, and K, reduced the risk of developing diabetes. However, the stronger and more significant association occurred with K,, which reduced the risk of type II diabetes by 7% for each 10-microgram increase in

In addition to reducing the risk of diabetes, vitamin K has been shown to reduce the effects of diabetes as well.

Supplementation studies in animals show that diabetic rats, like diabetic humans, develop bone mineral loss. However, when diabetic rats were supplemented with vitamin K,, not only was osteopenia prevented, hyperglycemia was prevented as well.⁴²

Human supplementation studies demonstrate that both K, and K, are effective in combating the effects of diabetes. In older, non diabetic men, three years of supplementation with 500 micrograms/day of vitamin K, produced a significant reduction in insulin resistance compared with controls.⁴³ And in a study of healthy young men, just four weeks of



supplementation with 30 mg of K, three times daily improved insulin sensitivity.44 This may have occurred as a result of an increase in the vitamin K-dependent Gla-protein osteocalcin, which has been shown in animal studies to increase insulin secretion and sensitivity.⁴⁵

Vitamin K And Cancer

Studies of vitamin K intake reveal potent preventive properties against several types of cancer, including prostate, colon, and liver cancers. 46

When prostate cancer cells in culture are treated with vitamin K₂, both those sensitive to male hormones (androgens) and those resistant to male hormones are unable to reproduce, and eventually die.⁴⁷ Vitamin K, has been associated with a **63%** lower risk of advanced prostate cancer in men with the highest intake of the nutrient. Similarly, a higher ratio of vitamin K-activated osteocalcin versus inactive osteocalcin correlates closely with reduced prostate cancer risk, demonstrating the molecular connection.⁴⁸

In human colon cancer cells, vitamin K, has been shown to induce cancer cell death by several different mechanisms and to suppress the growth of colon tumors implanted into mice. 49,50

Types Of Vitamin K

It is clear that vitamin K affects specific and vital proteins throughout the body, well beyond the blood-clotting functions originally described for the vitamin. Less clear, at least for now, are differences in impact on the human body of several different types of vitamin K.

Phylloquinone, or K₁, is the predominant source of vitamin K in the diet,55 but it becomes converted to menaquinone, or K₂, in animals, including humans.56 Vitamin K, itself has several different subtypes, based on molecular structure variations. The subtype MK-4, or menaguinone-4, predominates in animal tissues; it is the natural product of K, modification in the gastrointestinal tract.⁵⁷

It is likely that both K₁ and K₂ are necessary for overall normal vitamin K function, and it appears that supplementation with both is useful, especially for the mounting number of biological tissues other than blood clotting that rely upon adequate vitamin K. The subtype of K₂ called MK-7, menaquinone-7 has recently been shown to be more bioavailable than MK-4.58

Supplementation studies also reveal vitamin K's powerful effect on the most common kind of liver cancer, called *hepatocellular carcinoma*. This cancer is almost always associated with alcoholism or hepatitis B or C infection. ⁵¹ Although surgical or radiation treatment can destroy the primary tumor, recurrence is common and typically determines the long-term prognosis. ^{52,53} Several human studies show that vitamin K_2 supplementation can dramatically reduce the recurrence rate in *hepatocellular carcinoma* and may impact the survival rate as well. ^{52,53}

As with most nutrients, vitamin K is not the single answer to cancer prevention, but it shows tremendous promise, which highlights the importance of maintaining adequate levels through boosting your intake. A large European study showed that **cancer death** was 28% less likely overall in those with the highest versus lowest intakes of vitamin K_2 . 54

n K ₂ cer Patients ⁵³	

	Impact Of V	Vitamin K	2
Supple	ement On Live	er Cancei	Patients ⁵³

	Recurrence Rate, %		Su	rvival Rate	, %	
	12 mo	24 mo	36 mo	12 mo	24 mo	36 mo
Vitamin K ₂ 45 mcg/day	12.5	39.0	64.3	100	96.6	87.0
Controls	55.2	83.2	91.6	96.4	80.9	64.0

Summary

A recent large study confirms that people with the highest vitamin K intakes are significantly less likely to die from any cause, compared with those having the lowest intakes.

Because of its unique ability to activate proteins involved in atherosclerosis, osteoporosis, diabetes, and cancer, vitamin K is capable of opposing many of the leading causes of death in modern-day Americans. A host of new studies details the impact of vitamin K supplementation on preventing these, and possibly other, major age-related diseases.

Once considered just a blood coagulation vitamin, vitamin K_2 has now achieved the status of a multifunction vitamin. If you are interested in a longer and healthier life, consider supplementing with this oftenoverlooked nutrient.

If you are taking a blood-thinning drug, check first with your doctor to coordinate doses and follow-up testing. •

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

Health Advisor at 1-866-864-3027.



The Dangers Of Blood Thinners

People at risk for dangerous blood clots include those with various heart rhythm abnormalities (e.g., atrial fibrillation),⁵⁹ as well as those with artificial heart valves, 60 stents, and other hardware, and those at risk for certain kinds of strokes. For these people, blood-thinning drugs known as anticoagulants offer significant protection.26

But many traditional blood thinners, such as Coumadin® (warfarin), act specifically by inhibiting the action of vitamin K to produce clotting proteins. The emerging science of vitamin K is revealing a disturbing fact: While inhibiting vitamin K action on blood clotting proteins, these drugs also inhibit other vitamin K-dependent proteins, including the matrix Gla protein that naturally prevents arterial calcification.26

Studies in both animals and humans now show that the use of anticoagulant drugs such as Coumadin (warfarin), while effective at clot prevention, do indeed accelerate arterial calcification, placing patients at increased risk for cardiovascular disasters.61,62 The good news is that by supplementing with low-dose vitamin K, you may help rescue arteries from calcification induced by warfarin.63

However, if you are taking a blood-thinning drug, DO NOT stop using it and DO NOT begin any vitamin K supplementation on your own. Instead, speak with your doctor about starting a vitamin K supplement at a proper dose. With careful monitoring of coagulation tests, you are likely to find a balance between the benefits and the risks of anticoagulant use.64,65

Newer blood-thinning drugs such as **Pradaxa**® (dabigatran) and Eliquis® (apixaban) are not affected by vitamin K intake, meaning you can take full-dose vitamin K and not compromise the desired anticoagulant effects.

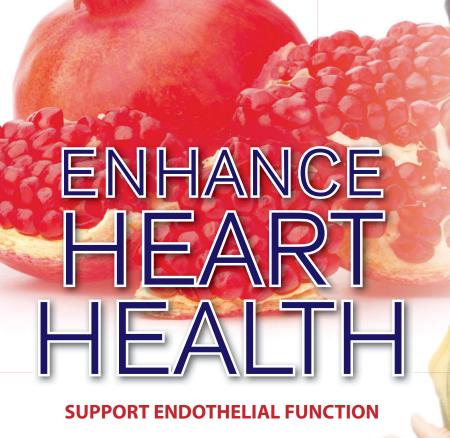
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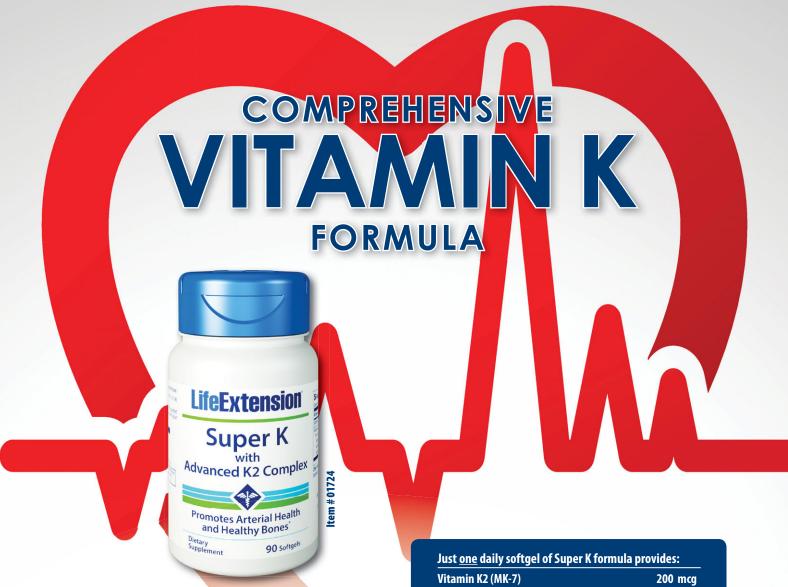
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There are **three** forms of **vitamin K** that are key factors to promoting arterial health and bone support.¹⁻⁸

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

Vitamin K1 is the form of vitamin K found in green vegetables, but only a fraction is absorbed into the blood-stream. Supplementation ensures ample K1 blood levels.

Vitamin K2 can be found in meats, dairy, and egg yolks. If you are avoiding these foods for health reasons, it is *essential* to ingest a K2 supplement. **MK-4** is the most rapidly absorbed form of K2, while **MK-7** boasts a very long half-life in the body. This makes both forms the perfect complement to any vitamin K regimen.⁹

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

Vitamin K2 (MK-7)	200 mcg
Vitamin K2 (MK-4)	1,000 mcg
Vitamin K1	1,000 mcg

The retail price for a bottle containing **90 softgels** is \$30. If a member buys four bottles, the price is reduced to **\$20.25 per bottle**.

(The same Super K formula consisting of vitamin K1, vitamin K2 (MK-4), and vitamin K2 (MK-7) can be found in the **Life Extension® Super Booster**. If you take the Super Booster, you do <u>not</u> need additional **Super K with Advanced K2 Complex**.)

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Warning to Coumadin® (warfarin) Drug Users: Patients prescribed vitamin K-antagonist anticoagulant 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 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 your vitamin K supplement. Life Extension® provides several forms of low-dose vitamin K for physician consideration.

SUPER BOOSTER

Seven High-Potency Nutrients in ONE Softgel

Most people don't get enough oil-based nutrients from their diet. **Super Booster** solves that problem with a once-a-day softgel that provides high potencies of fat-soluble nutrients and other compounds.

Just one SUPER BOOSTER provides:

- ▶ Vitamin K2: Studies show vitamin K2 provides superior benefits for bones, arteries, and other tissues. The MK-4 form of vitamin K2 is the most rapidly absorbed, but only remains active in the blood for a few hours. The MK-7 form of K2, however, remains bioavailable for a sustained 24 hours. Super Booster provides a potent dose of MK-7 and MK-4 (along with vitamin K1) to keep calcium in the bones and out of the arteries.
- Lutein: This carotenoid helps maintain healthy cell division, supports eye health, and protects the endothelial lining of the arteries.
- ▶ **Gamma tocopherol**: Taking only **alpha** tocopherol displaces the critically important gamma tocopherol from cells in the body. **Gamma tocopherol** also quenches a dangerous free radical (peroxynitrite) that plays a major role in age-related decline. It is vital that those taking vitamin E supplements also consume at least **200 mg** a day of gamma tocopherol.
- Sesame lignans: Help boost tissue levels of *gamma tocopherol* via several different mechanisms.
- Lycopene: Evidence suggests those who ingest this carotenoid enjoy healthier prostate function. Lycopene also helps guard against LDL oxidation.
- ▶ **Ginkgo**: Hundreds of studies substantiate how *Ginkgo biloba* promotes healthy circulation and brain function.
- ► Chlorophyllin: Scientific studies indicate chlorophyllin may protect against environmentally induced DNA damage.



vitamin KT (as phytonadione)	1,000 mcg
Vitamin K2 (as menaquinone-4)	1,000 mcg
Vitamin K2 (as menaquinone-7)	200 mcg
Gamma Tocopherol	245 mg
Ginkgo extract	120 mg
Chlorophyllin	100 mg
Sesame lignans	20 mg
Lycopene	10 mg
Lutein	2 mg

Vitamin B12

Vitamin C

Just one softgel of Super Booster supplies:

Super Booster saves consumers big money by combining a variety of costly nutrients into <u>one</u> softgel. If you add up the price of the individual ingredients in **Super Booster**, you would spend **two to three** times more.

Just <u>one</u> **Super Booster** softgel should be taken each day with the heaviest meal.

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

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

Contains soybeans.

300 mcg

95 mg

Caution: If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

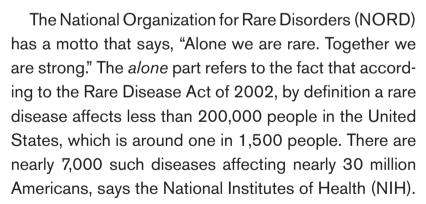
Tomat-O-Red® is a registered trademark of LycoRed, Ltd.



BY JON FINKEL

Patricia Richardson

A Rare Acting Talent Helps Battle Rare Disorders



The roots of the act actually took place in 1983 with the Orphan Drug Act, a federal law written and passed to boost research into possible cures for rare diseases. According to NORD, in the decade before this act there were only 10 new treatments brought to market by industry for diseases that today are defined as rare. >



PATRICIA RICHARDSON

WELLNESS PROFILE

This is where the *together* part of the NORD motto comes in. By forming an organization to bring attention to all rare diseases under one umbrella, NORD is able to raise national awareness and recognition of the challenges faced by people living with rare diseases and the associated costs to society. Their goal is to create a nation where people with rare diseases can secure access to diagnostics and therapies that extend and improve lives.

When it comes to recognition, one of the best ways for an organization to raise its profile is to partner with a celebrity who can speak to their cause. Enter: Patricia Richardson.

You most likely know Richardson from her starring roles on *Home Improvement* with Tim Allen, *Strong Medicine*, and *The West Wing*. What you may not know is that in 2005 she lost her father to *progressive supranuclear palsy* (PSP), a rare neurodegenerative brain disease with no known cause, treatment, or cure.

"When my dad first started showing signs of PSP we thought he



was just being a pain," Richardson says. "We thought he had osteoarthritis. He had a difficult personality sometimes, but when he had open heart surgery, it accelerated the disease. That was when we noticed that he really stopped talking. People don't understand that PSP attacks the brain cells that control speech and swallowing."

Richardson says that it must have been so hard for her father to understand what was going on. Since you never know which brain cells are being overcome by the disease, emotional skills, motor skills, and everything in between can be affected. Richardson's father's face was essentially frozen, and at the end of his life she says it was like he was mummified and trapped inside his body.

"We would have to use hand signals or thumbs up or thumbs down signals to communicate with him," she says. "When you go through this with a loved one, it's like you no longer have this person to talk to. It's like they're gone but not really gone, so when they pass away, it's not much different. I wondered if I'd be relieved when he passed away because he wasn't in a terrible place anymore, but it was very painful when he died. It's a parent and they're suddenly off the planet."

NORD's Vision Statement

The following are NORD's guiding principles on which their advocacy initiatives are based:

- A national awareness and recognition of the challenges faced by people living with rare diseases and the associated costs to society.
- A nation where people with rare diseases can secure access to diagnostics and therapies that extend and improve their lives.
- A social, political, and financial culture of innovation that supports both the basic and translational research necessary to create diagnostic tests and therapies for all rare disorders.
- A regulatory environment that encourages development and timely approval of safe and effective diagnostics and treatments for patients with rare diseases.

Shedding Some Light

Back in 2005, Richardson says that they didn't have a clue about how to handle PSP. There were support groups and physical therapists who could supposedly delay the symptoms, but that was all. As a way to cope with her own grief, Richardson became involved with a group called CurePSP to help raise money and awareness for the disease. After not even a decade into its founding, scientists have discovered that patients can be

helped by adding certain supplements into their nutrition regimen.

"Our patients have been helped by massive doses of CoQ10," Richardson says. "Personally, I take alpha lipoic acid, potassium with vitamin D, vitamin C, and DHEA because I'm an aging female."

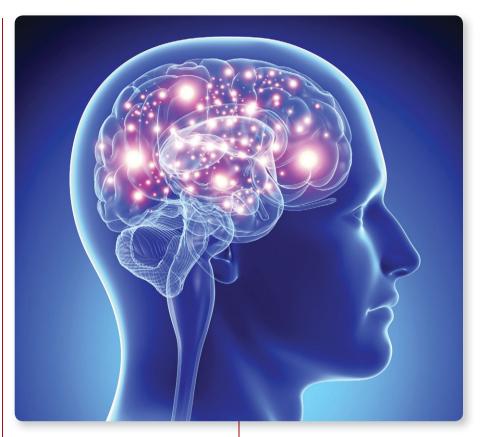
In addition to supplements, Richardson says that their research has uncovered the importance of the tau protein in the disease's development.

"They're really making great strides," she says. "Neurologists and biogenetic scientists have been coming up with some interesting ideas. But it's all about money. There are cutbacks at NIH and the costs that are associated with big pharmaceutical companies and developing a drug with the FDA make new drug development difficult."

