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May 2014

Reverse the Epidemic of Arterial Disease

Weight-Loss Effects of Lactoferrin

European Anti-Aging Conference

Newly Discovered Benefits of Lipoic Acid



Gretchen DuBeau
Protecting Our Health Freedom



BONE RESTORE

WITH VITAMIN K2

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

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

The retail price for 120 capsules of **Bone Restore** is \$24. If a member buys four bottles, the price is reduced to **\$16.50** per bottle. (Item# 01727)

The same **Bone Restore** formula without vitamin K2 (MK-7) is available as well. The retail price for 120 capsules is \$22. If a member buys four bottles, the price is reduced to **\$14.25** per bottle. (Item# 01726)

Just four capsules of Bone Restore provide:

Highly Absorbable Calcium (as DimaCal® dicalcium malate, TRAACS® calcium bisglycinate chelate, calcium fructoborate)	700 mg
Vitamin D3	1,000 IU
Vitamin K2 (as menaquinone-7)	200 mcg
Magnesium (as magnesium oxide)	300 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	3 mg
Zinc (as zinc amino acid chelate)	2 mg
Manganese (as amino acid chelate)	1 mg
Silicon (from horsetail extract)	5 mg

Note: Those who take **Super Booster** or **Super K** usually do not need additional vitamin K2. They should order **Bone Restore without vitamin K2**. Those taking the anti-coagulant drug **Coumadin®** (warfarin) should use **BONE RESTORE without vitamin K2**.

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Item #01727

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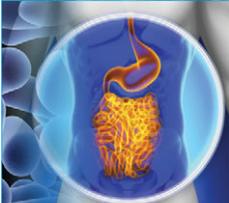
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CYTOKINE Suppress™ with EGCG

For Balanced Inflammation Control

Inflammation is a natural process that affects **every** cell and organ in the body. As we age, maintaining a **balanced** inflammatory response becomes increasingly critical to guarding our whole-body health.¹⁻³

Fortunately, there's something we can do to support this process at a deep molecular level.

Cytokine Suppress™ with EGCG provides two natural food ingredients—long used in traditional Asian cuisine and medicine—that have the ability to promote a healthy inflammatory immune response.⁴⁻⁶

Key constituents found in **mung beans** and **green tea** support the natural process of the immune system's inflammatory activity. This potent benefit is delivered by the novel flavonoids and other molecules found primarily in the seed coat of the mung bean,^{4,7} and the compound EGCG (epigallocatechin-3-gallate), the major beneficial component in green tea.⁵

Acting together, these mung bean and green tea compounds help regulate levels, among those within the normal range, of a protein molecule known as **HMGB1**.⁴⁻⁶ This molecule is responsible for controlling the signaling compounds known as **cytokines** that generate inflammation.^{8,9}

The result of this beneficial modulatory support is a **healthy and balanced inflammatory response**—which is particularly important as we age.

Life Extension® Cytokine Suppress™ with EGCG supports healthy inflammatory levels.^{4-6,8,9}

The suggested daily dosage of one vegetarian capsule of **Life Extension® Cytokine Suppress™ with EGCG** provides:

Cytokine Suppress™ mung bean extract (coat) [providing 24 mg vitexin, 24 mg isovitexin]	240 mg
Epigallocatechin gallate (EGCG) [from green tea extract (leaf)]	300 mg

A bottle of 30 vegetarian capsules of **Life Extension® Cytokine Suppress™ with EGCG** retails for **\$30**. If a member buys four bottles, the price is reduced to **\$20.25** per bottle.

To order Life Extension® Cytokine Suppress™ with EGCG, call 1-800-544-4440 or visit www.LifeExtension.com



Item# 01804

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Broad Spectrum Benefits of **APPLE POLYPHENOLS**

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

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

Unique Polyphenols

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



Broad Spectrum Benefits

Apple polyphenols can slow triglyceride absorption from the intestine by blocking pancreatic lipase, an enzyme specifically required to break down triglyceride fats.^{6,7}

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

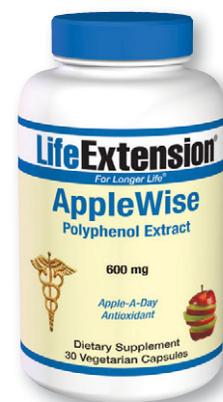
Along with phloridzin, apples contain **chlorogenic acid**. Chlorogenic acid supports **healthy glucose levels** in those already within normal range by inhibiting the **glucose-6-phosphatase enzyme**^{4,5} and by increasing some cellular mechanisms that are stimulated by insulin in liver cells.⁹

The Ultimate Form of Apple Polyphenols

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

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

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



Item #01625

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To order **AppleWise Polyphenol Extract** call **1-800-544-4440** or visit www.LifeExtension.com

CDC Says: 200,000 Americans Die Needlessly Every Year



BY WILLIAM FALOON



The **Centers for Disease Control and Prevention** (CDC) deserve a level of respect that does not exist with most bureaucracies.

When the first cases of **AIDS** were reported in the United States in **1981**, the CDC knew this country faced a contagious disease crisis and took action.

Despite interference by other government agencies, the **CDC** persisted with meticulous research. Within **18 months** the **CDC** identified all the major risk factors for acquired immune deficiency syndrome (AIDS).¹

The **Food and Drug Administration** (FDA), on the other hand, responded by organizing **armed raids** against those who sought novel ways to prevent the immune deficits that were ravaging AIDS patients.²

Life Extension[®] was one victim of these police-state actions. We were fortunate that our early recommendations were vindicated before the **FDA** could incarcerate us.³⁻⁵

In **2013**, the **CDC** released a report estimating that nearly **200,000** avoidable deaths occur each year in the United States from heart disease, stroke, and hypertensive disorders.⁶

According to the **CDC**, prevention of vascular disease can be as simple as following the “**ABCS**”, which stands for: “**aspirin, blood pressure control, cholesterol management, and smoking cessation.**”⁷

Life Extension does not question the accuracy of this CDC report. We in fact believe it to be understated. Our concern is that the **CDC** report contains omissions about **other** preventable causes of **vascular disease** overlooked by hurried physicians.

This article will show why the number of needless deaths is higher than the **CDC** estimates and how you can avoid being a victim. >

Atherosclerosis is the term used to describe damage and obstruction to the linings of our arteries.⁸ When **arterial blood flow** is impeded or blocked, the result can be death or disability from a **stroke** or **heart attack**.⁸

A misconception about **atherosclerosis** is that it is a modern day scourge caused by unhealthy habits. I've heard so-called experts' claim that people didn't suffer coronary artery disease in the past because their diets were so natural.