Joining With NORD

Richardson came across NORD through her experience with her father's PSP case.





"I came to NORD because they helped PSP so much," she says. "NORD really came in handy for us. And they come in handy for other people. I was hosting a dinner and came across a family who had a child who was truly one of the only people on earth with a certain disease. NORD connected the family with the one other family they knew about who was dealing with the disease and they got the doctors in touch. The doctors were able to collaborate and through connections find potential clinical trials for their patients."

The key, says Richardson, is that NORD combines over 200 advocacy groups for around 7,000 rare diseases. Those are essentially all the diseases that nobody has heard of, making NORD a catchall support group.

"Having a disease that nobody else has is such a lonely place," she says. "Or when you're the caregiver and a loved one is battling a disease that is rare, people kind of just look at you. They don't want to hear about this thing that could possibly happen to them that they've never even heard of."

One of NORD's main ideas is that there are rare diseases, but the experiences of the afflicted and their families aren't rare.

"We're a big lobbying group," Richardson says. "We can get all these people to lobby Washington for more money to be allocated to helping to find cures. It's like the motto says. Alone we are rare. Together we're strong."

For more information on NORD, please visit: www.rarediseases.org.

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



VITAMIN D3 SOFTGELS

For Superior Absorption

New research on the vital benefits of **vitamin D** emerges on a daily basis.

Studies confirm that **optimal** levels of vitamin D are in the range of **50-80 ng/mL** of **25-hydroxyvitamin D**.

Life Extension® has created a large selection of highly *absorbable* **vitamin D** supplements in softgels to help you to achieve your individual **vitamin D goals**. Keep in mind that you may already be getting **1,000-3,000 IU** of **vitamin D** in your current multi-nutrient formulas.



Vitamin D3 1,000 IU

250 softgels • Retail: \$12.50

Four-bottle Member Price: \$8.44 ea.

For most people, a 1,000 IU potency is insufficient to attain optimal vitamin D blood levels. However, this potency may be suitable for smaller individuals who obtain 2,000-3,000 IU in their multi-nutrient formulas (and children). Item # 01751



Vitamin D3 5,000 IU With Sea-lodine™*

60 capsules (non-softgel) • Retail: \$14
Four-bottle Member Price: \$9.38 ea.
Most people, especially those seeking
to reduce their salt intake, do not
ingest enough iodine. Combining
5,000 IU of vitamin D3 with 1,000
mcg of iodine into one capsule makes
taking these two nutrients economical
and convenient. Due to the source of
kelp, this product may contain fish and
shellfish. Item # 01758



Vitamin D3 5,000 IU

60 softgels • Retail: \$11
Four-bottle Member Price: \$7.43 ea.
For those already obtaining
1,000-3,000 IU of vitamin D in
their multi-nutrient formulas, this
5,000 IU potency is what may be
needed to achieve optimal blood
levels. Item # 01713



Vitamin D3 7,000 IU

60 softgels • Retail: \$14

Four-bottle Member Price: \$9.45 ea.

Some people (such as those weighing more than 180 pounds) may require even more vitamin D. When combined with 1,000-3,000 IU taken in a multi-nutrient formula, this 7,000 IU softgel should enable these individuals to attain blood levels above 50 ng/mL. Item # 01718



Vitamin D3 Liquid 2,000 IU (Natural Mint Flavor)

1 ounce • Retail: \$28

Four-bottle Member Price: \$18.75 ea.
Great for travel and for those individuals who have difficulty absorbing enough vitamin D3 from softgels, this liquid vitamin D is ideal. Item # 01732
Also available without mint. (Item # 00864)

To order any of these high-potency vitamin D3 supplements, call 1-800-544-4440 or visit www.LifeExtension.com

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

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

With 11 Active Ingredients

COGNITEX®

WITH BRAIN SHIELD®

Provides The ULTIMATE Protection For Your Brain

<u>All</u> brains decline with age, but numerous studies show that the proper nutrients can promote more youthful cognition and enhanced memory.

Only **Cognitex**® combines **11** essential ingredients in one <u>cost-effective</u> formula.

Sold separately, these components sell for a small fortune in Europe, where they are commonly prescribed for optimal brain health. Following is a sample of what you'll find in each softgel:

- Alpha-Glyceryl Phosphoryl Choline: boosts levels of acetylcholine, which enables brain cells to communicate.
- ► **Gastrodin**: a brain shield that supports healthy levels of blood flow.
- Grape Seed Extract: boosts brain oxygen flow.
- ► **Vinpocetine**: increases circulation and brain cell conductivity.
- Phosphatidylserine: encourages improved concentration.
- ▶ **Pregnenolone**: a vital hormone that promotes mental energy.

Plus many more that make Cognitex® with

Pregnenolone & Brain Shield® the most advanced
neuro-enhancing formula on the market.

The retail price for 90 softgels of **Cognitex**® with **Pregnenolone & Brain Shield**® is \$62. If a member buys four bottles, the price is reduced to \$39.75 per bottle. If eight bottles are purchased, the price is reduced to \$37.50.

Cognitex® is also available without pregnenolone at a slightly lower cost. Item # 01896

To order Cognitex® with Pregnenolone & Brain Shield®, call 1-800-544-4440 or visit www.LifeExtension.com



Just three softgels of Cognitex® provide the following nutrients:

Alpha-Glyceryl Phosphoryl Choline (A-GPC)	600 mg
Phosphatidylserine (from Sharp-PS®)	100 mg
Brain Shield®	50 mg
Vinpocetine	20 mg
Grape Seed Extract	150 mg
Wild Blueberry Extract	150 mg
Sensoril® Ashwagandha Extract	125 mg
Uridine-5'-Monophosphate (disodium)	50 mg
Proprietary NeuroProtection Complex Blend	125 mg
Perluxan® Hops Extract, Rosemary Extract	
Pregnenolone	50 mg

Contains soybeans.

Sharp-PS® is a registered trademark of Enzymotec Ltd. Leucoselect® is a registered trademark of Indena S.p.A. Perluxan® is used with permission. Sensoril® is protected under US Patents Nos. 6,153,198 and 6,713,092 and is a registered trademark of Natreon, Inc.

Women suffering menopausal symptoms are challenged to safely manage night sweats, hot flashes, moodiness, and depression.

Recently published studies in medical journals show that certain plant-based extracts can reduce menopausal discomforts and support healthy estrogen metabolism during menopause and beyond.¹⁻⁸

Natural Estrogen combines a patented hops extract with standardized lignans and other compounds that have been shown to target menopause symptoms. The ingredients in Natural Estrogen include:

- **Hops Extract:** Clinically shown to reduce frequency of hot flashes by 50% and improve various other menopausal discomforts.2
- Lignan Extract: Clinically shown to block some of estrogen's unwanted effects.3
- **Licorice Extract:** Clinically shown to reduce the severity and frequency of hot flashes.4
- Broccoli Extract: Found to modulate estrogens and maintain healthy cell division.5
- Dong Quai: Believed in Chinese medicine to help with menstruation and menopausal symptoms.6
- Chasteberry Extract (Vitex agnus-castus): Shown to support hormone and neurotransmitter balance, which is important for relief of menopausal symptoms.^{7,8}

Natural Estrogen...powerful nutritional support to help decrease menopausal complaints and maintain healthy estrogen metabolism!

Novasoy® is a registered trademark of Archer Daniels Midland Company. HMRlignan™ is a trademark used under sublicense from Linnea S.A. Lifenol™ is a trademark of Naturex, Inc.

The suggested d	laily d	losage of	f <u>two</u> vegetaria	n tablets of
Natural Estroge	n prov	vides:		

matarar Estrogen provides.	
Lifenol™ Hops (Humulus lupulus) extract (flower)	120 mg
[standardized to 0.12% 8-prenylnaringenin (144 mcg)]	
HMRlignan™ Norway spruce (Picea abies) lignan	56 mg
extract (knot wood) [standardized to 90%	
Hydroxy-matairesinol potassium acetate (50 mg)]	
Broccoli Super Concentrate Extract (plant)	300 mg
[standardized to 4% glucosinolates (12 mg)]	
NovaSoy® Soy Isoflavone concentrate	137.5 mg
[standardized to 40% isoflavones (55 mg)]	
Dong quai extract (root)	25 mg
[standardized to 1% ligustilide (0.25 mg)]	
Licorice extract (root)	25 mg
Vitex (Vitex agnus-castus) extract (fruit)	20 mg
[standardized to 5% flavonoids (1 mg)]	
Calcium (as dicalcium phosphate)	136 mg
Phosphorus (as dicalcium phosphate)	104 mg

A bottle of 60 vegetarian tablets of Natural Estrogen retails for \$38. If a member buys four bottles, the price is reduced to \$25.50 per bottle.

Contains soybeans.

References

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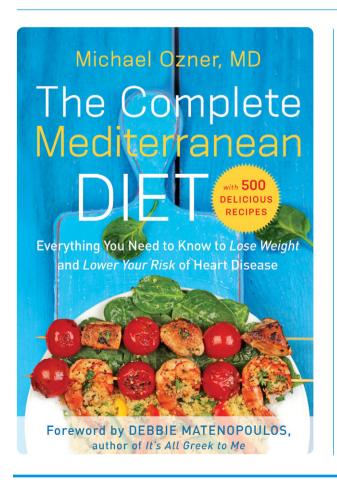


To order Natural Estrogen, call 1-800-544-4440 or visit www.LifeExtension.com



The Complete Mediterranean Diet

Everything You Need To Know To Lose Weight And Lower Your Risk Of Heart Disease



Dr. Michael Ozner is an award-winning pioneer in the field of preventative cardiology. He's Medi-

cal Director of both Wellness and Prevention at Baptist Health South Florida and the Cardiovascular Prevention Institute of South Florida, and was recently elected to "Top Cardiologists in America" by the Consumer Council.

Dr. Ozner started his prevention-only cardiology practice over 20 years ago. He knew that surgical intervention wasn't enough to stop the spread of America's number-one killer. Patients who had undergone surgical procedures were returning for a second or third intervention while waiting in dread for their next cardiac event to occur. >

AUTHOR INTERVIEW

"This is when I got interested in prevention," says Dr. Ozner, who has written numerous books. including The Great American Heart Hoax, Heart Attack Proof, and The Miami Mediterranean Diet. "Heart disease is really a conglomeration of different insults to our bodies. all of which can be controlled by a three-part program of prevention and lifestyle changes: nutrition, exercise, and stress management. Along with smoking cessation, using these prevention strategies in my own practice has resulted in a significant reduction in patients developing heart attacks if they hadn't had one, and those who had were less likely to require repeat intervention."

In this exclusive interview with Life Extension®, Dr. Ozner describes how a heart-healthy Mediterranean diet is a gamechanger when it comes to good health.

E: You describe the average American lifestyle as "toxic." What do you consider so deadly about our diet and lifestyle?

MO: Our food is contaminated with pesticides and preservatives, and contains an excessive amount of dangerous fats, sugars, and salt. We no longer exercise and our lives are plagued by chronic stress.

In the last 50 years, there's been an explosive rise in heart disease, stroke, high blood pressure, diabetes and obesity-diseases that have been directly linked to the food we eat and the lifestyles we lead. Despite the billions of dollars we spend on health care, we continue to suffer and die unnecessarily from diseases that can be prevented.

LE: You practice preventative cardiology and focus on three key areas to keep cardiovascular

disease at bay: nutrition, exercise, and stress management. Why is the Mediterranean diet such an important part of your diseaseprevention plan? And what about the two-thirds of American adults who are overweight and need to shed pounds for health reasons?

MO: The Mediterranean diet a well-balanced diet including healthy fats and complex carbohydrates—offers the best alternative if you're looking to lose weight without sacrificing your health. There's a reason the Mediterranean diet has been around for thousands of years. By pairing this diet with increased exercise and lowered stress, you don't just lose weight, but lower your cholesterol, blood sugar, and blood pressure-and that's just the beginning!

LE: What are some of the other chronic conditions that the Mediterranean diet protects against?

MO: The diet and lifestyle lowers the risk of a multitude of chronic diseases. It has been shown to reduce the risk of allergies, Alzheimer's, arthritis, asthma, cancer, lung disease, depression, inflammatory bowel disease, and metabolic syndrome.

LE: How can one single eating plan afford all these benefits?

MO: That's a fair question. The secret seems to lie in the fact that the Mediterranean diet is synergistic. That means that the components are not only nutritious in themselves, but when combined with one another, act together to provide added benefits. They are more powerful in combination than if they were eaten separately.

The Mediterranean diet is full of fruits and vegetables, which help prevent the damage to your body's cells that cause heart disease,

cancer, and other diseases. It also features whole-grain foods rich in fiber, which has been shown to help balance cholesterol and prevent some forms of cancer. It also decreases inflammation—which is strongly linked to the development of heart disease, cancer, and other ailments like arthritis.

LE: You call stress a "silent killer." What specifically makes stress so deadly? And why is stress reduction such an integral part of the Mediterranean lifestyle?

MO: Chronic stress increases stress hormones such as cortisol and adrenaline, which in turn increase blood pressure, causing the heartbeat to become rapid and increase the likelihood of forming blood clots. Studies show chronic stress significantly increases the risk of heart attack.

People in Mediterranean countries tend to have less stress compared to their American counterparts. They spend more time enjoying meals with friends and family. They often relax and take a nap after lunch. A recent study showed that a regular midday nap reduced risk of death from heart disease by 37%.

E: If a lunchtime nap is not realistic, what other steps for stressreduction do you recommend?

MO: The first step in handling stress is to take a realistic view of the factors responsible for stress in our lives and try to modify them. Next, I recommend physical exercise, not because exercise eliminates stress, but because people who exercise are better able to handle it. I also encourage my patients to begin relaxation response training-yoga, selfhypnosis, or meditation. Finally, prayer offers significant stress reduction for some.

AUTHOR INTERVIEW

E: Before we share some of your favorite recipes, do you have any final tips for our readers about the Mediterranean diet and lifestyle?

MO: Eat a variety of fresh, nonprocessed food, limit portion sizes, and avoid saturated fat, trans fats, refined sugar, and excess alcohol. Relax—and never lose your sense of humor. Laugh, smile, and enjoy life!

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

Michael Ozner, MD, FACC, FAHA, is a board-certified cardiologist, a Fellow of both the American College of Cardiology and the American Heart Association, Medical Director of Wellness and Prevention at Baptist Health South Florida, and a well-known regional and national speaker in the field of preventative cardiology. He was the recipient of the 2008 American Heart Association Humanitarian Award and was elected to "Top Cardiologist in America" by the Consumer Council of America, Dr. Ozner is the author of *The Great American* Heart Hoax, Heart Attack Proof, and The Miami Mediterranean Diet.

He is also a member of the Life Extension Foundation®'s Scientific Advisory Board.

To order
The Complete Mediterranean Diet,
call 1-800-544-4440 or
visit www.LifeExtension.com

Retail price \$19.95 Member price \$14.96 Item #33867 The Complete Mediterranean Diet-Everything You Need to Know to Lose Weight and Lower Your Risk of Heart Disease features over 500 recipes, from soups and salads to main courses and delicious desserts. Here are two easy-to-make dishes you can serve tonight.

Roasted Salmon With Wilted Spinach

1/2 tablespoon brown sugar
1/2 tablespoon smoked paprika
1/2 teaspoon Saigon cinnamon
1/2 teaspoon orange zest
1/4 teaspoon salt (or to taste)
4 (4-ounce) skinless salmon fillets
2 teaspoons olive oil
3 teaspoons fresh minced garlic
1 (9-ounce) bag fresh spinach

Preheat oven and a shallow, heavy-bottomed roasting pan to 400 degrees. In a small bowl, combine sugar, paprika, cinnamon, orange zest, and salt. Rub both sides of fillets evenly with spice mixture and place in roasting pan. Roast for roughly 10 minutes, turning once after five minutes, or until fish flakes easily with a fork. While fish is roasting, add oil to skillet over medium heat, then add garlic and sauté until fragrant. Add a few bunches of spinach at a time, until all is wilted. When fillets are cooked, divide spinach onto four plates, top each with a salmon fillet, and serve.

Makes 4 servings • Approx. 292 calories per serving • 26g protein, 19g total fat, 3g saturated fat, 0 trans fat, 4g carbohydrate, 70mg cholesterol, 106mg sodium, 1g fiber

Asparagus With Fresh Garden Herbs

1 pound asparagus, tough ends removed
1 tablespoon finely chopped fresh parsley
1/2 tablespoon finely chopped fresh basil
1/8 teaspoon freshly ground pepper
3 tablespoons trans fat-free canola/olive oil spread, melted
2 Italian plum tomatoes, seeded and chopped
2 tablespoons shredded Parmesan cheese

Simmer asparagus in an inch of water for five minutes until crispy tender. Drain well and place on serving platter. Combine parsley, basil, pepper, and canola/olive oil spread. Drizzle over asparagus, sprinkle on chopped tomatoes and Parmesan cheese, and serve.