These "experts" had no basis to claim that atherosclerosis is a modern day phenomenon. All they could cite was that few people developed heart disease in the past compared to today. The reason more people weren't having heart attacks back then was that

most died before age **50** from diseases that are now preventable/curable.

A study on this topic published in *The Lancet* last year attracted worldwide media attention. It documented that **mummified human bodies** dating back 4,000 years and spanning multiple geographic locations/cultures suffered from **clogged arteries**.⁹

As *Life Extension* has long argued, atherosclerosis is a **disease of aging** that has always been prevalent. It took MRI imaging to document clear signs of heart disease in **34%** of mummified humans whose estimated mean age at death was **43** years. Those who died at an estimated mean age of **32** years were less likely to show signs of atherosclerosis.⁹

According to the lead investigator of *The Lancet* study:

*"The fact that we found similar levels of atherosclerosis in all of the different cultures we studied, all of whom had very different lifestyles and diets, suggests that atherosclerosis may have been far more common in the ancient world than previously thought,"*¹⁰

—Randall Thompson, MD

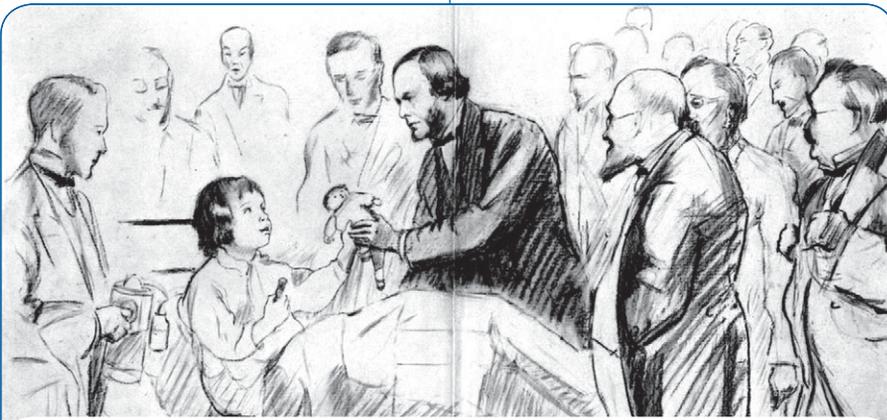
These findings help confirm that **atherosclerosis** has always been widespread. The encouraging news is that methods to prevent and even reverse it have been validated in modern clinical studies.

What Caused Atherosclerosis In The Mummified Bodies?

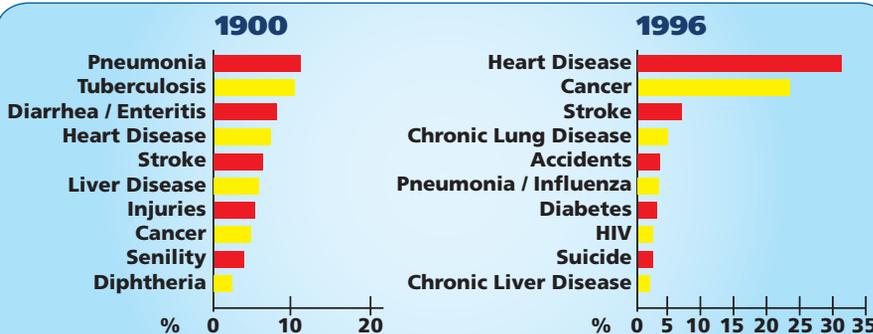
In seeking to identify what caused atherosclerosis in the mummified bodies, *The Lancet* researchers speculated that it could have been the high levels of **inflammation** these primitive people were exposed to from constant infections and a non-hygienic environment.¹⁰

People with severe inflammatory conditions (like rheumatoid arthritis and lupus) suffer *accelerated* atherosclerosis.¹¹⁻¹³ Multiple studies on normal modern people link **chronic inflammation** as an independent risk factor for stroke and heart attack.¹⁴⁻¹⁶

A study published in late **2013** corroborate this. The investigators reported on a large group of older individuals who were followed for **17** years. Those with the highest levels of **inflammatory** blood markers were over **3 times** as likely to suffer sudden cardiac death as those with the lowest levels.¹⁷



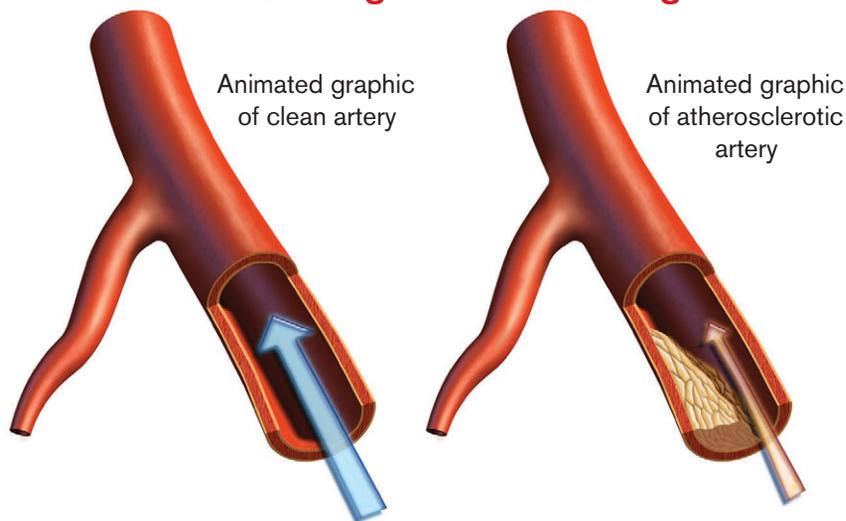
How Humans Died Last Century



The average life expectancy in the US in 1900 was 47.3 years. In 1993, it was 75.7 years. (It has since increased to about 79 years.)

Source: CDC, National Center for Health Statistics.

Our Damaged Arterial Linings



Animated graphics of blood vessels often show pristine looking red blood with various components gingerly flowing through flawless arteries. The reality is that as humans age, the accumulation of chronic damage to the endothelium that lines our arteries sets the stage for occlusive atherosclerosis.

The recent **CDC** report did not factor in **chronic inflammation** as an “avoidable” cause of vascular-related death.¹ That’s just one reason why the CDC’s number of avoidable deaths is an underestimate of how many lives could be spared.

It’s comforting to live in an era where **chronic inflammation** can be identified with **blood tests** and corrective actions taken to suppress elevated inflammatory markers.

Why Is Atherosclerosis So Common?

We know that excess dietary intake of the wrong kinds of fats and sugars damages our arterial lining, as does tobacco smoke.¹⁸⁻²³ Overlooked is the continuous toxic exposure arteries bear to **cellular waste** products that are released into our bloodstream for filtration and excretion primarily through the kidneys.²⁴

Most of us are born with a flawlessly intact **endothelium** that lines our arteries and protects against formation of **atherosclerosis**. As we age, our arterial lining endures chronic insult from internal and external factors that results in **loss of blood flow** to the heart, kidneys, and brain. This is the leading reason why most aging people today become disabled and then prematurely die.

Those who understand the many causes of **atherosclerosis** should not be surprised it is so common. What’s appalling is the number of people who continue to succumb to atherosclerotic diseases because of widespread physician apathy and ignorance.

Endothelial Dysfunction: The Villain Behind Atherosclerosis

Multiple culprits initiate and promote atherosclerosis. They share in common an ability to

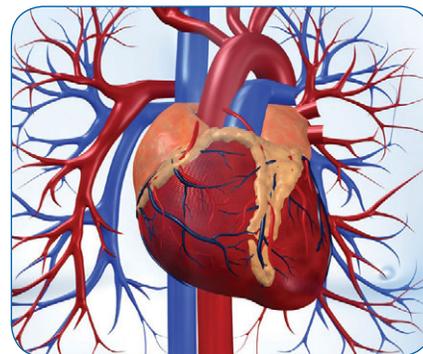
damage the delicate **endothelium** that lines our vascular systems.²⁵

An early step in the initiation of **atherosclerosis** is often reduced **nitric oxide** bioavailability that initiates **endothelial dysfunction**.²⁶ Aging results in further impairment in the ability to synthesize endothelial **nitric oxide** that markedly accelerates **atherosclerosis**.^{27,28}

We are grateful to the many scientists who have conducted research showing that consumption of plant polyphenol concentrates (such as those found in **pomegranate**,²⁹⁻³¹ **green tea**³²⁻³⁴ and **red grapes**)³⁵⁻³⁹ protect **nitric oxide** production, thus helping to restore youthful function and structure to our **endothelial** arterial linings.

It is somewhat contradictory, however, for one to gobble down capsule concentrates of **pomegranate, green tea, berries, and grapes** and then ignore **other** proven factors that silently destroy endothelial function.

Elevated **glucose**,⁴⁰⁻⁴² **insulin**,⁴³⁻⁴⁵ **triglycerides**,^{46,47} **LDL**,⁴⁸⁻⁵⁰ **homocysteine**,⁵¹⁻⁵³ **C-reactive protein**,⁵⁴⁻⁵⁶ **oxidative stress**,⁵⁷⁻⁵⁹ along with **low HDL**⁶⁰⁻⁶² and **low testosterone**^{63,64} (in men) inflict their own unique forms of **endothelial** damage. It is thus critical to have one’s **blood tested** annually to ensure that none of these destroyers of endothelial integrity get out of safe ranges.



Vascular Toxicity Of Homocysteine

Elevated **homocysteine** has been linked to atherosclerosis via several toxic mechanisms.⁶⁵⁻⁶⁹ A few years ago, some studies questioned whether modestly-elevated homocysteine was really a health concern. *Life Extension* has published extensive information on the dangers of homocysteine as well as rebuttals to studies that the media portrayed in a highly misleading way.⁷⁰⁻⁷⁴

There is now a controversy in the mainstream as to what **blood level of homocysteine** really poses a vascular disease risk. Children who have a genetic defect that causes extremely high homocysteine levels show signs of impaired endothelial function as early as age 4.⁷⁵

The question is what blood level of homocysteine should typical aging people strive for. The mainstream defines elevated homocysteine (called hyperhomocysteinemia) as greater than **15 micromoles per liter of blood**.⁷⁶ Other studies suggest that keeping homocysteine far below 15 is advisable.⁷⁶

High homocysteine is associated with increasing age, consumption of animal protein, smoking, postmenopausal state, sedentary lifestyle, decreased kidney function, deficiencies of B-vitamins or with certain genetic abnormalities.⁷⁷⁻⁸³

Failure to test homocysteine blood levels can leave one vulnerable to silent vascular damage and increased dementia risks.⁷⁶

When one understands the mechanisms by which **homocysteine** inflicts cellular damage, the importance of keeping it in lower ranges becomes abundantly clear.

How To Slow And Reverse Atherosclerosis

Scientists long ago documented the ability of **HDL** (high-density lipoprotein) to remove **cholesterol** affixed to arterial walls and **transport** it to the liver for safe disposal.

This is why it is so important to maintain **HDL** levels above **50 mg/dL** of blood and follow steps *Life Extension* has outlined to ensure optimal **reverse cholesterol transport** of lipids away from the arterial wall.¹²⁴

HDL does more than just **cleanse** arterial walls of plaque. It also protects **LDL** against **oxidation**, while inhibiting **chronic inflammation**, **vascular adhesion molecules**, and **platelet activation**—all factors that can lead to **atherosclerosis**.¹²⁵⁻¹³⁰

For **HDL** to perform its vital **functions**, an enzyme called **paraoxonase-1 (PON-1)** is attached to its surface.^{130,131}

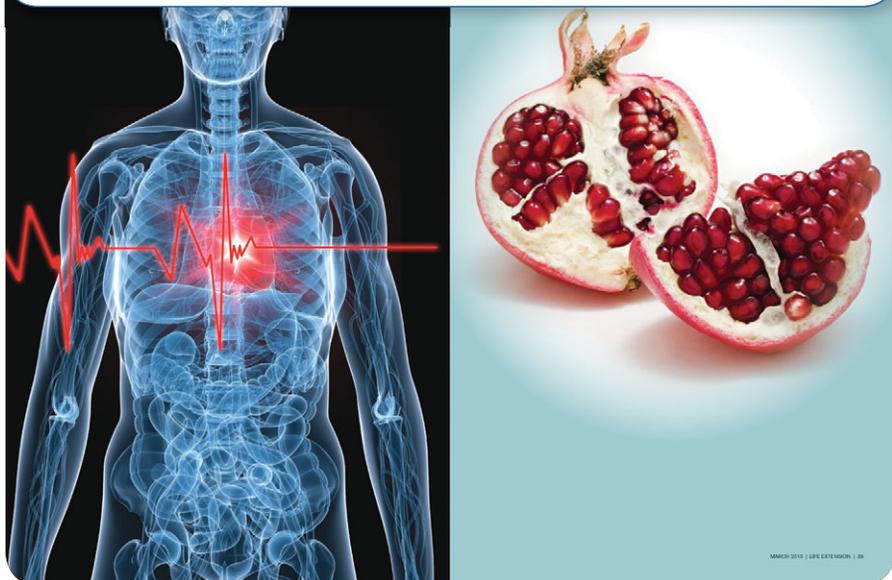
Aging and poor diet result in a marked decline in **PON-1** levels, thereby **reducing** the ability of HDL to protect against **heart attack** and **stroke**.^{132,133} This phenomenon helps explain the onset of **accelerated** atherosclerosis; where within a period of only a few years, an aging person's healthy arteries rapidly **occlude** with plaque.