Makes 4 servings • Approx. 85 calories per serving • 4g protein, 9g total fat, 1g saturated fat, 0 trans fat, 4g carbohydrate, 2mg cholesterol, 119mg sodium, 2g fiber





Item #01819

Emerging research suggests that different sources of omega-3 fatty acids, such as **fish oil** <u>and</u> **krill oil**, provide <u>complementary</u> effects upon cellular targets throughout the body.¹

Scientists suggest that combining **fish oil** and **krill oil** may provide *enhanced support* for cardiovascular health <u>and</u> the brain due to the different ways that fish oil and krill oil are taken up by our cells.²

Fish oil and krill oil share many important similarities, such as reducing levels of omega-6 relative to beneficial omega-3 fatty acids.² Most Americans consume too many omega-6 polyunsaturated fatty acids and not enough omega-3s.³

Evidence suggests that by *combining* both fish and krill oil, you can maximize uptake and the protective benefits of a wide spectrum of omega-3 fatty acids.³

To provide enhanced coverage, a new **Super Omega** contains a potent concentration of **fish oil**, **olive fruit**, and **sesame lignans**, plus **krill** and **astaxanthin**.

Combined Benefits Of Fish And Krill Oils

Human studies suggest that omega-3 fatty acids from **fish oil** result in a more rapid uptake into *plasma triglyceride* and *platelet phospholipids*, which specifically benefit the cardiovascular system.¹

With Krill & Astaxanthin

The omega-3s found in **krill** appear to be more rapidly incorporated into red blood cell phospholipids, which are rapidly absorbed into brain cells.1

When combined, krill <u>and</u> fish oil appear to offer enhanced benefits for both the cardiovascular and nervous system than either form by itself.

Astaxanthin: Super-Antioxidant

Astaxanthin protects cells by controlling free-radical activity and boosting mitochondrial function.4 This potent antioxidant carotenoid has been shown to help optimize joint, immune, 5,6 brain, 7,8 cardiovascular, 9,10 DNA, 11,12 and mitochondrial 13,14 health. Astaxanthin also supports healthy blood sugar levels for those already in the normal range. 15,16 And astaxanthin crosses the blood-eye barrier, supporting vascular health within the eye¹⁷ and protecting the eyes' sensitive cells.18-21

In Super Omega with Krill & Astaxanthin, the natural astaxanthin content of krill is fortified with additional astaxanthin for maximum stability and benefit.

Newly Documented Benefits Of Mediterranean Diet

In 2013, the results of a huge trial of people who followed a Mediterranean diet were published in the New England Journal of Medicine. Those who supplemented this diet either with olive oil or nuts showed such a huge reduction in primary cardiovascular problems that the trial was stopped early to spare the lives of those on the control diet.²²

The Mediterranean diet—rich in omega-3 fatty acids, monounsaturated fatty acids found in olive oil, and antioxidant-rich fruits, vegetables, and herbs—has long been associated with cardiovascular health and increased life span.23-31

To help emulate a Mediterranean diet, Super Omega provides a standardized olive fruit polyphenol extract to protect normal LDL from oxidation.³²⁻³⁶ Research shows that a combination of olive oil and fish oil supplements helps with inflammation better than a placebo or fish oil alone.³⁷ The daily dose of Super Omega softgels provide the equivalent polyphenol content of 4 to 6 tablespoons of extra virgin olive oil.

Sesame Lignans Extend Fish Oil's Benefits

The unstable nature of fatty acids like fish oil limits their biological efficacy in the body. Scientific studies show that when sesame lignans are supplemented with fish oil, the beneficial effects are augmented.38,39

Sesame lignans help guard against lipid peroxidation, thereby extending the stability of **DHA** in the body. These lignans also direct fatty acids toward pathways that can help with inflammatory reactions. Super Omega provides standardized sesame lignans to enhance the overall benefits of EPA/DHA marine oils.

Experts believe that taking both fish oil and krill oil together offers overlapping coverage to powerfully boost your health—with benefits that add to and amplify those of fish oil alone.

The suggested daily dose of four softgels of Super Omega with Krill & Astaxanthin provides:

Pure+™ Wild Fish Oil Concentrate	4,050 mg
Yielding:	
EPA (eicosapentaenoic acid)	1,400 mg
DHA (docosahexaenoic acid)	1,000 mg
Typical DPA (docosapentaenoic acid)	158 mg
Antarctic Krill (Euphausia superba) oil	300 mg
Polyphen-Oil™ Olive extract (fruit and leaf) [providing 90 mg polyphenols, 20.50 mg verbascoside/oleuropein, 15 mg hydroxyty	400 mg /rosol]
Sesame seed lignan extract	10 mg
Natural Astaxanthin	4 mg
(from CO2 extract of <i>Haematococcus pluvialis</i> algae)	

Contains crustacean shellfish (krill).

A bottle of 120 softgels of Super Omega with Krill & Astaxanthin retails for \$45. If a member buys four bottles, the price is reduced to \$31.50 per bottle.

Super Omega-3 Still Available

Life Extension members still have access to our premium Super Omega-3 with Olive Fruit Extract and Sesame Lignans. This formula costs less since it does not contain krill oil or astaxanthin.

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To order Super Omega with Krill & Astaxanthin, call 1-800-544-4440 or visit www.LifeExtension.com



BANISH AGE SPOTS AND UNEVEN PIGMENTATION

Uneven skin color and age spots can make skin look old beyond its years.

Age spots and discoloration begin when *melanin*, the skin's predominant pigment, is overproduced¹ and unevenly distributed.² This is medically termed *hyperpigmentation*.

Cosmesis Advanced Lightening Cream contains <u>three</u> natural compounds that, in combination, correct skin tone and dark spots—resulting in younger-looking skin.³⁻⁷

- 1. Alpha-arbutin, derived from bearberry plant leaves, removes pigment from age spots and helps inhibit further melanin production (melanogenesis) by up to 60%.³ In one clinical study, over 80% of individuals who topically applied alpha-arbutin showed noticeable reductions in the appearance of age spots in just three months.^{4,5}
- 2. Indian gooseberry binds to copper, which inhibits an enzyme (tyrosinase) involved in melanin production.⁶ Scientists found that topical application of Indian gooseberry extract substantially faded facial freckles for 89.5% of participants—after just eight weeks.⁶
- **3.** *Niacinamide*—a derivative of vitamin B3 or niacin—evens out skin coloration via a different mechanism: It suppresses transfer of already produced melanin to the main cells on the skin surface (*keratinocytes*) by up to **68%**.⁷

In a double-blind clinical trial, topically applied niacinamide reduced total areas of hyperpigmentation by **25%** in eight weeks and subjects reported lightened skin.⁷

Cosmesis Advanced Lightening Cream incorporates all three of these compounds into one synergistic formula that noticeably evens out pigmentation for a youthful, radiant skin tone! It is excellent for all skin types and can be used daily.

A 1-ounce jar of **Cosmesis Advanced Lightening Cream**retails for \$65. If a member buys
two jars, the price is reduced to **\$42.75** per jar.

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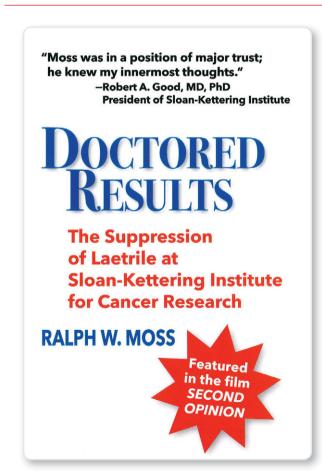
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BY RALPH W. MOSS, PHD

Doctored Results

The Suppression Of Laetrile At Sloan-Kettering Institute For Cancer Research



"Lying to the American people wasn't part of my job description."

-Ralph W. Moss, PhD

Ralph W. Moss was the Assistant Director of Public Affairs at Memorial Sloan-Kettering Cancer Center in New York City. He started in the summer of 1974 and immediately became familiar with a substance that would become a turning point in his work with the organization.

As he states early in his book, Doctored Results, part of Moss' job was to respond to letters written to Sloan-Kettering by the general public. He says there were often inquiries about specific therapies, suggestions concerning potential treatments, and as can be expected, some people writing with fringe ideas. >

BOOK REVIEW

But to Moss' surprise, numerous letters were written in regard to a substance called amygdalin, or, more popularly, laetrile. Laetrile was a cancer treatment that came from the kernel of an apricot pit, and many of the letter writers suggested this could be a potent weapon in the war against cancer. Like many Americans at the time, Moss was familiar with the substance because earlier that year. 60 Minutes host Mike Wallace had featured a story about Americans traveling to Mexico to access this unapproved cancer treatment.

It was a scenario far too many *Life Extension*® readers are familiar with: that of US citizens being forced to travel to foreign countries to receive treatments the FDA would not approve.

"As I read through the letters, I realized that some people were angry, very angry, that Sloan-Kettering wasn't properly testing laetrile or refused to use this apricot pit 'cure," Moss writes. "To answer them, Jerry [Moss' boss] gave me a carefully worded statement that had been drawn up a year before. It said that the testing of laetrile at Sloan-Kettering Institute was ongoing but that, to date, it had been found to have no effectiveness in treating or preventing cancer. People should not abandon their proven, conventional treatments."

Moss says that the general consensus around his office towards laetrile was one of "mild amusement or skeptical disbelief." But that is not what a scientist working at Sloan-Kettering discovered. His research indicated that laetrile, while not a cure for cancer, was very powerful at preventing metastatic spread of the disease, at least in lab animals. The medical establishment, aware of this research, did everything imaginable to discredit it.

Once Moss lays the foundation of his own personal story in Doctored Results, he then goes on to give an interesting and fact-filled history of America's war on cancer. In a particularly telling section, he explains the poor state of cancer research that existed in this country in the 1960s by comparing the cancer war to the space race.

"In the 1960s, America had spent \$26 billion to land men on the Moon, and the only tangible reward had been a collection of rocks and dust of interest to a few astronomers," he writes. "At that same time, all of the cancer scientists in the United States worked on a budget of \$250 million a year—less than 1% percent of the Moon shot's total."

Having established his own experience and the state of cancer research in the United States at the time of his employment at Sloan-Kettering, Dr. Moss then begins to weave the tale of one of the biggest medical cover-ups the world of cancer research had ever seen. He introduces the major players with deftness and an objectivity often reserved for fiction, which is an impressive accomplishment in a book with this subject matter.

Moss goes through great pains to explain how each prominent doctor or scientist or politician or hospital board member came to play a role in the story of laetrile. One such person who stands out is Dr. Kanematsu Sugiura, who was deemed a "Living National Treasure" for his medical body of work. He was renowned for his legendary patience, which Moss says included running one experiment that called on him to inject mice with laetrile every day, seven days a week for two-and-a-half years. Dr. Sugiura never missed a single day.

As the story continues, Moss quotes Dr. Sugiura—a quote that resonates for the rest of the book.

Dr. Sugiura explained in an interview with Moss how his laetrile experiments were work-

ing at the time. In one example, he said that a breed of mice that gets cancer in **80** to **85%** of studies was only showing a **20%** cancer rate when treated with laetrile. Dr. Sugiura then pondered, "It would be interesting if it prevented it completely. One hundred percent prevention would be very interesting—then it would convince everybody..."

Moss then asked him why, with such success, were so many in the medical establishment against laetrile? To which Sugiura replied, "I don't know. Maybe the medical profession doesn't like it because they are making too much money."

What followed is an out-and-out slandering of Sugiura's research, as well as his character, by several high-level organizations. As the book progresses, Moss peels back layer after layer of the laetrile scandal until the reader can't help but be disgusted by the events taking place. Like any good story, you don't want to know the ending before reading the book, but suffice it to say that *Life Extension*® readers will appreciate the importance of this story, no matter how much we wish it weren't true.

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

To order a copy of Doctored Results: The Suppression of Laetrile at Sloan-Kettering Institute for Cancer Research, call 1-800-544-4440 or visit www.LifeExtension.com.

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In addition to the book, Dr. Moss is also the subject of a documentary called Second Opinion, which tells this same story. For more information, please visit www.secondopinionfilm.com.

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

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

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

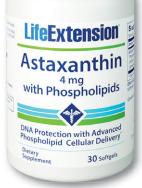
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BY MICHAEL DOWNEY

Kale

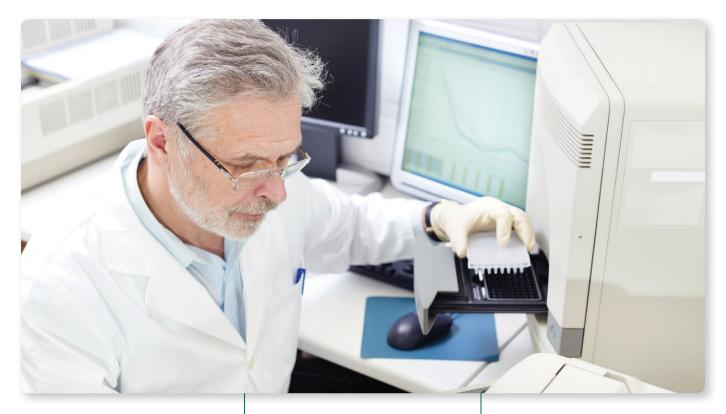
Immunostimulatory And **Anticancer Effects**

For decades, scientists have known that the nutrients in cruciferous vegetables such as cabbage, broccoli, and kale offer unique protection against the type of DNA damage that too often results in malignancies. Kale, however, stands out. The total polyphenol content in kale has been found to be higher than in any other cruciferous vegetable.1

Powerhouse Immune Support

Kale provides a superior level of sulforaphane—a unique cancer-fighting compound.² Sulforaphane boosts detoxification, the cleansing process by which the body eliminates harmful compounds, possibly by its induction of phase II detoxification enzymes, in addition to its boosting of antioxidant enzymes.2

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As well as strongly enhancing natural detoxification mechanisms, sulforaphane also exerts chemoprotective effects through its demonstrated antibacterial and anti-inflammatory activity.^{3,4}

Sulforaphane inhibits a group of enzymes that alter gene expression and produce proteins involved in initiating cancer.⁵

Critically, scientists recently learned that kale stimulates the body's production of *immunoglobulin* (Ig), proteins used by the immune system to identify and neutralize foreign invaders.⁶

Surprisingly, it is not necessary to consume kale raw in order to secure these immunostimulatory benefits. In one recent study, a water-soluble fraction of kale that had been cooked for a long period of time—boiled continuously for half an hour—was even more effective than the raw kale fraction at producing *immunoglobulin A* (IgA).6

IgA is a principle antibody class that acts as an important first line of defense in the secretions that bathe the mucosal surfaces of the gastrointestinal, respiratory, and genitourinary tracts—the largest area of exposure of the body to external pathogens.^{7,8} IgA is believed to interfere with pathogen adherence to mucosal epithelial cells ("immune exclusion") and, in the serum, to serve as a second line of defense by eliminating pathogens that have breached the mucosal surface.^{9,10}

Thanks to these multiple modes of action, kale has been gaining a lot of attention from scientists primarily for its potent effects in combating cancer, as well as other health benefits.

Cancer Prevention

Italian scientists found that individuals who ate cruciferous vegetables such as kale at least once a week lowered their risk of oral, colorectal, and breast cancers by 17%, and slashed the risk of esophagus and kidney cancers by 28 and 32%, respectively.¹¹

However, kale may be superior to other cruciferous options in its cancer-prevention effects, owing to an especially rich source of *glucosinolates*, which are converted by the body into cancer-preventive compounds called *isothiocyanates*. ¹² These complex compounds are powerful inducers of both cancer-destroying enzymes and inhibitors of carcinogenesis. ^{13,14}

As a result of these various compounds, kale has been demonstrated to substantially reduce the risk of many cancers, 15 including some of the deadliest forms, such as cancer of the pancreas, 16 breast, 17-20 colon, 21 and esophagus. 2

Although the exact anticancer mechanism for each of kale's complex compounds is not known, the sulforaphane component alone has been shown to modulate cell death, cell cycle, angiogenesis, susceptibility to carcinogens, cancer invasion and metastasis, and antiinflammatory activities. 17,22,23

Other research reveals that sulforaphane helps support a healthy immune system, which is a key component in staving off cancer. It significantly enhances production of several chemicals involved in the immune response, such as interferon-gamma.24 And the watersoluble fraction of kale has been shown to stimulate production of immunoglobulin in human cells.6

Conspicuously, sulforaphane has been shown to selectively target precancerous and cancerous cells.17

Most compelling, several studies have reported that the isothiocyanates that result from the breakdown of kale's glucosinolates affect epigenetic mechanisms—altering gene expression to trigger clearance of carcinogenic substances from the body more quickly.²⁵⁻²⁸

Cardiovascular Support

A study published in the American Journal of Clinical Nutrition reported that a high intake of cruciferous vegetables reduced the risk of dying from cardiovascular disease by as much as 22%.29 Yet the cardiovascular benefits of kale may be even stronger than other cruciferous vegetables.