The age-related reduction in **PON-1** may also explain studies showing that **statin drugs** lose their benefit in certain aging populations, since the effects of statins are no longer sufficient to protect against the **multiple factors** involved in the development of **atherosclerosis** in the elderly.^{134,135}

PON-1 is anchored to the surface of **HDL** and is emerging as a formidable defense against **atherosclerosis**.^{130,136,137}

Pharmaceutical companies would pay a king's ransom for a drug that elevates **PON-1** levels in the body. Fortunately, scientists have discovered low-cost **natural** methods (such as pomegranate and resveratrol) to elevate **PON-1** and unleash its full antioxidant and anti-inflammatory power.¹³⁸⁻¹⁴²

In studying the effects of **pomegranate** alone over a one-year period, studies using human serum revealed an **83% increase** in **PON-1** activity and a **90% decrease** in **oxidized LDL**. These same patients showed reversal in clinical measurements of atherosclerosis such as carotid artery narrowing.¹⁴³



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Homocysteine Damages The Brain

Solid evidence connects the reduced cerebral blood flow with higher **Alzheimer's** risk as well as its rapid progression.⁸⁴⁻⁸⁶

A study published in **2013** showed that people with homocysteine levels of **25.5 micromoles/L** and higher were almost **4 times** as likely to have *severe shrinkage* of the brain's temporal lobe and had almost **5 times** the risk for a severe brain *white matter* abnormality.⁸⁷ This brain damage places people at increased risk of stroke, dementia, and death.⁸⁸ This study is corroborated by previous studies showing brain benefits when B-vitamins are used to suppress homocysteine.⁸⁹

The devastating impact that elevated homocysteine has on the **brain** alone should motivate maturing individuals to check their homocysteine blood level and take appropriate actions to suppress it if elevated.

Fortunately, most people can reduce elevated homocysteine levels by ensuring proper intake of **folic acid, vitamin B12, and vitamin B6**.⁹⁰⁻⁹²

A **fatal assumption** we have observed in people taking multivitamins is they assume their homocysteine levels are being adequately suppressed. Only a **blood test** can verify that **homocysteine** levels are in the safe ranges.

Some individuals, for instance, don't absorb vitamin **B12** well and require a sublingual or injectable route of administration. Others need to take extra vitamin **B6** or the more metabolically active **L-methylfolate** form of folic acid to effectively suppress elevated homocysteine.

Low Testosterone Associated With Higher Vascular Risk

Testosterone levels are **high** in young men, but **plummet** during aging.

Low testosterone in men is associated with excess **abdominal fat**,^{93,94} loss of **insulin sensitivity**,^{95,96} **atherosclerosis**,^{97,98} and increased incidence of **cardiovascular disease**.⁹⁹

A review of data gathered between **1970** and **2013** provided further evidence that low testosterone in men may be linked to a higher risk of developing or dying from cardiovascular disease.¹⁰⁰

Another **2013** study confirmed the increase of **metabolic syndrome** in men that are testosterone deficient.¹⁰¹ **Metabolic syndrome** is a cluster of cardiovascular risk factors that include insulin resistance, hypertension, elevated triglycerides/LDL and low HDL.¹⁰² This study found that men treated with **testosterone** showed across the board improvements as indicated by:¹⁰¹

- Reduced LDL.
- Reduced triglycerides.
- Reduced glucose.
- Reduced C-reactive protein.
- Reduced measures of liver damage.
- Reduced blood pressure.
- Reduced hemoglobin A1c.
- Increased HDL (removes cholesterol buildup from arterial walls).

This stream of favorable data is causing testosterone prescriptions to surge. From 1994 to 2004, prescription sales of testosterone increased by **500%**.¹⁰³ We believe they have grown substantially more than that since then, especially when considering that sales of low-cost **compounded testosterone creams** are not easily counted in the official statistics.

It is regrettable that despite compelling findings of profound efficacy, some conventional doctors still question the value of **testosterone replacement** in maturing men. This oversight is causing too many *needless* heart attacks.

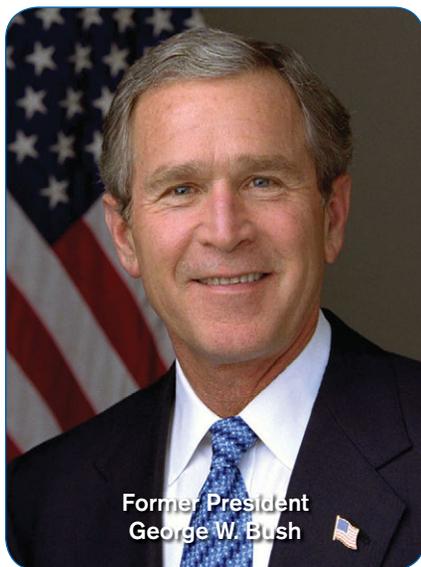
For nearly 20 years, **Life Extension** has urged its male members to restore testosterone levels to youthful ranges. We have written meticulous rebuttal to media attacks that question the value of properly-prescribed natural testosterone.

George W. Bush's Blocked Coronary Artery

George W. Bush (the younger Bush) may have been the first President to describe his daily health routine that included regular exercise along with a multivitamin, low-dose aspirin, and possibly some fish oil. Former President Bush had annual physical exams by the government's best doctors.

In **August 2013**, doctors discovered that a vital coronary artery in George W. Bush was **95%** blocked. An emergency stent was inserted to restore blood flow through the occluded artery. According to medical sources, the location and severity of the coronary artery blockage usually causes sudden death and the former President was lucky his doctors caught it in time.¹⁰⁵

We are seeking the medical records of President Bush through the Freedom of Information Act, but we are confident that his annual "Presidential" exams did not include the **comprehensive blood testing** that *Life Extension* members take each year. As we long ago documented, all it takes



Life Extension has long advocated that aging men maintain youthful levels of testosterone. Here are a few past covers of magazines where the benefits of testosterone were discussed.

is for one independent **vascular risk factor** to be out of safe range for a heart attack, stroke or kidney failure to ensue.¹⁰⁶⁻¹⁰⁸

Vascular disease was the cause of death of former Presidents **Franklin Roosevelt, Harry Truman, Dwight Eisenhower, Lyndon Johnson, Richard Nixon** and **Gerald Ford**. Eisenhower suffered horrifically from heart disease for over a decade before dying from congestive heart failure.^{109,110}

In **2004**, **Bill Clinton** underwent open heart surgery to bypass multiple blocked arteries in his heart that would have likely killed him in a few months if not treated.¹¹¹ He had to undergo follow-up surgery in **2005** to correct a complication caused by his first bypass surgery.¹¹²

In **2010**, Clinton was rushed to the hospital complaining of chest pains and had two stents implanted to open two new occluded coronary arteries. Clinton regularly exercised, but did little else other than what his conventional doctors prescribed. Clinton's program obviously failed to protect him from severe and recurring **coronary atherosclerosis**.¹¹³

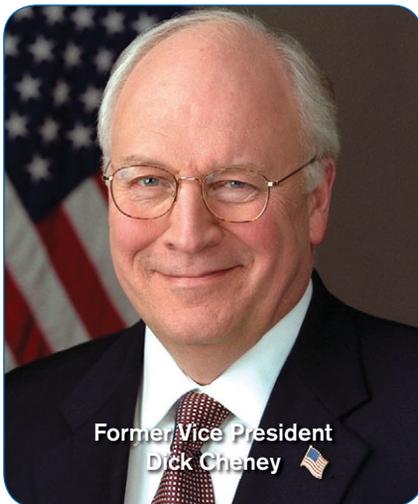
Dick Cheney's Multiple Heart Attacks

In this month's issue, we feature a review of a book authored by former Vice President **Dick Cheney**.¹¹⁶ Perhaps no living political figure better exemplifies what happens to one's arteries in response to poor lifestyle choices than **Dick Cheney**.

Cheney was known for eating outrageous quantities of artery-clogging foods and smoking heavily for 20 years.

Dick Cheney suffered his first heart attack in **1978**, when he was only **37**. He suffered his second in **1984** and a third in **1988** before undergoing a quadruple bypass surgery to unblock his clogged arteries. His fourth heart attack occurred in **2000**. At that time, doctors inserted a stent to open a re-occluded coronary artery.

In **2001**, doctors implanted a device to track and control Cheney's heart rhythm. In **2008**, he underwent a procedure to restore his heart to a normal rhythm after doctors found that he was experiencing a recurrence of atrial fibrillation. Despite all this, Cheney



Former Vice President
Dick Cheney

suffered his fifth heart attack in February 2010.

Dick Cheney has reportedly taken **statin drugs** for nearly two decades. In June 2001, his LDL was an excellent **72 mg/dL**, indicating he was taking a high-dose statin drug. This did not, however, prevent him from suffering another heart attack.

The former Vice President has had access to the best that conventional cardiology can offer, yet his chronic heart ailments did not abate until he received a **heart transplant** in 2012.

Don't Be Victimized By Overwhelmed Doctors

We at *Life Extension* have new members send us their **blood test** results for our review. It never ceases to amaze us as to how many important blood tests such as **C-reactive protein, hemoglobin A1c, homocysteine**, and vital **hormones** are omitted.

Standard blood panels today look at lipids (cholesterol, LDL, HDL, triglycerides) and glucose. If levels of these vascular risk markers are within conventional "reference ranges," then the patient is told they are fine.

One big mistake that people make is thinking that being in the "**reference range**" means they are safe. For instance, a doctor may look at your **fasting glucose** reading of **97 mg/dL** and say you have no diabetic problems. If you happen to be over-secreting large amounts of **insulin** that keeps your glucose suppressed, then you are facing diabetic complications that can adversely impact every part of your body. A **hemoglobin A1c** test is a far more accurate measure of glucose control. **Fasting glucose** levels should be below 86 mg/dL and **hemoglobin A1c** below 5.6%.^{122,123}

With restrictions being placed on healthcare expenditures, aging Americans are being denied the opportunity to protect their circulatory system against atherosclerosis. Doctors facing a surge of newly insured patients under the **Affordable Care Act** are less able to spend the time to evaluate comprehensive blood test results. It is up to the **individual** to take **charge** of their health and longevity by having annual **blood tests** and following up on any reading that is out of **optimal** range.

Life Extension's Common Sense Approach

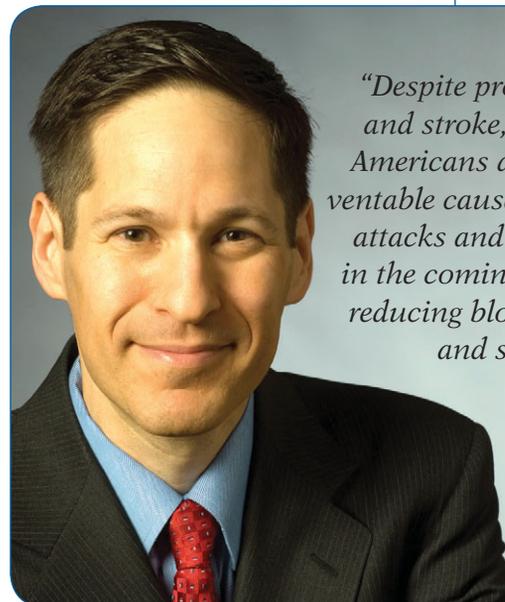
A meticulous review of the scientific literature reveals a multitude of factors that cause humans to accumulate atherosclerotic plaque. Validated blood markers are available to identify specific vascular risks so that corrective actions can be taken before a **heart attack** or **stroke** strikes.

Yet this scientific approach to **disease prevention** is tragically overlooked by today's hurried medical establishment.

Life Extension retails a comprehensive **Male** and **Female Blood Test Panel** for **\$400**. This is a fraction of the price most commercial labs charge for all of these tests you can see outlined on the next page.

Once a year, we sharply discount the member price of the **Male** or **Female Panels** to **\$199**. This enables Foundation members to gain control over their medical destiny and initiate meaningful changes before acute or chronic disease ensues.

With increasing insurance **deductibles** and **co-pays**, obtaining



"Despite progress against heart disease and stroke, hundreds of thousands of Americans die each year from these preventable causes of death. Many of the heart attacks and strokes that will kill people in the coming year could be prevented by reducing blood pressure and cholesterol and stopping smoking."¹⁰⁴

Tom Frieden, MD, MPH
Director of the Centers for
Disease Control and Prevention

a comprehensive **Male** or **Female Panel** represents a huge economic value. Discovering correctable disease factors not only spares suffering and premature death, but could save tens of thousands of dollars in medical outlays that may not be covered by health insurance.