Kale is especially abundant in the carotenoid lutein, which may help prevent atherosclerosis. An 18-month study from the University of Southern California found that in a group of 480 men and women aged 40 to 60 with no history of heart disease, those with the lowest serum lutein concentration had a five-fold greater increase in carotid artery thickness, a risk factor for heart disease, compared with those who had the highest serum lutein concentrations. This study also included an in vitro portion that compared tissue cultures of cells exposed to various combinations of lutein and low-density lipoprotein (LDL), which is known to promote atherosclerosis. The researchers found that pretreatment of cells with lutein dose-dependently protected the cells against inflammation associated with LDL plaque formation, further supporting a protective effort for lutein against atherosclerosis.30

Another cardiovascular benefit of kale relates to its high fiber content, which may have a protective effect against high levels of C-reactive protein (CRP), an inflammatory marker associated with predicting cardiovascular disease risk. Researchers examined the relationship between dietary fiber intake and CRP levels in more than 3,900 men and women aged 20 and older. After adjusting for confounding factors such as age, gender, physical activity, and body mass index (BMI), those with the highest fiber intake had a 51% lower risk for elevated CRP levels compared with those with the lowest intakes.31

Kale's high-fiber content may also protect cardiovascular health by lowering cholesterol. Your liver uses cholesterol to make bile acids, specialized molecules that emulsify fat to aid in its digestion and absorption. When you eat a fat-containing meal, bile acids are released from your gallbladder into the intestine where they help ready the fat for interaction with enzymes and eventual absorption into the body.³² Fiber-related nutrients in kale bind together with some of the bile acids in your intestine in such a way that they remain in the intestine and pass out of the body in a bowel movement instead of getting absorbed along with the fat they have emulsified. When this



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happens, your liver replaces the lost bile acids by drawing on your existing cholesterol supply—lowering your body's cholesterol level.³²

A study demonstrated that the bile acid-binding—and therefore, cholesterol-lowering—ability of kale is *greater* than that of the other cruciferous vegetables, with the exception of collard greens, which proved only slightly more effective. The same study indicated that the fiber-related components in kale do a much better job of binding together with bile acids in your digestive tract when they've been consumed steamed instead of raw.³²

Kale is also especially noteworthy for its high content of vitamin K, a fat-soluble vitamin that plays an important role in blood clotting.^{33,34}

Broader Benefits

Kale is especially rich in lutein and *zeaxanthin*, two carotenoids known to absorb blue light. They act like sunglass filters to prevent eye damage from excessive exposure to ultraviolet light. In several studies, people with a history of eating lutein-rich foods such as kale had up to **22**% lower risk for cataracts.^{35,36} Also, one cup of kale provides over **200**% of the daily recommended intake of vitamin A, an important nutrient for vision.

Because it is high in fiber and contains protein, kale may help balance blood sugar. Fiber helps slow the rise of blood sugar and protein helps anchor blood sugar.

Anthocyanins, which are antioxidant superstars, are abundantly found in kale. These potent compounds may help combat obesity and weight gain by preventing fat cells from expanding. One



study reported that, "anthocyanin-treated mice showed a **24**% decrease in weight gain," compared to those not given anthocyanins.³⁷ Also, kale is incredibly low in calories, contains no trans fat, is low in sugar (in the form of vegetable carbohydrates), is practically fat free, and promotes satiety through its naturally occurring fiber and protein.³⁸

Aside from its many exceptional compounds, kale delivers an abundance of vitamins and minerals. It is particularly rich in vitamins A, C, and K, as well as being a good source of calcium, manganese, copper, and potassium.³⁸

Those who find it difficult to consume enough kale or other cruciferous vegetables in their daily diet can obtain standardized potencies of sulforaphane, zeaxanthin, and lutein in low-cost dietary supplements.

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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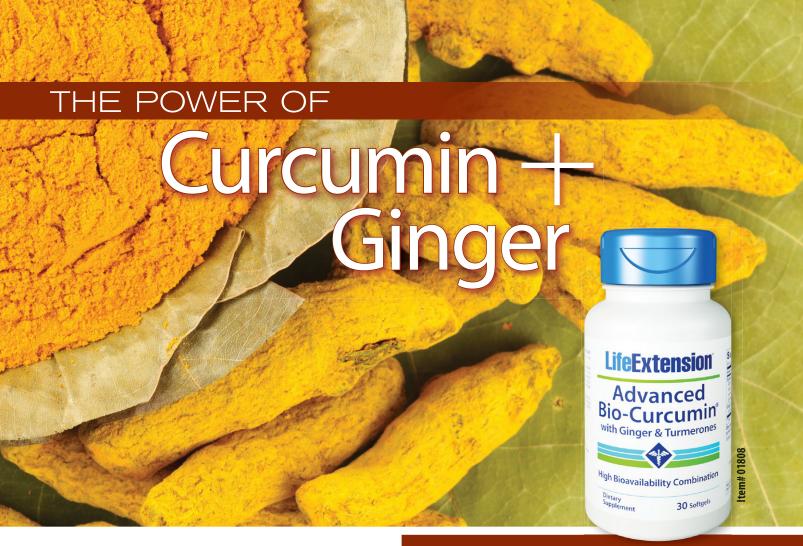
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HOW MUCH CURCUMIN ARE YOU ABSORBING?

Derived from the Indian spice turmeric, **curcumin** is acclaimed for its wide range of health-promoting effects on almost every organ system,¹⁻⁶ while supporting the body's healthy inflammatory response.⁷

Most **curcumin** extracts are neither well absorbed nor well retained in the body.

Advanced Bio-Curcumin® with Ginger & Turmerones contains BCM-95®, a patented, bioenhanced preparation of curcumin that has been shown to reach up to 7 times higher concentration in the blood than standard curcumin.8 In addition to the benefits of BCM-95® this advanced formula provides:

- Turmerones: botanical compounds that remain after curcumin is extracted, enhancing curcumin absorption and increasing the amount of curcumin inside cells.⁹
- *Ginger*: a close relative of curcumin with overlapping, complementary health benefits.
- *Phospholipids*: an emulsifying molecule that greatly enhances absorption.¹⁰

The suggested daily dosage of <u>one</u> softgel of Advanced Bio-Curcumin[®] with Ginger & Turmerones provides:

Turmeric Phospholipid Blend

630 mg

BCM-95° Bio-Curcumin Turmeric 25:1 extract (rhizome) [total curcuminoids complex with essential oils (380 mg)],

Turmeric oil (rhizome) [providing 60 mg total turmerones], Phospholipids

Ginger CO₂ extract (root) [providing 60 mg gingerols]

200 mg

Each softgel of Advanced Bio-Curcumin® with Ginger & Turmerones provides 400 mg of BCM-95® Super Bio-Curcumin, plus an array of turmerones and phospholipids.

A bottle of 30 softgels of **Advanced Bio-Curcumin®** with **Ginger & Turmerones** retails for \$30. If a member buys four bottles, the price is reduced to **\$20.25** per bottle. Contains soybeans.

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

Caution: Do not take if you have gallbladder problems or gallstones. If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, contact your healthcare practitioner before taking this product.

To order Life Extension® Advanced Bio-Curcumin® with Ginger & Turmerones, call 1-800-544-4440 or visit www.LifeExtension.com

TRIPLE ACTION CRUCIFEROUS VEGETABLE **EXTRACT**

FOR DNA PROTECTION

Scientists continue to discover healthful benefits—including DNA protection—in cruciferous vegetables such as broccoli, cauliflower, cabbage, watercress, and Brussels sprouts. Unfortunately, no matter how healthy you eat, cooking destroys many of these protective plant extracts.

Triple Action Cruciferous Vegetable Extract combines cruciferous plant extracts into a comprehensive formula for optimal DNA protection.

Protective compounds found in cruciferous vegetables like **I3C** (indole-3-carbinol) and **DIM** (di-indolyl-methane) encourage liver detoxification to help neutralize dangerous xenoestrogens (estrogen-like environmental chemicals that damage the body's hormonal system), as well as beneficially modulate estrogen metabolism.1-4

Extracts of **broccoli**, **watercress**, and **rosemary** also provide bioactive compounds that have a multitude of favorable effects on estrogen metabolism and healthy cell division.⁵⁻⁸ Apigenin, a powerful plant flavonoid found in plants such as parsley and celery, boosts cell protection.9

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 bottle containing 60 vegetarian capsules of Triple Action Cruciferous Vegetable Extract retails for \$24. If a member buys four bottles, the price is reduced to \$16.50 per bottle.

Those who want the added 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. If a member buys four bottles, the price is reduced to **\$22.20** per bottle.

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To order Triple Action Cruciferous Vegetable Extract, call 1-800-544-4440 or visit www.LifeExtension.com







Item # 01468

Item # 01469

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

Broccoli Extract [standardized to 4% glucosinolates (16 mg)]	400 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





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

Five Easy Steps:

- 1. Call 1-800-208-3444 to discuss and place your order with one of our knowledgeable health advisors. (This order form can also be faxed to 1-866-728-1050 or mailed). Online orders can also be placed at www.lifeextension.com.
- 2. After your order is placed, you will be mailed either a requisition form to take to your local LabCorp Patient Service Center or a Blood Draw Kit; whichever is applicable (Please note: If a blood draw kit is used, an additional local draw fee may be incurred.)
- 3. Have your blood drawn.
- 4. Your blood test results will be sent directly to you by Life Extension.
- 5. Take the opportunity to discuss the results with one of our knowledgeable health advisors by calling 1-800-226-2370: or review the results with your personal physician.

It's that simple! Don't delay—call today!

For Our Local Members:

For those residing in the Ft. Lauderdale, Florida area, blood-draws are also performed at the Life Extension Nutrition Center from 9:00 am to 2:00 pm Monday through Saturday. Simply purchase the blood test and have it drawn with no wait! Our address is 5990 North Federal Highway. Ft. Lauderdale, FL, 33308-2633.

Blood Testing The Ultimate Information

MOST POPULAR PANELS

Life Extension Member Pricing

COMPREHENSIVE PANELS MALE LIFE EXTENSION PANEL (LC322582) Chemistry Profile includes glucose, cholesterol, LDL. HDL. triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: **C-Reactive Protein** DHEA-S Homocysteine TSH for thyroid function Free Testosterone **Estradiol Total Testosterone**

Vitamin D 25- hydroxy PSA (prostate-specific antigen) Hemoglobib A1c

FEMALE LIFE EXTENSION PANEL (LC322535) Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: **C-Reactive Protein** DHEA-S Homocysteine TSH for thyroid function Free Testosterone **Estradiol Total Testosterone**

WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028)

Progesterone

Hemoglobib A1c

CBC/Chemistry profile (see description above), DHEA-S, free and total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Free T4, Reverse T3, Insulin, Hemoglobin A1c, Vitamin D 25-hydroxy, C-reactive protein (high sensitivity), and Ferritin.

Vitamin D 25- hydroxy

\$130

WEIGHT LOSS PANEL-BASIC (LC100027) CBC/Chemistry profile (see description above). DHEA-S, free and total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Insulin and Hemoglobin A1c.

MALE HORMONE ADD-ON PANEL (LCADDM)* \$155

Pregnenolone and Dihydrotestosterone (DHT) To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel. This panel provides valuable information about a testosterone metabolite that can affect the prostate, and the mother hormone that acts as a precursor to all other hormones

FEMALE HORMONE ADD-ON PANEL (LCADDF)* Pregnenolone and Total Estrogens

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.

LIFE EXTENSION THYROID PANEL (LC304131) \$75 TSH. T4. Free T3. Free T4.

FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.

MALE COMPREHENSIVE HORMONE PANEL* \$299 (LC100010) CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and

Free Testosterone, SHBG, TSH, Free T3.

THE CBC/CHEMISTRY PROFILE (LC381822) Note: This CBC/Chemistry Profile is included in many Life Extension panels. Please check panel descriptions. CARDIOVASCULAR RISK PROFILE Total Cholesterol Cholesterol/HDL Ratio

HDL Cholesterol Estimated CHD Risk LDL Cholesterol Glucose Triglycerides

LIVER FUNCTION PANEL AST (SGOT)

Total Bilirubin ALT (SGPT) Alkaline Phosphatase LDH

KIDNEY FUNCTION PANEL

BUN/Creatinine Ratio BUN Creatinine Uric Acid

BLOOD PROTEIN LEVELS

Total Protein Globulin

Albumin/Globulin Ratio Albumin BLOOD COUNT/RED AND WHITE BLOOD

CELL PROFILE

Red Blood Cell Count Monocytes White Blood Cell Count Lymphocytes Eosinophils Platelet Count Basophils Hemoglobin Polys (Absolute) Hematocrit Lymphs (Absolute) MCV Monocytes (Absolute) MCH Eos (Absolute) MCHC Baso (Absolute) Polynucleated Cells RDW

BLOOD MINERAL PANEL

Sodium Calcium Potassium Chloride **Phosphorus** Iron

COMPREHENSIVE THYROID PANEL \$199 TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA

\$198

\$136

\$131.25

\$249

\$90

FOOD SAFE ALLERGY TEST** (LCM73001) This test measures delayed (IgG) food

allergies for 95 common foods. **ADRENAL FUNCTION PANEL (LC100021)**

DHEA-S, AM/PM Cortisol, Glucose, Insulin, Lipid Panel, RBC magnesium

OMEGA SCORE™** (LCOMEGA) Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega

Score™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.

HEALTHY AGING PANEL-COMPREHENSIVE (LC100026)

CBC/Chemistry profile (see description above). C-reactive protein (high sensitivity), Vitamin B12, Folate, Homocysteine, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Free T3, Free T4, Ferritin, Urinalysis, Fibrinogen, and Insulin.

HEALTHY AGING PANEL-BASIC[†] (LC100025) \$149 CBC/Chemistry profile (see description above), C-reactive protein (high sensitivity), Vitamin B12, Folate, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Ferritin, and Insulin.

VAPTM TEST* (LC804500)

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

- 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 Tests and Panels Life Extension Member Pricing

ENERGY PROFILE (LC100005) CBC/Chemistry Profile (see description), Epstein –Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferritir Total and Free Testosterone, DHEA-S, Free T3, Free 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) CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.	\$135
THYROID ANTIBODY PROFILE (LC100004) Thyroid Antithyroglobulin Antibody (ATA) and Thyroid Peroxidase Antibody (TPO).	\$99
CARDIAC PLUS* (LC100008) \$145 CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine.	
VAP™ PLUS* (LC100009) VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.	\$330
CARDIAC RISK COQ10* (COENZYME Q10) (LC120251) This test is used to check the blood level of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.	\$99
Lp-PLA2 (PLAC® TEST) (LC123240) This test is used to aid in predicting risk for coronary heart disease, and ischemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries.	\$125
GLYCOMARK (LC500115) This test measures your average maximum glucose over the past two weeks and is an effective tool in monitoring postmeal glucose control	\$99 ol.
NUTRIENT PANEL† (LC100024) Vitamin B12, Folate, Vitamin D 25-hydroxy, Vitamin C, Vitamin A, Selenium, Zinc, CoQ10, and RBC magnesium.	\$349
MALE HEALTH PSA (PROSTATE-SPECIFIC ANTIGEN) (LC010322) Can provide an early warning sign for prostate disorders and possible cancer.	\$31

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

for additional information.

ıor	i Wember Pricing	
375	HORMONES DHEA-SULFATE (LC004020) This test shows if you are taking the proper amount of DHEA. This test normally costs \$100 or more at commercial laboratories.	\$61
	MALE BASIC HORMONE PANEL (LC100012) DHEA-S, Estradiol, Free and Total Testosterone, PSA	\$75
	FEMALE BASIC HORMONE PANEL (LC100013) DHEA-S, Estradiol, Free and Total Testosterone, Progesterone	\$75
135	DIHYDROTESTOSTERONE (DHT)* (LC500142) Measures serum concentrations of DHT.	\$99
00	ESTRADIOL (LC004515) For men and women. Determines the proper amount in the body.	\$33
99	INSULIN FASTING (LC004333) Can predict those at risk of diabetes, obesity, and heart and other diseases.	\$25
	PREGNENOLONE* (LC140707) Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing's syndrome.	\$116
330	PROGESTERONE (LC004317) Primarily for women. Determines the proper amount in the body.	\$55
99	SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016) This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens.	\$33
125	BONE HEALTH VITAMIN D (250H) (LC081950) This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.	\$47
599	OSTEOCALCIN* (LC010249) Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.	\$91
349	DPD CROSS LINK URINE TEST (LC511105) 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 estapparesis	\$79

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drugs) in people diagnosed with osteoporosis.

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Magnesium Citrate

Only Trace Minerals

Optimized Chromium w/Crominex® 3+

OptiZinc

. Sea-Iodine™

Selenium

Se-Methyl L-Selenocysteine

Strontium

Vanadyl Sulfate

Zinc Lozenges

MISCELLANEOUS

Blood Pressure Monitor Arm Cuff

CR Way Edition Advanced Dietary Software

MITOCHONDRIAL SUPPORT

Acetyl-L-Carnitine

Acetyl-L-Carnitine-Arginate

Mitochondrial Basics w/BioPQQ®

Mitochondrial Energy Optimizer w/BioPQQ®

Optimized Carnitine with GlycoCarn®

Super Absorbable CoQ10™ with d-Limonene

Super Alpha Lipoic Acid with Biotin

Super R-Lipoic Acid

Super Ubiquinol CoQ10 with Enhanced

Mitochondrial Support™

MOOD RELIEF

Adrenal Energy Formula

Bioactive Milk Peptides

L-Theanine

Enhanced Natural Sleep® w/ Melatonin

Enhanced Natural Sleep® w/o Melatonin

Natural Stress Relief

SAMe

L-Tryptophan

Optimized Tryptophan Plus

MOUTH CARE

Advanced Oral Hygiene

Mouthwash w/Pomegranate

Toothpaste

Xyliwhite™ Mouthwash

MULTIVITAMIN

Booster

Children's Formula Life Extension Mix™

Comprehensive Nutrient Packs Advanced

Life Extension Mix™ Capsules

Life Extension Mix™ Powder Life Extension Mix™ Tablets

Life Extension Mix™ w/o Copper Capsules

Life Extension Mix™ w/o Copper Tablets Life Extension Mix™ w/Extra Niacin

Life Extension Mix™ w/Extra Niacin w/o Copper Life Extension Mix™ w/Stevia Powder Life Extension Mix™ w/Stevia w/o Copper Powder

Life Extension One-Per-Day

Life Extension Two-Per-Day

Super Booster Softgels w/Advanced K2 Complex

PET CARE

Cat Mix

Dog Mix

PROSTATE & URINARY HEALTH

Optimized Cran-Max® with UTIRose™

5-LOXIN®

PalmettoGuard™ Saw Palmetto w/Beta Sitosterol Pomi-T[©]

Super Saw Palmetto/Nettle Root Formula w/Beta-Sitosterol

Ultra Natural Prostate Formula

SKIN CARE

Advanced Lightening Cream

Advanced Triple Peptide Serum

Advanced Imple Feptide Serum
Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermAbrasion

Anti-Aging Mask

Anti-Glycation Serum

Anti-Aging Rejuvenating Face Cream with

Coffee Extracts

Anti-Aging Rejuvenating Scalp Serum

Antioxidant Rejuvenating Foot Cream Antioxidant Rejuvenating Foot Scrub

Antioxidant Rejuvenating Hand Cream

Antioxidant Rejuvenating Hand Scrub

Anti-Redness & Blemish Lotion

Bio-Collagen w/Patented UC-II® Bioflavonoid Cream

Broccoli Sprout Corrective Clearing Mask

DNA Repair Cream

Dual-Action MicroDermAbrasion

Essential Plant Lipids Reparative Serum

Face Master® Platinum

Face Rejuvenating Antioxidant Cream

Enhanced FernBlock® with Red Orange Complex

Fine Line-Less

Hair Suppress Formula

Healing Formula All-in-One Cream

Healing Mask

Hyaluronic Facial Moisturizer

Hydrating Anti-oxidant Face Mist

Hydroderm[®]

Lifting & Tightening Complex

Lycopene Cream

Melatonin Cream Mild Facial Cleanser

Neck Rejuvenating Antioxidant Cream

Pigment Correcting Cream (Ultra) Reiuvenex®

Rejuvenex® Body Lotion
RejuveneX® Factor Firming Serum

Reiuvenating Serum

Renewing Eye Cream Resveratrol Anti-Oxidant Serum

Skin Lightening Serum

Skin Restoring Phytoceramides w/Lipowheat® Skin Stem Cell Serum

Stem Cell Cream w/Alpine Rose

Ultra Rejuvenex®

Ultra RejuveNight® w/o Progesterone

Ultra Lip Plumper

Ultra Wrinkle Relaxer

Under Eye Refining Serum Under Eye Rescue Cream

Vitamin C Serum

Vitamin D Lotion Vitamin E-ssential Cream

Vitamin K Healing Cream Youth Serum

Natural Estrogen w/Pomegranate

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 Green Coffee Extract CoffeeGenic®

(also w/Glucose control)

Coriolus Super Strength

CR Mimetic Longevity Formula

Cinsulin® w/InSea²⁰

and Crominex® 3+

European Leg Solution Diosmin 95

Fem Dophilus

Femmenessence MacaPause® GlycemicPro™ Transglucosidase

Migra-eeze™

Natural Female Support

Pecta-Sol®

Potassium Iodide

PQQ Caps with BioPQQ®

PteroPure®

Prelox® Natural Sex for Men® Pyridoxal 5' - Phosphate Tri Sugar Shield™

SPORTS PERFORMANCE

Creatine Capsules

DMG (N, N-dimethylglycine)

L-Glutamine Capsules

L-Glutamine Powder

Whey Protein Isolate Whey Protein Concentrate

VITAMINS

Ascorbyl Palmitate Capsules

B12

Beta-Carotene

Biotin Capsules

Buffered Vitamin C Powder Complete B Complex

Effervescent Vitamin C

Fast-C®

Folic Acid + B12

Gamma E Tocopherol w/Sesame Lignans Gamma E Tocopherol/Tocotrienols

Inositol Capsules

Mega Lycopene Extract Methylcobalamin

MK-7 No-Flush Niacin

Optimized Folate

Super Ascorbate C Capsules Super Ascorbate C Powder

Super K w/Advanced K2 Complex

Tocotrienols w/Sesame Lignans

Vitamin B3 (Niacin) Capsules Vitamin B6

Vitamin B12 Lozenges

Vitamin C

Vitamin D3 Vitamin D3 w/Sea-lodine™

Vitamins D and K w/Sea-lodine™

Vitamin E

Vitamin K2

WEIGHT MANAGEMENT Advanced Anti-Adipocyte Formula

w/Meratrim® & Integra Lean® Advanced Natural Appetite Suppress

Calorie Control Weight Management™ Formula w/CoffeeGenic® Green Coffee Extract

CalReduce Selective Fat Binder CoffeeGenic® Weight Management™ with Green Coffee Extract

7-KETO DHEA

DHEA® Complete

Fucoxanthin Slim™ Garcinia HCA

Integra-Lean® African Mango Irvingia

Optimized Irvingia w/Phase 3™ Calorie Control Complex

Optimized Saffron with Satiereal®

Natural Glucose Absorption Control Super Citrimax®

Super CLA Blend w/Guarana and Sesame Lignans

Super CLA Blend w/Sesame Lignans WellBetX PGX® plus Mulberry

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Uty	Tota
	A				
01524	ACETYL-L-CARNITINE - 500 mg, 100 veg. caps	\$34.00	\$25.50		
	Buy 4 bottles, price each	30.00	22.50		
01525	ACETYL-L-CARNITINE ARGINATE - 100 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	50.99	38.24		
01628	ADRENAL ENERGY FORMULA - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01630	ADRENAL ENERGY FORMULA - 120 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	42.00	31.50		
01828	ADVANCED LIPID CONTROL - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01521	ADVANCED ORAL HYGIENE - 60 mint lozenges	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00681	AHCC - 500 mg, 30 caps	59.98	44.99		
00457	ALPHA-LIPOIC ACID W/BIOTIN (SUPER) - 250 mg, 60 caps	37.00	27.75		
00401	Buy 4 bottles, price each	32.00	24.00		
01440	ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO - 100 caps	26.00	19.50		
U 1 1 1 1 U		23.00	17.25		
01509	Buy 4 bottles, price each ANTI-ADIPOCYTE FORMULA w/MERATRIM®		29.25		
01309	ANTI-ADIPOCYTE FORMULA W/MERATRIM® & INTEGRA LEAN® (ADVANCED) - 60 veg. caps	39.00	29.20		
	Buy 4 bottles, price each	36.00	27.00		
01625	APPLEWISE POLYPHENOL EXTRACT - 600 mg, 30 veg. caps	21.00	15.75		
U1025		19.00	14.25		
01000	Buy 4 bottles, price each				
01039	ARGININE/ORNITHINE - 500/250, 100 caps	17.99	13.49		
00038	ARGININE/ORNITHINE POWDER - 150 grams	22.95	17.21		
	Buy 4 bottles, price each	19.00	14.25		
01624	(L)-ARGININE CAPS - 700 mg, 200 veg. caps	26.50	19.88		
	Buy 4 bottles, price each	23.25	17.44		
01617	ARTHROMAX® w/THEAFLAVINS & APRESFLEX® - 120 veg. caps	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01618	ARTHROMAX® ADVANCED w/UC-II® & APRESFLEX® - 60 caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01404	ARTHRO-IMMUNE JOINT SUPPORT - 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
00919	ARTICHOKE LEAF EXTRACT - 500 mg, 180 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
01533	ASCORBYL PALMITATE - 500 mg, 100 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
00888	ASHWAGANDHA EXTRACT (OPTIMIZED) - 60 veg. caps	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
01805	ASIAN ENERGY BOOST - 90 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01066	ASPIRIN - 81 mg, 300 enteric coated tablets	6.00	4.50		
	Buy 4 bottles, price each	5.33	4.00		
01720	ASTAXANTHIN WITH PHOSPHOLIPIDS - 4 mg, 30 softgels	16.00	12.00		
20	Buy 4 bottles, price each	14.00	10.50		
	Buy 4 bottles, price each	14.00	10.00		
00920	BENFOTIAMINE W/ THIAMINE - 100 mg, 120 veg. caps	\$19.95	\$14.96		
UUJZU					
00005	Buy 4 bottles, price each	18.60	13.95		
00925	BENFOTIAMINE (MEGA) - 250 mg, 120 veg. caps	30.00	22.50		
0.00	Buy 4 bottles, price each	27.00	20.25		
01206	BERRY COMPLETE - 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	18.67	14.00		

No.		Retail Each	Member Each	Qty	Total
01496	BERRY COMPLETE w/ACAI (ENHANCED) - 60 veg. caps	\$29.00	\$21.75		
	Buy 4 bottles, price each	26.00	19.50		
00664	BETA-CAROTENE - 25,000 IU, 100 softgels	11.25	8.44		
01622	BIFIDO GI BALANCE - 60 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01073	BILBERRY EXTRACT - 100 mg, 100 veg. caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01512	BIOACTIVE MILK PEPTIDES - 30 caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01631	BIO-COLLAGEN w/PATENTED UC-II® - 40 mg, 60 small caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01006	BIOSIL™ - 5 mg, 30 veg. caps	18.95	15.16		
01007	BIOSIL™ - 1 fl oz	31.99	25.59		
00102	BIOTIN - 600 mcg, 100 caps	7.50	5.63		
00.02	Buy 4 bottles, price each	6.50	4.88		
01709	BLACK CUMIN SEED OIL - 60 softgels	16.00	12.00		
01709	Buy 4 bottles, price each	14.00	10.50		
01710	BLACK CUMIN SEED OIL w/BIO-CURCUMIN® - 60 softgels	32.00	24.00	-	
01710					
04000	Buy 4 bottles, price each	30.00	22.50	_	_
01008	BLAST™ - 600 grams of powder	26.95	20.21	_	
70000	BLOOD PRESSURE MONITOR - ARM CUFF (medium)	99.95	64.97		
70004	BLOOD PRESSURE MONITOR - WRIST (travel size)	69.95	52.46		
01214	BLUEBERRY EXTRACT - 60 veg. caps	22.50	16.88		
	Buy 4 bottles, price each	20.00	15.00		
01438	BLUEBERRY EXTRACT w/ POMEGRANATE - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01506	BONE FORMULA (DR. STRUM'S INTENSIVE) - 300 caps	56.00	42.00		
	Buy 4 bottles, price each	50.00	37.50		
01726	BONE RESTORE - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	19.00	14.25		
01727	BONE RESTORE W/VITAMIN K2 - 120 caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01725	BONE STRENGTH FORMULA w/KOACT® - 120 caps	45.00	33.75		
	Buy 4 bottles, price each	40.00	30.00		
00313	BONE-UP® - 240 caps	28.95	21.71		
	Buy 4 bottles, price each	27.21	20.41		
01379	BOOSTER - 60 softgels	48.00	36.00		
0.0.0	Buy 4 bottles, price each	44.00	33.00		
01680	BOOSTER W/ADVANCED K2 COMPLEX (SUPER) - 60 softgels	42.00	31.50		
01000					
71664	Buy 4 bottles, price each	38.00	28.50 4.46	-	
01661	BORON - 3 mg, 100 veg. caps	5.95			
20202	Buy 4 bottles, price each	5.25	3.94		
00202	BOSWELLA - 100 caps	38.00	28.50		
24000	Buy 4 bottles, price each	30.00	22.50	_	
01802	BRAIN SHIELD™ - 60 veg. caps	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50	<u> </u>	
01253	BRANCHED CHAIN AMINO ACIDS - 90 veg. caps	19.50	14.63		
	Buy 4 bottles, price each	17.00	12.75		
01699	BREAST HEALTH FORMULA - 60 caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
00893	BRITE EYES III - 2 vials, 5 ml each	34.00	25.50		
	Buy 4 boxes, price each	32.00	24.00		
	SUB-TOTAL OF COLUMN 2				L

No.		Retail Each	Member Each	Qty	Total
01203	BROMELAIN (SPECIALLY-COATED) - 500 mg, 60 enteric coated tablets	\$21.00	\$15.75		
	Buy 4 bottles, price each	19.00	14.25		
01653 01651 01651 01693 01700 00916 01258 01258	BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID - 60 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.60	29.70		
	C				
01653	CALCIUM CITRATE w/VITAMIN D - 300 caps	\$24.00	\$18.00		
	Buy 4 bottles, price each	21.25	15.94		
01651	CALCIUM D-GLUCARATE - 200 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
01693	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC* GREEN COFFEE EXTRACT BLUEBERRY FLAVOR - 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		
01823	CALREDUCE SELECTIVE FAT BINDER - 120 mint chewable tablets	45.00	33.75		
	Buy 4 bottles, price each	38.00	28.50		
01700	CARDIO PEAK™ W/STANDARDIZED HAWTHORN & ARJUNA - 120 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00916	CARNITINE w/GLYCOCARN® (OPTIMIZED) - 60 veg. caps	36.00	27.00		
000.0	Buy 4 bottles, price each	32.00	24.00		
01532	L-CARNITINE - 500 mg, 30 veg. caps	15.00	11.25		
01002	Buy 4 bottles, price each	13.20	9.90		
01258	CARNOSOOTHE w/PICROPROTECT™ - 60 veg. caps	29.95	22.46		
01200	Buy 4 bottles, price each	27.00	20.25		
N1687	CARNOSINE (SUPER) - 500 mg, 90 veg. caps	66.00	49.50		
01687 01003	Buy 4 bottles, price each	60.00	45.00		
01003	CAT MIX - 100 grams powder	15.00	11.25		-
01003	Buy 4 jars, price each	12.00	9.00		
N1 201	CHILDREN'S FORMULA LIFE EXTENSION MIX™ - 100 chewable tablets	20.00	15.00		-
01391		18.00	13.50		
00550	Buy 4 bottles, price each CHLORELLA - 500 mg, 200 tablets	23.50	17.63		
	CHLOROPHYLLIN - 100 mg, 100 veg. caps	24.00	18.00		
013/1		20.00			
01050	Buy 4 bottles, price each		15.00	-	
	CHO-LESS™ - 90 capsules	35.00	26.25		
014//	CHROMIUM ULTRA - 100 veg. caps	24.00	18.00		
04504	Buy 4 bottles, price each	21.00	15.75	_	
01504	CHROMIUM W/CROMINEX® 3+ (OPTIMIZED) - 500 mcg, 60 veg. caps	9.00	6.75		
04.500	Buy 4 bottles, price each	8.00	6.00		
01503	CINSULIN® W/INSEA ^{2®} AND CROMINEX® 3+- 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
01818	CITRIMAX® (SUPER)- 180 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	38.00	28.50		
00818	CLA BLEND W/SESAME LIGNANS (SUPER) - 3,000 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	CLA BLEND w/GUARANA & SESAME (SUPER)-3,000 mg, 120 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.33	28.75	L	
01707	COFFEEGENIC® WEIGHT MANAGEMENT™ w/GREEN COFFEE EXTRACT - 90 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
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01896	COGNITEX® w/BRAIN SHIELD™ - 90 softgels	60.00	45.00		
01896		60.00 52.00	45.00 39.00		