How Easy It Is To Get Tested...

You can order the **Male Panel** or **Female Panel** at these **discounted** prices by making one phone call to **1-800-208-3444** (24 hours).

Within a few days you'll receive a listing of blood drawing stations in your neighborhood. Appointments are usually not necessary, meaning you can have your blood drawn at your convenience.

With today's modern technology, your results come back fast. If you have any questions, you can phone or email our health advisors 7-days a week.

I am often asked what are the most important nutrients, hormones or age-delaying drugs to take. My steadfast answer is that I have no idea what is most important for **YOU** until I see results from a comprehensive **blood test** panel.

It does little good to protect your body from say **oxidized LDL** if your **homocysteine** and **C-reactive protein** levels are elevated...or you're unwittingly taking a drug that is slowly destroying your kidneys or liver.

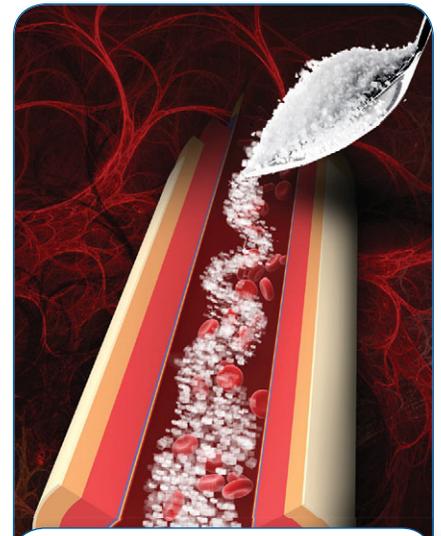
The **Male** and **Female Blood Test Panels** provide a wide range of blood markers to reduce the risk that an insidious minor disorder will someday inflict permanent damage in you.

To order these comprehensive blood test panels at the year's **lowest prices**, call **1-800-208-3444** today.

For longer life,



William Faloon



Elevated Glucose Kills After People Are Hospitalized

Higher hospital admission **glucose** levels have been shown in several studies to predict increased risk in heart attack patients.¹¹⁷⁻¹¹⁹ Data also suggest that elevated **hemoglobin A1c** is associated with an increased risk of cardiovascular disease, even in patients without **diabetes**.¹²⁰

For example, a study published in **2013** showed that combined admission **glucose** and **hemoglobin A1c** values were independently associated with adverse clinical outcomes in non-diabetic patients with **acute coronary syndrome** treated with coronary stents or other interventions.¹²¹

The take-home message is that **glucose** need not reach **diabetic** levels (above **125 mg/dL**) to inflict deadly consequences. Optimal fasting glucose levels are below **86 mg/dL**.



References for this article begin on page 16.

MALE AND FEMALE BLOOD TEST PANELS

Unlike commercial blood tests that evaluate only a few disease risk factors, Life Extension's **Male** and **Female Blood Test Panels** measure a wide range of blood markers that predispose people to age-related diseases.

Just look at the **huge** number of parameters included in the **Male** and **Female Blood Test Panels**:

MALE PANEL

LIPID PROFILE

Total Cholesterol

LDL (low-density lipoprotein)

HDL (high-density lipoprotein)

Triglycerides

CARDIAC MARKERS

C-Reactive Protein (high sensitivity)

Homocysteine

HORMONES

Free and Total Testosterone

DHEA-S

Estradiol (an estrogen)

TSH (thyroid function)

Vitamin D (25-hydroxyvitamin D)

METABOLIC PROFILE

Glucose

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

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

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

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

Hemoglobin A1c

COMPLETE BLOOD COUNT (CBC)

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

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

Platelet count

CANCER MARKER

PSA (Prostate Specific Antigen)

FEMALE PANEL

LIPID PROFILE

Total Cholesterol

LDL (low-density lipoprotein)

HDL (high-density lipoprotein)

Triglycerides

CARDIAC MARKERS

C-Reactive Protein (high sensitivity)

Homocysteine

HORMONES

Progesterone

Estradiol (an estrogen)

Free and Total Testosterone

DHEA-S

TSH (thyroid function)

Vitamin D (25-hydroxyvitamin D)

METABOLIC PROFILE

Glucose

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

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

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Platelet count

Non-member retail price: \$400 • Special Member Discount Price: **\$199**

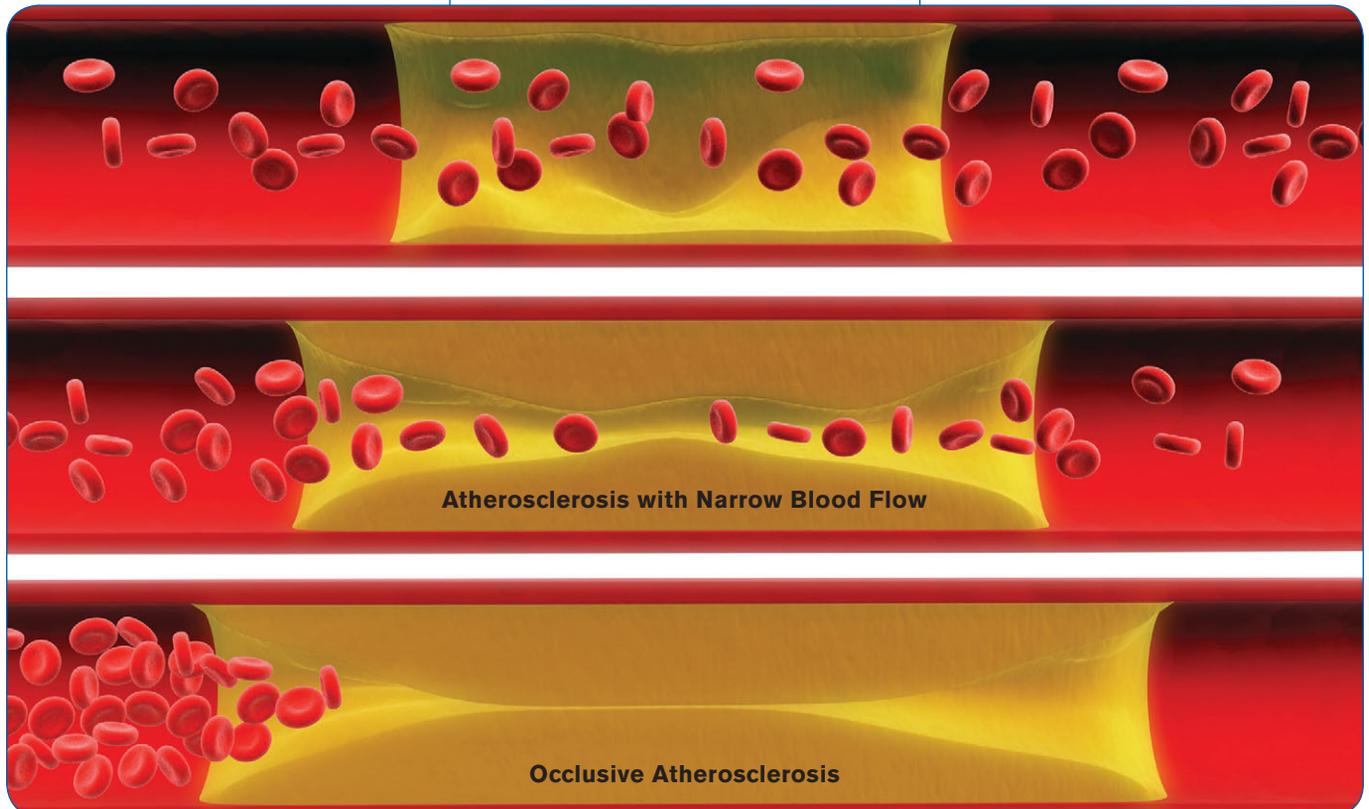
Blood Test Super Sale – March 31st through June 2, 2014.