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01897	COGNITEX® w/PREGNENOLONE & BRAIN SHIELD™ - 90 softgels	\$62.00	\$46.50		
	Buy 4 bottles, price each	53.00	39.75		
	Buy 8 bottles, price each	50.00	37.50		
01421	COGNITEX® BASICS - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
01659	COGNIZIN® CDP CHOLINE CAPS - 250 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01735	COMPLETE B-COMPLEX - 60 veg. caps	10.00	7.50		
01100	Buy 4 bottles, price each	9.00	6.75		
01798	COMPREHENSIVE NUTRIENT PACKS ADVANCED - 30 packs	90.00	67.50		
01730	· · · · · · · · · · · · · · · · · · ·	82.00	61.50		
00110	Buy 4 boxes, price each			_	
00119	COPPER CAPSULES - 2 mg, 100 caps	9.91	7.43		
00949	COQ10 w/ #-LIMONENE (SUPER-ABSORBABLE) - 50 mg, 60 softgels	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
	Buy 10 bottles, price each	20.00	15.00		
00950	COQ10 w/ d-LIMONENE (SUPER-ABSORBABLE) - 100 mg, 100 softgels	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
	Buy 10 bottles, price each	56.00	42.00		
01226	COQ10 (SUPER-UBIQUINOL) - 100 mg, 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
	Buy 10 bottles, price each	48.00	36.00		
01733	COQ10 w/BIOPQQ® (SUPER UBIQUINOL) - 100 mg, 30 softgels	54.00	40.50		
	Buy 4 bottles, price each	50.00	37.50		
	Buy 10 bottles, price each	46.00	34.50		
01426	COQ10 W/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-100 mg, 60 softgels	62.00	46.50		
01420	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01425	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-50 mg, 100 softgels	58.00	43.50		
	Buy 4 bottles, price each	53.00	39.75		
	Buy 10 bottles, price each	50.00	37.50		
01427	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)-50 mg, 30 softgels	20.00	15.00		
01 121	Buy 4 bottles, price each	18.00	13.50		
01431	COQ10 w/ENH MITOCHONDRIAL SUPPORT** (SUPER UBIQUINOL)-200 mg, 30 softgels	62.00	46.50		
01431			42.00		
	Buy 4 bottles, price each	56.00			
04.050	Buy 10 bottles, price each	52.00	39.00	_	
01053	CORIOLUS SUPER STRENGTH - 600 mg, 150 veg. caps	99.95	74.96	_	
80154	COSMESIS LIGHTENING CREAM - 1 oz jar	65.00	48.75		
	Buy 2 bottles, price each	57.00	42.75		
80152	COSMESIS ADVANCED TRIPLE PEPTIDE SERUM - 1 oz bottle	65.00	48.75		
	Buy 2 bottles, price each	57.00	42.75		
80140	COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS33 OZ	49.00	36.75		
	Buy 2 bottles, price each	42.00	31.50		
80139	COSMESIS AMBER SELF MICRODERMABRASION - 2 0Z	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80118	COSMESIS ANTI-AGING MASK - 2 oz	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
80151	COSMESIS ANTI-AGING REJUVENATING FACE CREAM - 2 oz jar	65.00	48.75		
	w/COFFEE EXTRACT Buy 2 jars, price each	57.00	42.75		
80153	COSMESIS ANTI-AGING REJUVENATING SCALP SERUM - 2 oz bottle	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
80134	COSMESIS ANTI-GLYCATION SERUM - 1 OZ W/BLUEBERRY & POMEGRANATE EXTRACTS	33.00	24.75		
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SUB-TOTAL OF COLUMN 3

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
	C CONTINUED				
80133	COSMESIS ANTIOXIDANT FACIAL MIST - 2 0Z	\$32.00	\$24.00		
	Buy 2 bottles, price each	30.40	22.80		
30127	COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM - 2 oz	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		
30128	COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB - 2 oz	59.00	44.25		
	Buy 2 jars, price each	51.92	38.94		
30117	COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM - 2 OZ	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
30121	COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB - 2 OZ	58.00	43.50		
	Buy 2 jars, price each	51.04	38.28		
30105	COSMESIS ANTI-REDNESS & ADULT BLEMISH LOTION - 1 OZ	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
30147	COSMESIS BIOFLAVONOID CREAM - 1 oz jar	46.00	34.50		
	Buy 2 jars, price each	39.00	2925		
30144	COSMESIS BROCCOLI SPROUT CREAM - 1 0Z	46.00			
	Buy 2 jars, price each	39.00	29.25		
30120	COSMESIS CORRECTIVE CLEARING MASK - 2 oz	64.50			
30120	Buy 2 jars, price each	56.76	42.57		
30141	COSMESIS DNA REPAIR CREAM - 1 oz jar	49.00			
30141	Buy 2 jars, price each	42.00	31.50		
80108		74.95			
00100	COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 0Z				
80123	Buy 2 bottles, price each	65.95	49.46		
	COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM - 2 0Z	69.50			
20407	Buy 2 jars, price each	61.16			
80107	COSMESIS FINE LINE-LESS - 1 0Z	74.50			
00101	Buy 2 bottles, price each	65.56	49.17		
80131	COSMESIS HAIR SUPPRESS FORMULA - 4 0Z	59.00			
	Buy 2 bottles, price each	51.92			
80137		53.00			
	Buy 2 jars, price each	45.43	34.07		
30115	COSMESIS HEALING MASK - 2 oz	64.50			
	Buy 2 bottles, price each	56.76	42.57		
30102	COSMESIS HEALING VITAMIN K CREAM - 1 oz	79.50	59.63		
	Buy 2 bottles, price each	69.96	52.47		
30109	COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80110	COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER - 1 0Z	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80138	COSMESIS HYDRATING ANTIOXIDANT FACE MIST - 4 0Z	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50		
80103	COSMESIS LIFTING & TIGHTENING COMPLEX - 1 0Z	74.50	55.88		
	Buy 2 tubes, price each	65.56	49.17		
80146	COSMESIS LYCOPENE CREAM - 1 oz jar	28.00	21.00		
	Buy 2 jars, price each	25.40	19.05		
30135	COSMESIS MELATONIN CREAM - 1 OZ	33.00	24.75		
	Buy 2 jars, price each	27.10	20.33		
30114	COSMESIS MILD FACIAL CLEANSER - 8 OZ	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
30122	COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM - 2 oz	64.00			
	Buy 2 jars, price each	56.32	42.24		
30111	COSMESIS PIGMENT CORRECTING CREAM - 1/2 oz	74.00	55.50		
20111	Buy 2 bottles, price each	65.12	48.84		
	24, 2 350000, priod 60011	00.12	70.07		
		1			

		Each	Each	ĺ	Total
80106	COSMESIS REJUVENATING SERUM - 1 OZ	\$74.50	\$55.88		
	Buy 2 bottles, price each	65.56	49.17		
80150	COSMESIS RENEWING EYE CREAM - 1/2 oz	65.00	48.75		
	Buy 2 jars, price each	57.00	42.75		
30142	COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 OZ	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
30112	COSMESIS SKIN LIGHTENING SERUM - 1/2 oz	85.00	63.75		\vdash
	Buy 2 bottles, price each	74.80	56.10		
30130	COSMESIS SKIN STEM CELL SERUM - 1 oz	74.00	55.50		\vdash
00100	Buy 2 bottles, price each	69.00	51.75		
30143	COSMESIS STEM CELL CREAM W/ALPINE ROSE - 1 oz jar	66.00	49.50		\vdash
00143					
204.40	Buy 2 jars, price each	58.00	43.50	_	<u> </u>
30148	COSMESIS TIGHTENING & FIRMING NECK CREAM - 2 oz jar	39.00	29.25		_
	Buy 2 jars, price each	35.00	26.25		
80116	COSMESIS ULTRA LIP PLUMPER - 1/3 oz	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	COSMESIS ULTRA WRINKLE RELAXER - 1 OZ	89.95	67.46		
	Buy 2 bottles, price each	79.76	59.82		
80113	COSMESIS UNDER EYE REFINING SERUM - 1/2 OZ	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
30104	COSMESIS UNDER EYE RESCUE CREAM - 1/2 oz	74.50	55.88		\vdash
	Buy 2 bottles, price each	65.56	49.17		
30129	COSMESIS VITAMIN C SERUM - 1 0Z	85.00	63.75	_	
00123		74.80	56.10		
00100	Buy 2 bottles, price each				\vdash
30136	COSMESIS VITAMIN D LOTION - 4 OZ	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25	_	<u> </u>
80145	COSMESIS VITAMIN E-ESSENTIAL CREAM - 1 0Z	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
80149	COSMESIS YOUTH SERUM - 1 OZ	65.00	48.75		
	Buy 2 bottles, price each	57.00	42.75		
00862	CRAN-MAX® - 500 mg, 60 veg. caps	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
)1424	CRAN-MAX® with UTI <i>ROSE</i> ™ (OPTIMIZED) - 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
1529	CREATINE CAPSULES - 120 veg. caps	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
1746	CREATINE WHEY GLUTAMINE POWDER - 454 grams (vanilla)	30.00	22.50		\vdash
, , , , , ,	Buy 4 jars, price each	27.00	20.25		
1429		39.00	29.25		\vdash
11429	CR MIMETIC LONGEVITY FORMULA - 60 veg. caps				
00.40	Buy 4 bottles, price each	36.00	27.00		
3840	CRWAY GREAT GLUCOSE CONTROL CD	98.00	82.00	_	_
CRWAY	CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE	195.00	195.00		
00407	CURCUMIN® (SUPER BIO) - 400 mg, 60 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
1808	CURCUMIN® w/GINGER & TURMERONES (ADVANCED BIO)-30 softgels	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
1804	CYTOKINE SUPPRESS™ w/EGCG - 30 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
	D				
0658	7-KETO® DHEA METABOLITE - 25 mg, 100 caps	\$28.00	\$21.00		
. 5000	Buy 4 bottles, price each	24.00	18.00		
1//70		40.00	30.00	\vdash	\vdash
01479	7-KETO® DHEA METABOLITE - 100 mg, 60 veg. caps				
	Buy 4 bottles, price each	36.00	27.00		

No.		Retail Each	Member Each	Qty	Tota
01640	DHA (VEGETARIAN SOURCED) - 30 veg. softgels	\$20.00	\$15.00		
	Buy 4 bottles, price each	18.00	13.50		
00607	DHEA - 25 mg, 100 tablets (dissolve in mouth)	14.00	10.50		
	Buy 4 bottles, price each	11.75	8.81		
01478	DHEA COMPLETE - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	43.20	32.40		
00335	DHEA - 25 mg, 100 caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
00454	DHEA - 15 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	12.00	9.00		
00882	DHEA - 50 mg, 60 caps	19.00	14.25		
00002	Buy 4 bottles, price each	17.00	12.75		
01689	DHEA - 100 mg, 60 veg. caps	24.00	18.00		
01000	Buy 4 bottles, price each	22.00	16.50		
01358	DIGEST RC - 30 tablets	19.95	14.96		
11330		17.00			
24.070	Buy 4 boxes, price each		12.75		H
)1272	DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps	18.95	14.21		
2467	Buy 4 bottles, price each	16.00	12.00	H	\vdash
)1671	D,L-PHENYLALANINE CAPSULES - 500 mg, 100 veg. caps	18.75	14.06		
	Buy 4 bottles, price each	16.00	12.00	_	L
01540	DMAE BITARTRATE - 150 mg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
00059	DMG - 125 mg, 60 tablets	24.80	18.60		
	Buy 4 boxes, price each	22.69	17.02		
01570	DNA PROTECTION FORMULA - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	32.00	24.00		
00544	DOG MIX - 100 grams powder	19.50	14.63		
	Buy 4 jars, price each	16.00	12.00		
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 0Z	39.95	29.96		
	Buy 4 bottles, price each	32.00	24.00		
00320	DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 OZ	24.95	18.71		Г
	Buy 4 bottles, price each	22.00	16.50		
00899	DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 OZ	39.95	29.96		Г
	Buy 4 jars, price each	38.95	29.21		
	E				
	ECHINACEA EXTRACT - 250 mg, 60 veg. caps	\$14.35	\$10.76		Г
01528					
01528					
	Buy 4 bottles, price each	12.50	9.38		
	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels	12.50 56.00	9.38 42.00		
01498	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each	12.50 56.00 52.00	9.38 42.00 39.00		
01528 01498 00997	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps	12.50 56.00 52.00 54.00	9.38 42.00 39.00 40.50		
01498 00997	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each	12.50 56.00 52.00 54.00 48.00	9.38 42.00 39.00 40.50 36.00		
01498 00997	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels	12.50 56.00 52.00 54.00 48.00 19.95	9.38 42.00 39.00 40.50 36.00 14.96		
01498 00997 00625	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each	12.50 56.00 52.00 54.00 48.00 19.95 18.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50		
01498 00997 00625	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00		
01498 00997 00625 01737	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00		
01498 00997 00625 01737	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00		
01498 00997 00625 01737	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00 20.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00 15.00		
01498 00997 00625 01737	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each EXTRAORDINARY ENZYMES - 60 caps	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00		
01498 00997 00625 01737	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each EXTRAORDINARY ENZYMES - 60 caps Buy 4 bottles, price each	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00 20.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00 15.00		
01498	Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each EXTRAORDINARY ENZYMES - 60 caps	12.50 56.00 52.00 54.00 48.00 19.95 18.00 36.00 32.00 20.00 18.00 26.00	9.38 42.00 39.00 40.50 36.00 14.96 13.50 27.00 24.00 15.00 19.50		

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
	F				
†01054	FACE MASTER® PLATINUM	\$199.00	\$199.00		
00965	FAST-ACTING JOINT FORMULA - 30 caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01717	FAST-C® w/DIHYDROQUERCETIN - 120 veg. tabs	26.00	19.50		
	Buy 4 bottles, price each	24.00	18.00		
20053	FEM DOPHILUS® - 30 caps	25.95	19.46		
20055	FEM DOPHILUS® - 60 caps	39.95	29.96		
01064	FEMMENESSENCE MACAPAUSE® - 120 veg. caps	34.99	26.24		
01728	FERNBLOCK® w/RED ORANGE COMPLEX (ENHANCED) - 30 veg. caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01670		16.00	12.00		
01010	Buy 4 bottles, price each	14.00	10.50		
	Buy 10 bottles, price each	13.00	9.75		
00718	FIBRINGEN RESIST™ - 30 veg. caps	49.00	36.75		
307 10		44.00			
01749	Buy 4 bottles, price each		33.00		\vdash
		11.67	8.75		-
01806		33.00	24.75		
0.1.100	Buy 4 boxes, price each	30.00	22.50		
01439	FOLATE (OPTIMIZED) (L-METHYLFOLATE) 1,000 mcg - 100 veg. caps		21.00		
	Buy 4 bottles, price each	25.00	18.75		
01641	FOLIC ACID + B12 CAPSULES - 200 veg. caps	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01544	FORSKOLIN - 10 mg, 60 veg.caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01513	FUCOIDAN w/MARITECH® 926 (OPTIMIZED) - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
00993	FUCOXANTHIN-SLIM™ - 90 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.00	29.25		
	G				
00559	GAMMA E TOCOPHEROL/TOCOTRIENOLS - 60 softgels	\$42.00	\$31.50		
	Buy 4 bottles, price each	37.00	27.75		
00759	GAMMA E TOCOPHEROL W/SESAME LIGNANS - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01394	(OPTIMIZED) GARLIC - 200 veg. caps	24.95	18.71		
	Buy 4 bottles, price each	21.00	15.75		
01301	GH PITUITARY SUPPORT DAY FORMULA - 120 tabs	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01302	GH PITUITARY SUPPORT NIGHT FORMULA - 120 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.50	16.88		
*01228	GINGER FORCE - 60 softgels	31.95	23.96		
01658	GINKGO BILOBA CERTIFIED EXTRACT™ - 120 mg, 365 veg. caps	46.00	34.50		
	Buy 2 bottles, price each	43.50	32.63		
01648	GINKGO EXTRACT 28/7 (SUPER) - 120 mg, 100 veg. caps	29.00	21.75		\vdash
	Buy 4 bottles, price each	26.50	19.88		
00756	GLA WITH SESAME LIGNANS (MEGA) - 60 softgels	19.50	14.63		\vdash
JU1 JU					
00345	Buy 4 bottles, price each	18.00	13.50		\vdash
	(L) GLUTAMINE CAPSULES - 500 mg, 100 caps	14.95	11.21		
00040	Buy 4 bottles, price each	13.50	10.13		_
		22.00	16.50		
	(L)-GLUTAMINE POWDER - 100 grams				
00141	(L)-GLUTAMINE POWDER - 100 grams Buy 4 bottles, price each	20.00	15.00		
00141	·· · · · · · · · · · · · · · · · · · ·				
00141	Buy 4 bottles, price each	20.00	15.00		

SUB-TOTAL OF COLUMN 8

No.		Retail Each	Member Each	Qty	Tota
	G CONTINUED				
01541	GLUTATHIONE, CYSTEINE & C - 100 veg. caps	\$20.00	\$15.00		
	Buy 4 bottles, price each	18.00	13.50		
00314	L-GLUTATHIONE (MEGA) - 250 mg, 60 caps	39.64	29.73		
01731	GLYCEMICPRO™ TRANSGLUCOSIDASE - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	42.00	31.50		
01669	GLYCINE - 1,000 mg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.80	8.10		
01091	GRAPE EXTRACT w/RESVERATROL (WHOLE) - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01411	GRAPE SEED EXTRACT w/RESVERATROL & PTEROSTILBENE - 100 mg, 60 veg. caps	36.00			\vdash
01111	Buy 4 bottles, price each	34.00	25.50		
01604	GREEN COFFEE EXTRACT COFFEEGENIC® - 200 mg, 90 veg. caps	22.00			\vdash
71004					
04.000	Buy 4 bottles, price each	20.00	15.00		H
01620	GREEN COFFEE EXTRACT COFFEEGENIC® - 400 mg, 90 veg. caps	32.00			
	Buy 4 bottles, price each	28.00	21.00		L
00953	GREEN TEA EXTRACT (MEGA) - lightly caffeinated - 100 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	24.00	18.00		L
00954	GREEN TEA EXTRACT (MEGA) - decaffeinated - 100 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	24.00	18.00		
01545	GUTSY CHEWY DIGESTIVE (CITRUS FLAVOR) - 8 tablets	11.50	8.63		
01546	GUTSY CHEWY DIGESTIVE (WILD BERRY FLAVOR) - 8 tablets	11.50	8.63		
	Н				
01074	5 HTP - 100 mg, 60 caps	\$27.95	\$20.96		
01738	HCA (GARCINIA) - 90 veg. caps	17.00	12.75		Г
	Buy 4 bottles, price each	15.00	11.25		
01393	HEPATOPRO - 900 mg, 60 softgels	50.00	37.50		Т
	Buy 4 bottles, price each	46.00	34.50		
01435	HOMOCYSTEINE RESIST - 100 veg caps	24.00			\vdash
01400	Buy 4 bottles, price each	21.60	16.20		
04507					H
01527	HUPERZINE A - 200 mcg, 60 veg caps	40.00			
	Buy 4 bottles, price each	36.00	27.00		L
00661	HYDRODERM® - 1 0Z	79.95			
	Buy 2 bottles, price each	65.33	49.00		
	l .				
01060	i26® HYPERIMMUNE EGG - 140 grams powder	\$54.99	\$46.75		
01704	IMMUNE MODULATOR W/TINOFEND® - 60 veg. caps	17.00	12.75		
	Buy 4 bottles, price each	15.00	11.25		
00955	IMMUNE PROTECT W/PARACTIN® - 30 veg. caps	29.50	22.13		
	Buy 4 bottles, price each	26.55	19.91		
01049	INNERPOWER™ - 555 grams powder	42.00	31.50		Г
01674	INOSITOL CAPSULES - 1,000 mg, 360 veg. caps	62.00	46.50		
	Buy 4 bottles, price each	58.00	43.50		
01292	INTEGRA-LEAN® AFRICAN MANGO IRVINGIA - 150 mg, 60 veg. caps	28.00	21.00		\vdash
J 1 L J L	Buy 4 bottles, price each				
01677	, 1	24.00	18.00		\vdash
01677	IRON PROTEIN PLUS - 300 mg, 100 caps	28.00	21.00		
01492	Buy 4 bottles, price each IRVINGIA W/PHASE 3™ - 120 veg. caps	26.00 56.00	19.50 42.00		H
	CALORIE CONTROL COMPLEX (OPTIMIZED AFRICAN MANGO)				
	Buy 4 bottles, price each	48.00	36.00		
	J, K				
00056	JARRO-DOPHILUS EPS™ - 60 veg. caps	\$22.95	\$17.21		

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Tota
01724	K w/ADVANCED K2 COMPLEX (SUPER) - 90 softgels	\$30.00	\$22.50		
	Buy 4 bottles, price each	27.00	20.25		
01600	KRILL HEALTHY JOINT FORMULA - 30 softgels	32.00	24.00		Г
	Buy 4 bottles, price each	29.00	21.75		
01050	KRILL OIL PHOSPHOMEGA™ - 60 softgels	33.95	25.46		
00316	KYOLIC® GARLIC FORMULA 102 - 200 caps	26.45	19.84		Т
00214	KYOLIC® GARLIC FORMULA 105 - 200 caps	27.45	20.59		Н
00789	KYOLIC® RESERVE - 600 mg, 120 caps	27.95	20.96		\vdash
30100	L	21.00	20.00		
01681	LACTOFERRIN (APOLACTOFERRIN) CAPS - 60 caps	\$52.00	\$39.00		Г
	Buy 4 bottles, price each	48.00	36.00		
00020	LECITHIN - 16 oz. granules	15.00	11.25		Н
00020	Buy 4 jars, price each	12.50	9.38		
01855	LIFE EXTENSION MIX™ – 315 tablets	98.00	73.50		\vdash
11000					
	Buy 4 bottles, price each	86.00	64.50		
11057	Buy 10 bottles, price each	69.50	52.13		\vdash
01857	LIFE EXTENSION MIX™ W/EXTRA NIACIN - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		_
01854	LIFE EXTENSION MIX™ – 490 caps	110.00	82.50		
	Buy 4 bottles, price each	98.00	73.50		
	Buy 10 bottles, price each	85.00	63.75		
01856	LIFE EXTENSION MIX™ POWDER - 14.81 oz	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	72.00	54.00		
01865	LIFE EXTENSION MIX™ - 315 tablets w/o copper	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
01867	LIFE EXTENSION MIX™ W/EXTRA NIACIN 315 tablets w/o copper	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
01864	LIFE EXTENSION MIX™ - 490 caps w/o copper	110.00	82.50		
	Buy 4 bottles, price each	98.00	73.50		
	Buy 10 bottles, price each	85.00	63.75		
01866	LIFE EXTENSION MIX™ POWDER - 14.81 oz w/o copper	98.00	73.50		Н
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	72.00	54.00		
01608	LIVER EFFICIENCY FORMULA - 30 veg. caps	18.00	13.50		\vdash
51000	Buy 4 bottles, price each	16.00	12.00		
01639		22.00	16.50		\vdash
51008	5-LOX INHIBITOR W/APRESFLEX® - 100 mg, 60 veg. caps Buy 4 bottles, price each		15.00		
01678	* **	20.00			\vdash
σισισ	L-LYSINE - 620 mg, 100 veg. caps	9.00	6.75		
00455	Buy 4 bottles, price each	8.00	6.00		\vdash
00455	LYCOPENE EXTRACT (MEGA) - 15 mg, 90 softgels	35.00	26.25		
	Buy 4 bottles, price each	30.00	22.50		
11005		\$22.00	¢16.50		
01885	MACUGUARD™ OCULAR SUPPORT - 60 softgels	\$22.00	\$16.50		
11000	Buy 4 bottles, price each	19.80	14.85		\vdash
01886	MACUGUARD™ OCULAR SUPPORT w/ASTAXANTHIN - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		<u> </u>
01459	MAGNESIUM CAPS - 500 mg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
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No.		Retail Each	Member Each	Qty	Tota
01682	MAGNESIUM CITRATE - 160 mg, 100 veg. caps	\$9.00	\$6.75		
	Buy 4 bottles, price each	7.50	5.63		
)1668	MELATONIN - 300 mcg, 100 veg. caps	5.75	4.31		
	Buy 4 bottles, price each	5.00	3.75		
01083	MELATONIN - 500 mcg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00329	MELATONIN - 1 mg, 60 caps	5.00	3.75		
	Buy 4 bottles, price each	4.63	3.47		
00330	MELATONIN - 3 mg, 60 caps	8.00	6.00		
	Buy 4 bottles, price each	6.88	5.16		
01786	MELATONIN TIME RELEASE - 3 mg, 60 veg. tabs	12.00	9.00		Т
01700	Buy 4 bottles, price each	11.00	8.25		
0331	MELATONIN - 10 mg, 60 caps	28.00	21.00		Н
,0001	Buy 4 bottles, price each	24.00	18.00		
0332	MELATONIN - 3 mg, 60 veg. lozenges	8.00	6.00		\vdash
00002	Buy 4 bottles, price each	6.88	5.16		
)1734	MELATONIN (Fast Acting Liquid) – 3 mg (Natural Citrus-Van)	12.00	9.00		H
01/34		11.00	8.25		
01787	Buy 4 bottles, price each				H
11/8/	MELATONIN TIME RELEASE - 300 mcg, 100 veg. tabs	12.00	9.00		
0.700	Buy 4 bottles, price each	11.00	8.25		H
11788	MELATONIN TIME RELEASE - 750 mcg, 60 veg. tablets	8.00	6.00		
	Buy 4 bottles, price each	7.00	5.25		L
1536	METHYLCOBALAMIN - 1 mg, 60 veg. lozenges (vanilla)	9.95	7.46		
	Buy 4 bottles, price each	8.00	6.00		L
1537	METHYLCOBALAMIN - 5 mg, 60 veg. lozenges (vanilla)	32.00	24.00		
	Buy 4 bottles, price each	25.00	18.75		
	Buy 10 bottles, price each	23.00	17.25		
0709	MIGRA-EEZE™ (BUTTERBUR) - 60 softgels	29.50	22.13		
	Buy 4 bottles, price each	26.33	19.75		
1800	MIGRA-MAG w/BRAIN SHIELD™ - 90 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
1522	MILK THISTLE (CERTIFIED EUROPEAN) - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
1822	MILK THISTLE (EUROPEAN) - 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
1817	MILK THISTLE (EUROPEAN) - 120 softgels	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
1698	MIRAFORTE w/STANDARDIZED LIGNANS (SUPER) - 120 caps	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
1769	MITOCHONDRIAL BASICS w/BIOPQQ® - 30 caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
1768	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ® - 120 caps	94.00	70.50		Т
	Buy 4 bottles, price each	84.00	63.00		
00065	MK-7 - 90 mcg, 60 softgels	28.00	21.00		Н
5500	Buy 4 bottles, price each	25.00	18.75		
1279	MOUTHWASH W/POMEGRANATE - 16 oz	18.50	13.88		\vdash
11413		17.00	12.75		
04E1	Buy 4 bottles, price each			_	\vdash
00451	MSM (METHYLSULFONYLMETHANE) - 1,000 mg, 100 caps	14.00	10.50		

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
	N				
01534	N-ACETYL-L-CYSTEINE - 600 mg, 60 veg. caps	\$14.00	\$10.50		
	Buy 4 bottles, price each	13.50	10.13		
00066	NATTOKINASE - 60 softgels	25.50	19.13		
01807	NATURAL APPETITE SUPPRESS (ADVANCED) - 60 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
00984	NATURAL BP MANAGEMENT - 60 tablets	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01892	NATURAL ESTROGEN - 60 veg. tabs	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
01221	NATURAL FEMALE SUPPORT - 30 veg. caps	28.00			
	Buy 4 bottles, price each	24.00			
01471	NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps	39.00			
01111	Buy 4 bottles, price each	36.00			
01626	NATURAL SEX FOR WOMEN * 50+ (ADVANCED) - 90 veg. caps	59.00			
01020		45.33			
)1444)1551)1511	Buy 4 bottles, price each	13.00			
01444	NATURAL SLEEP® - 60 veg. caps				
04554	Buy 4 bottles, price each	10.00	7.50		
01551	NATURAL SLEEP® w/ MELATONIN (ENHANCED) - 30 caps	22.00			
	Buy 4 bottles, price each	20.00			_
01511	NATURAL SLEEP® w/o MELATONIN (ENHANCED) - 30 caps	20.00			
	Buy 4 bottles, price each	18.00			_
01445	NATURAL SLEEP® MELATONIN - 5 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00987	NATURAL STRESS RELIEF - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01603	NEURO-MAG™ MAGNESIUM L-THREONATE - 90 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
01602	NEURO-MAG™ L-THREONATE W/CALCIUM & VITAMIN D	40.00	30.00		
	225 grams - Lemon flavor				
	Buy 4 bottles, price each	36.00	27.00		
00373	NO-FLUSH NIACIN - 800 mg, 100 caps	19.00	14.25		
	Buy 4 bottles, price each	17.00	12.75		
	0				
01623	OLIVE LEAF VASCULAR SUPPORT - 500 mg, 60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
01819	OMEGA WITH KRILL & ASTAXANTHIN (SUPER) - 120 softgels	45.00	33.75		
	Buy 4 bottles, price each	42.00	31.50		
	Buy 10 bottles, price each	38.00	28.50		
01483	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 60 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
	Buy 10 bottles, price each	14.00	10.50		
01482	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 120 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01484	OMEGA 3 EPA/DHA W/SESAME LIGNANS & -120 enteric coated softgels OLIVE FRUIT EXTRACT (SUPER)	34.00	25.50		
	Buy 4 bottles, price each	31.00	23.25		
	Buy 10 bottles, price each	28.00	21.00		

SUB-TOTAL OF COLUMN 11

Buy 4 bottles, price each

SUB-TOTAL OF COLUMN 12

11.95

8.96

No.		Retail Each	Member Each	Qty	Tota
	• CONTINUED				
01485	OMEGA 3 EPA/DHA W/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 60 enteric coated softgels	\$20.00	\$15.00		
	Buy 4 bottles, price each	18.00	13.50		
	Buy 10 bottles, price each	16.00	12.00		
01619	OMEGA 3 EPA/DHA W/SESAME LIGNANS & - 240 softgels	32.00	24.00		
	OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL)				
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01801	ONE-PER-DAY - 60 tablets	22.00	16.50		Г
	Buy 4 bottles, price each	20.00	15.00		
01328	ONLY TRACE MINERALS - 90 veg. caps	15.00	11.25		Н
	Buy 4 bottles, price each	12.50	9.38		
	P	12.00	0.00		
01789	PALMETTOGUARD™ SAW PALMETTO w/BETA SITOSTEROL -30 softgels	\$15.00	\$11.25		
01100	Buy 12 bottles, price each	12.00	9.00		
00073	PANCREATIN - 500 mg, 50 caps	13.22	9.92		H
01323	PEAK ATP® WITH GLYCOCARN® - 60 veg. caps	54.00	40.50		H
01323		50.00			
00342	Buy 4 bottles, price each		37.50	_	H
	PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder	109.95	82.46		H
01811 F 00673 F	PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps	79.95	59.96	_	L
	PEONY IMMUNE - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		L
	PGX™ PLUS MULBERRY (WELLBETX®) -180 caps	34.95	26.21		L
00865	PHARMA GABA® - 60 chewable tablets	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
01676	PHOSPHATIDYLSERINE CAPS - 100 mg, 100 veg. caps	54.00	40.50		
	Buy 4 bottles, price each	48.00	36.00		
01390	PHOSPHOMEGA® - 60 softgels	39.95	26.96		
01436	POLICOSANOL - 10 mg, 60 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	15.00	11.25		
01423	POMEGRANATE™ (FULL-SPECTRUM) - 30 softgels	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
00956	POMEGRANATE EXTRACT - 30 veg. caps	19.50	14.63		Г
	Buy 4 bottles, price each	17.55	13.16		
01797	POMI-T® - 60 veg. caps	33.33	25.00		Т
	Buy 4 bottles, price each	30.00	22.50		
00577	POTASSIUM IODIDE - 1 box, 14 tablets	6.95	5.21		Н
	Buy 4 boxes, price each	5.25	3.94		
01500	PQQ CAPS W/BIOPQQ® - 10 mg, 30 veg. caps	24.00	18.00		H
01000	Buy 4 bottles, price each	22.00	16.50		
01647	PQQ CAPS W/BIOPQQ® - 20 mg, 30 veg. caps	40.00	30.00		\vdash
01041		36.00	27.00		
00000	Buy 4 bottles, price each			_	H
00302	PREGNENOLONE - 50 mg, 100 caps	26.00	19.50		
00700	Buy 4 bottles, price each	22.00	16.50	_	H
00700	PREGNENOLONE - 100 mg, 100 caps	30.00	22.50		
++0.0	Buy 4 bottles, price each	27.00	20.25	_	L
^*U1373	PRELOX® NATURAL SEX FOR MEN® - 60 tablets	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		_
01576	PREVAGEN® - 10 mg, 30 caps	60.00	45.00		L
01577	PREVAGEN® ES- 20 mg, 30 caps	70.00	52.50		L
00525	PROBOOST THYMIC PROTEIN A™ - 4 mcg, 30 packets	59.95	44.96		

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	To
01441	PROGESTACARE FOR WOMEN - 4 oz cream	\$35.00	\$26.25		
	Buy 4 bottles, price each	32.00	24.00		
1898	PROSTATE FORMULA (ULTRA NAT) 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
1742	PROTEIN-ISOLATE (WHEY) VANILLA - 1 lb. powder	30.00	22.50		Г
	Buy 4 jars, price each	27.00	20.25		Г
1743	PROTEIN-ISOLATE (WHEY) CHOCOLATE - 1 lb. powder	30.00	22.50		Г
	Buy 4 jars, price each	27.00	20.25		
1770	PROTEIN CONCENTRATE (New Zealand Whey) Vanilla - 520 gr	30.00	22.50		Г
	Buy 4 bottles, price each	26.60	19.95		
1771	PROTEIN CONCENTRATE (New Zealand Whey) Chocolate - 660 gr	30.00	22.50		Н
	Buy 4 bottles, price each	26.60	19.95		
1812	PROVINAL® PURIFIED OMEGA-7 - 30 softgels	27.00	20.25		H
1012		24.00	18.00		
1500	Buy 4 bottles, price each				H
1508	PTEROPURE® - 50 mg Pterostilbene 60 veg. caps	32.00	24.00		H
1507	Buy 4 bottles, price each	30.00	22.50		H
1587	PURE PLANT PROTEIN - Veg. Vanilla 540 grams powder	38.00	28.50		
	Buy 4 jars, price each	35.00	26.25		L
1637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT-100 mg, 60 veg. caps	64.00	48.00		L
	Buy 4 bottles, price each	60.00	45.00		L
1217	PYRIDOXAL 5'-PHOSPHATE - 100 mg, 60 veg. caps	22.00	16.50		L
	Buy 4 bottles, price each	19.80	14.85		L
	Q, R				
01309	QUERCETIN (OPTIMIZED) - 250 mg, 60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
1030	RED YEAST RICE (Bluebonnet)- 600 mg, 60 veg. caps	16.95	13.56		
0605	REGIMINT - 60 enteric-coated caps	19.95	14.96		
	Buy 4 bottles, price each	18.67	14.00		
1708	REISHI EXTRACT MUSHROOM COMPLEX - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
1448	REJUVENEX® BODY LOTION - 6 OZ	24.00	18.00		Г
	Buy 4 tubes, price each	19.80	14.85		
	Buy 8 tubes, price each	17.00	12.75		
1621	REJUVENEX® FACTOR FIRMING SERUM - 1.7 oz	65.00	48.75		H
1021	Buy 2 bottles, price each	50.66	38.00		H
	Buy 6 bottles, price each	38.52	28.89		
1220		52.00	39.00		H
1220	REJUVENEX® (ULTRA) - 2 0Z	48.00			
	Buy 2 jars, price each		36.00		
	Buy 4 jars, price each	44.00	33.00		H
0070	Buy 8 jars, price each	39.93	29.95		H
0676	REJUVENIGHT® (ULTRA) - 2 0Z	39.95	29.96		H
	Buy 4 jars, price each	36.00	27.00		L
1410	RESVERATROL W/PTEROSTILBENE - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		L
1430	RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED) - 250 mg, 60 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	41.33	31.00		
0889	RHODIOLA EXTRACT - 250 mg, 60 veg. caps	11.75	8.81		
	Buy 4 bottles, price each	10.58	7.94		Ĺ
0972	(D) RIBOSE POWDER - 150 grams	27.50	20.63		Ħ
	Buy 4 jars, price each	24.75	18.56		H
	Say . jaio, piloo odoli	27.10	10.00		
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No.		Retail Each	Member Each	Qty	Tota
01473	(D) RIBOSE TABLETS - 100 veg. tabs	\$32.00	\$24.00		
	Buy 4 bottles, price each	28.00	21.00		
01609	RICH REWARDS® BREAKFAST GROUND COFFEE - 12 oz. bag	13.00	9.75		
01729	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag	15.00	11.25		
	Natural Vanilla				
01730	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag	15.00	11.25		
	Natural Mocha				
01612	RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE-12 oz. bag	13.00	9.75		
01610	RICH REWARDS™ DECAFFEINATED ROAST GROUND COFFEE -12 oz. bag	14.00	10.50		
01712	RICH REWARDS™ BLACK BEAN VEGETABLE SOUP - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01530	RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01705	RICH REWARDS™ LENTIL VEGETABLE SOUP - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01810	RICH REWARDS™ MUNG BEAN SOUP W/TURMERIC - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01820	RICH REWARDS™ PROTEIN COFFEE CREAMER - Vanilla - 270 grams	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01208	R-LIPOIC ACID (SUPER) - 240 mg, 60 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	45.00	33.75		
00070	RNA CAPSULES - 500 mg, 100 caps	17.95	13.46		
	Buy 4 bottles, price each	16.16	12.12		
	S				
01432	SAFFRON w/SATIEREAL® (OPTIMIZED) - 60 veg. caps	\$36.00	\$27.00		
	Buy 4 bottles, price each	32.00	24.00		
00358	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets	16.00	12.00		
	Buy 8 boxes, price each	14.00	10.50		
00453	SAME (S-ADENOSYL-METHIONINE) – 200 mg, 50 enteric coated tablets	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00557	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets	28.00	21.00		Г
	Buy 6 boxes, price each	24.00	18.00		
01055	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets	66.00	49.50		П
	Buy 4 bottles, price each	60.00	45.00		
01740	SEA-IODINE™ - 1,000 mcg, 60 veg. caps	8.00	6.00		Т

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00657	SOLARSHIELD SUNGLASSES - 1 pair smoke color	\$12.99	\$9.74		
	Buy 2 pairs, price each	11.50	8.63		
01097	SOY EXTRACT (ULTRA) - 150 veg. caps	87.00	65.25		
	Buy 4 bottles, price each	78.00	58.50		
00432	STEVIATM EXTRACT (BETTER) - 100 packets, 1 gram each	9.95	7.46		
00438	STEVIA™ ORGANIC LIQUID EXTRACT (BETTER) - 2 oz liquid	11.00	8.25		
01476	STRONTIUM - 750 mg, 90 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01649	SUPER ABSORBABLE SOY ISOFLAVONES - 60 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01790	SUPER SAW PALMETTO/NETTLE ROOT W/BETA-SITOSTEROL -60 softgels	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
	Buy 12 bottles, price each	24.00	18.00		
01778	SUPER SELENIUM COMPLEX - 200 mcg, 100 veg. caps	14.00	10.50		
31110	Buy 4 bottles, price each	12.00	9.00		
	Buy 12 bottles, price each	11.00	8.25		
	T	11.00	0.20		
01723	TART CHERRY EXTRACT w/STANDARDIZED CHERRYPURE*-60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
00199	TAURINE - 1,000 mg, 50 caps	8.95	6.71		
	Buy 4 bottles, price each	8.00	6.00		
00133	TAURINE POWDER - 300 grams	20.00	15.00		
	Buy 4 bottles, price each	16.88	12.66		
01304	THEAFLAVIN STANDARDIZED EXTRACT - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01683	(L) THEANINE - 100 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	20.50	15.38		
††01038	THERALAC PROBIOTICS - 30 caps	47.95	35.96		
00668	THYROID FORMULA™ (METABOLIC ADVANTAGE) - 100 caps	21.95	16.46		
00349	TMG POWDER - 50 grams	14.00	10.50		
	Buy 4 bottles, price each	11.00	8.25		
01859	TMG - 1,000 mg, 60 veg. liquid caps	13.00	9.75		
	Buy 4 bottles, price each	12.00	9.00		
00781	TOCOTRIENOLS WITH SESAME LIGNANS - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	36.00	27.00		
01400	TOCOTRIENOLS (SUPER-ABSORBABLE) - 60 softgels	30.00	22.50		
000	Buy 4 bottles, price each	28.00	21.00		
01278	TOOTHPASTE - 4 oz (Mint)	9.50	7.13	\vdash	\vdash
01210	Buy 4 tubes, price each	8.67	6.50		
01468	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps	24.00	18.00		
01700	Buy 4 bottles, price each	22.00	16.50		
01469	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT	32.00	24.00		\vdash
	W/RESVERATROL -60 veg. caps				
	Buy 4 bottles, price each	29.60	22.20		
01803	TRI SUGAR SHIELD™ - 60 veg. caps	36.00	27.00		\vdash
	Buy 4 bottles, price each	32.00	24.00		
01386	TRUFIBER® - 180 grams	32.95	24.71		Н
01389	TRUFLORA PROBIOTICS - 32 veg. caps	42.95	32.21		Н
01722	L-TRYPTOPHAN - 500 mg, 90 veg. caps	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50		

SUB-TOTAL OF COLUMN 15

Buy 4 bottles, price each

00046 **SELENIUM** - 2 oz dropper bottle

Buy 4 bottles, price each

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01684 **SILYMARIN** - 100 mg, 50 veg. caps

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00318 SERRAFLAZYME - 100 tablets

01679 **SE-METHYL L-SELENOCYSTEINE** – 200 mcg, 100 veg. caps

00284 SHARK LIVER OIL (NORWEGIAN) - 1,000 mg, 30 softgels

00961 SODZYME® w/GLISODIN® AND WOLFBERRY - 90 veg. caps

01596 SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT® - 30 veg. liquid caps

7.20

11.95

12.00 11.00

18.00

16.00

18.00

16.00

9.25

8.25

25.00

23.00

24.00

5.40

8.96

8.25

13.50

12.00

13.50

12.00

6.94

6.19

18.75

17.25

21.00

18.00

No.		Retail Each	Member Each	Qty	Tota
	T CONTINUED	<u> </u>			
01721	TRYPTOPHAN PLUS (OPTIMIZED) - 90 veg. caps	\$32.00	\$24.00		
	Buy 4 bottles, price each	29.00	21.75		
01816	TWO-PER-DAY - 60 tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01815	TWO-PER-DAY - 120 tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01814	TWO-PER-DAY - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	L-TYROSINE - 500 mg, 100 tablets	12.98	9.74		
	V				
00213	VANADYL SULFATE - 7.5 mg, 100 veg. tablets	\$15.00	\$11.25		
002.0	Buy 4 bottles, price each	12.50	9.38		
00408	VENOTONE - 60 caps	18.95	14.21		
30400	Buy 4 bottles, price each	16.00	12.00		
01327	7 71	18.00	13.50		
01021	VINPOCETINE - 10 mg, 100 tablets		10.50		
01500	Buy 4 bottles, price each	14.00			
01526	VITAMIN B3 NIACIN - 1,000 mg, 100 veg. caps	12.75	9.56		
20072	Buy 4 bottles, price each	12.00	9.00		
00372	VITAMIN B3 NIACIN - 500 mg, 100 caps	7.65	5.74		
	Buy 4 bottles, price each	6.65	4.99		
00098	VITAMIN B5 - 500 mg, 100 caps (Pantothenic Acid)	10.50	7.88		
	Buy 4 bottles, price each	9.38	7.04		
01535	VITAMIN B6 - 250 mg, 100 veg. caps	12.50	9.38		
	Buy 4 bottles, price each	11.00	8.25		
00361	VITAMIN B12 - 500 mcg, 100 lozenges	8.75	6.56		
	Buy 4 bottles, price each	7.25	5.44		
01634	VITAMIN C w/ DIHYDROQUERCETIN - 1,000 mg, 60 veg. tablets	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
00927	VITAMIN C w/ DIHYDROQUERCETIN - 1,000 mg, 250 veg. tablets	25.50	19.13		
	Buy 4 bottles, price each	23.25	17.44		
00084	VITAMIN C (BUFFERED) POWDER - 454.6 grams	23.95	17.96		
	Buy 4 bottles, price each	22.00	16.50		
01736	(EFFERVESCENT) VITAMIN C-MAGNESIUM CRYSTALS - 180 grams	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01732	VITAMIN D3 - 2,000 IU, 1 fl oz, Mint flavor	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01753	VITAMIN D3 - 1,000 IU, 90 softgels	7.00	5.25		
	Buy 4 bottles, price each	6.00	4.50		
01751	VITAMIN D3 - 1,000 IU, 250 softgels	12.50	9.38		
	Buy 4 bottles, price each	11.25	8.44		
01713	VITAMIN D3 - 5,000 IU, 60 softgels	11.00	8.25		
01713	Buy 4 bottles, price each	_	7.43		
01710		9.90			
01718	VITAMIN D3 - 7,000 IU, 60 softgels	14.00	10.50		
01750	Buy 4 bottles, price each	12.60	9.45		
01758	VITAMIN D3 w/SEA-IODINE™ - 5,000 IU, 60 caps	14.00	10.50		
	Buy 4 bottles, price each	12.50	9.38		
00864	VITAMIN D3 Liquid Emulsion – 2,000 IU, 1 oz.	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01741	VITAMINS D AND K w/SEA-IODINE™ - 60 caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01763	VITAMIN E (NATURAL) - 400 IU, 100 softgels	30.00	22.50		
	-	1	04.00		
01100	Buy 4 bottles, price each	28.00	21.00		

SUB-TOTAL OF COLUMN 17

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01225	VITAMIN K2 (LOW-DOSE) - 45 mcg, 90 softgels	\$18.00	\$13.50		
	Buy 4 bottles, price each	16.00	12.00		
	X				
00409	XYLIWHITE™ MOUTHWASH - 16 oz	\$10.00	\$7.50		
	W				
01739	WINTER WELLNESS™ - 60 caps	\$15.00	\$11.25		
	Buy 4 bottles, price each	13.00	9.75		
	Z				
01813	ZINC HIGH POTENCY - 50 mg, 90 veg. caps	\$7.95	\$5.96		
	Buy 4 bottles, price each	7.00	5.25		
01561	ZINC LOZENGES - 60 veg. lozenges	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
**01051	ZYFLAMEND® WHOLE BODY - 120 softgels	64.95	48.71		
	SUB-TOTAL OF COLUMN 18			<u> </u>	

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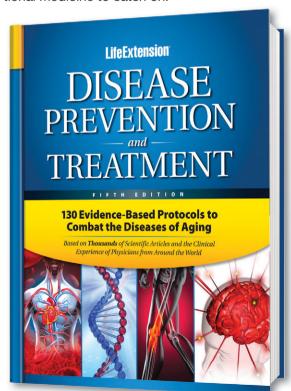
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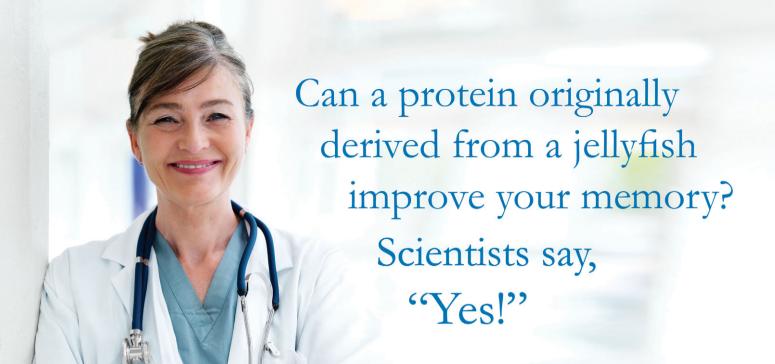
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Researchers have discovered a protein that actually supports healthy brain function.*

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This same brain-health supporting magnesium is also available in a natural lemon flavor called **Neuro-Mag™ Magnesium-L-Threonate with Calcium and Vitamin D3 Powder**. In addition to its fresh lemon flavor, the one-scoop per day serving supplies the same amount of magnesium as the capsules plus **500 mg** of highly soluble calcium and **1,000 IU** of vitamin D3.

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1. J Neurosci. 2013 May 8;33(19):8423-41. 2. Neuron. 2010 Jan 28;65(2):165-77. 3. Yale J Biol Med. 1933 Jul;5(6):545-53.

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Rich in protective anthocyanins, tart cherries target a wide spectrum of degenerative diseases and have been shown to lower both uric acid and C-reactive protein.



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