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

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

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

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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.*

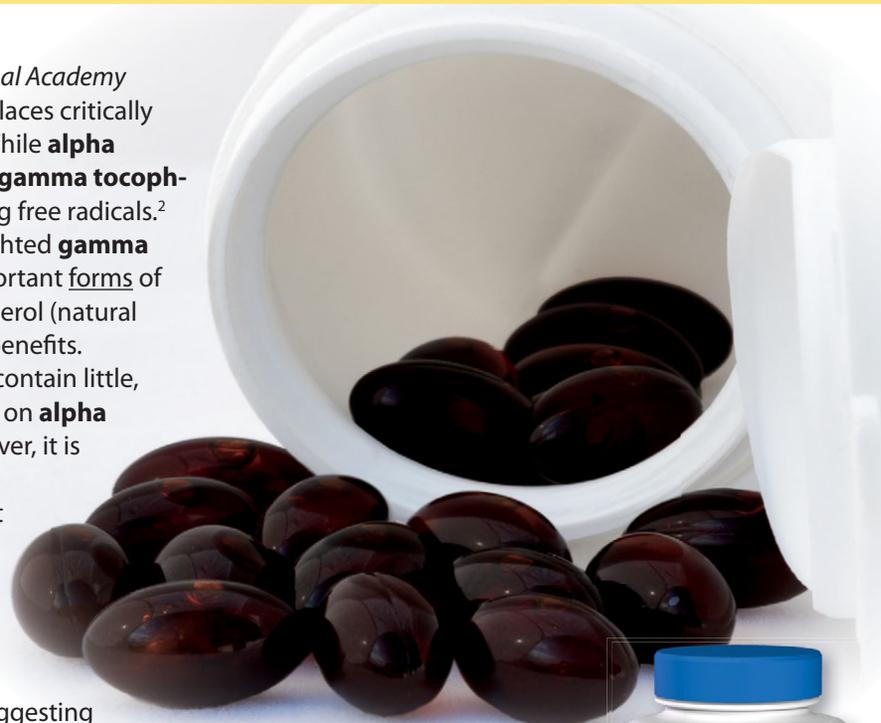
In a human study that combined **gamma tocopherol** with **sesame lignans**, gamma tocopherol/ sesame was **25% more effective** than gamma tocopherol/ tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.^{4,5} Since tocotrienols are considered nature's most potent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

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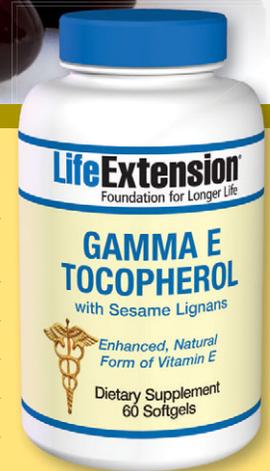
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Gamma E mixed tocopherol	359 mg
Gamma tocopherol	197.45-269.25 mg
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To order Provinal® Purified Omega-7, call 1-800-544-4440 or visit www.LifeExtension.com

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.

ULTIMATE PROSTATE PROTECTION

Now With **Thymoquinone**

At Life Extension®, we continually update our formulas to reflect the latest research findings.

Ultra Natural Prostate formula, now upgraded to include **thymoquinone**, provides the latest scientifically validated, standardized botanical extracts shown to promote healthy prostate function. No other prostate protection formula provides such a broad array of nutrients to support the multiple factors involved in supporting the aging prostate gland. Here are the ingredients in the new **Ultra Natural Prostate** formula:

- **Thymoquinone** targets prostate cells to promote healthy **apoptosis** (orderly removal of senescent cells).¹⁻⁹
- **Standardized lignans** convert to *enterolactone* in the intestine, which is then absorbed into the bloodstream to provide support for prostate cells against excess estrogen levels.¹⁰⁻¹²
- **AprèsFlex®**, supports normal inhibition of *5-lipoxygenase* or *5-LOX*, an enzyme that is associated with undesirable cell division changes.^{13,14}
- **Stinging and Dwarf nettle root extracts** help support prostate cells against excess estrogen levels.^{15,16}
- **Saw Palmetto CO2 extract** helps inhibit dihydrotestosterone (DHT) activity in the prostate, helps support normal urinary flow, and helps regulate inflammatory reactions in the prostate.¹⁷⁻²⁰
- **Pygeum** (*Pygeum africanum*) extract helps suppress prostatic glandin production in the prostate and supports healthy urination patterns.^{21,22}
- **Pumpkin seed oil**, from select pumpkins, enhances the composition of free fatty acids and augments saw palmetto's benefits.²³⁻²⁵
- **Beta-sitosterol** enhances the protective effects of other botanical extracts and helps improve quality of life.²⁶⁻²⁸
- **Graminex® Flower Pollen Extract™**, has been shown to help relax the smooth muscles of the urethra and help regulate inflammatory reactions.²⁹⁻³¹
- **Boron** has been shown to slow elevation of prostate-specific antigen (PSA).³²⁻³⁴
- **Lycopene**, supports efficient cellular communication, helps maintain healthy DNA, regulates hormonal metabolism, and promotes healthy prostate size and structure.³⁵⁻⁴¹

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Item # 01895

The suggested daily dose of two softgels of **Ultra Natural Prostate** provides:

Saw Palmetto CO2 extract (fruit) [providing 272 mg total fatty acids]	320 mg
Graminex® Flower Pollen Extract™ (from rye)	252 mg
Stinging and Dwarf nettle extracts (root)	240 mg
Beta-Sitosterol (from pine)	180 mg
ThymoQ™ Phospholipid Complex [Phospholipids, thymoquinone (10 mg)]	170 mg
Pygeum extract (bark)	100 mg
Pumpkin seed oil [providing 170 mg total fatty acids]	200 mg
AprèsFlex® Indian frankincense (<i>Boswellia serrata</i>) extract (gum resin) [providing 14 mg AKBA1]	70 mg
Proprietary Enterolactone Precursors Blend [HMRLignan™ Norway spruce (<i>Picea abies</i>) (knot wood) and Flax (seed) lignan extracts]	20 mg
Lycopene [from natural tomato extract (fruit)]	10 mg
Boron (as Albion® bororganic glycine)	3 mg

¹ 3-O-acetyl-11-keto-β-boswellic acid

A bottle of 60 softgels of **Ultra Natural Prostate** retails for **\$38**. If a member buys four bottles, the price is reduced to **\$26.25** per bottle. If a member buys 12 bottles, the price is **\$24**.

Contains soybeans.

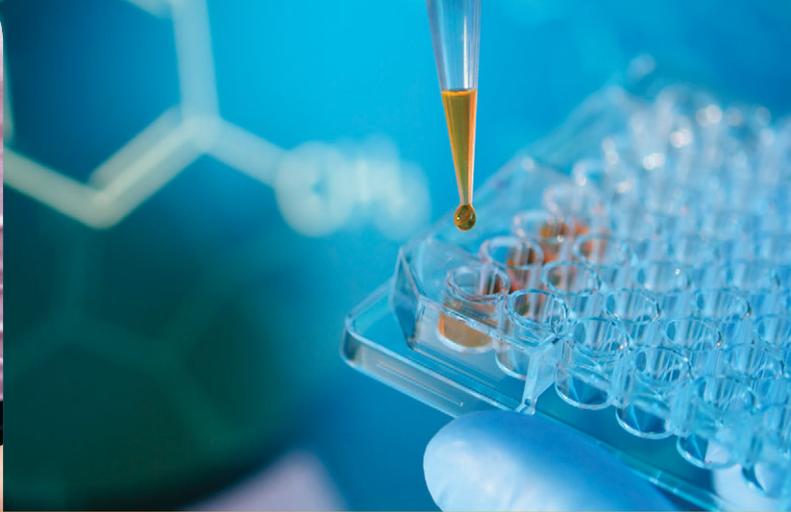
AprèsFlex® is a registered trademark of Laila Nutraceuticals exclusively licensed to PL Thomas- Laila Nutra LLC, U.S. Patent No. 8,551,496 and other patents pending. HMRLignan™ is a trademark used under sublicense from Linnea S.A. US Patents 6,319,524 and 6,669,968. Albion® is a registered trademark of Albion Laboratories, Inc.

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To order Ultra Natural Prostate, 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.



IN THE NEWS

Low-Dose Aspirin Reduces Risk Of Dying Among Heart Failure Patients By 42%

In an article published recently in the journal *Circulation: Heart Failure*, researchers from Ireland report a survival benefit for low-dose aspirin among heart failure patients.*

The study evaluated 1,476 men and women enrolled in a heart failure disease management program. Aspirin was prescribed to 892 subjects, among whom 828 were recommended a low dose of **75 milligrams** per day. Over a follow-up period of up to twelve years (median of 2.6 years), 464 deaths occurred.

Subjects who used low dose aspirin had a **42%** lower adjusted risk of dying over follow-up and **30%** lower risk of being hospitalized for heart failure in comparison with non-aspirin users.

Those who used high-dose aspirin experienced a risk of dying similar to those who did not use the drug.

Editor's Note: Authors Margaret Bermingham and her colleagues observe that in recent trials that identified a greater risk of cardiovascular and heart failure events in aspirin users in comparison with those who used the anticoagulant drug warfarin, the dose of aspirin ranged from **162 to 335 milligrams** per day, which is much higher than the low dose commonly used in Europe. They remark that the current findings “challenge the belief that aspirin should be avoided in secondary prevention patients who go on to develop heart failure” and go on to suggest that patients on higher antiplatelet doses of aspirin may benefit from aspirin dose reduction.

—D. Dye

* *Circ Heart Fail.* 2014 Feb 3.

Dietary Supplements Part Of A Healthy Lifestyle

A review published in *Nutrition Journal* concludes that, rather than compensating for poor eating habits and a lack of exercise, the use of nutritional supplements is part of an overall healthy lifestyle among the majority of those who use them.*

“Compiling the available data on the health habits of dietary supplement users, we gained a sharper insight into the positive lifestyle choices of this large segment—one half to two-thirds—of the American population that takes supplements,” remarked coauthor Annette Dickinson, PhD. “Evidence from numerous surveys shows that dietary supplement users are more likely than non-users to adopt a number of positive health-related habits such as consuming healthier diets, exercising regularly, maintaining a healthy body weight, and avoiding tobacco products.”

“Dietary supplement users typically make healthful habits part of each day, and many stick with their supplement regimen for years,” added coauthor Douglas McKay, ND.

Editor's Note: Drs. Dickinson and McKay found that reliance upon food alone to receive one's nutrients resulted in intake levels below the Estimated Average Requirement for many nutrients. This status was improved by 50% by the consumption of enriched and fortified foods, and was further improved by supplementation.

—D. Dye

* *Nutr J.* 2014 Feb 6;13(1):14.



Meta-Analysis Affirms Association Between Omega-3 Fatty Acid Supplementation And Lower Markers Of Inflammation

The results of a meta-analysis published in *PLoS One* contribute further evidence of an anti-inflammatory benefit for supplementation with marine-derived omega-3 fatty acids EPA and DHA.*

Researchers selected 68 randomized trials that examined the effects of omega-3 fatty acids in a total of 4,601 participants. The trials involved subjects with chronic autoimmune disease, chronic non-autoimmune disease, or healthy participants.

A pooled analysis of all subjects confirmed a significant association between omega-3 fatty acid supplementation and decreased blood levels of C-reactive protein (CRP) and interleukin-6 (IL-6), which are markers of inflammation. Among those with chronic non-autoimmune disease, a greater reduction in blood levels of IL-6 and tumor necrosis factor-alpha (another marker of inflammation) was observed in association with a longer duration of supplementation. A similar relationship was observed for IL-6 among healthy participants.

Editor's Note: When studies that utilized fish as a source of omega-3 fatty acids were separately analyzed, an association was found for a decrease in interleukin-6 with increased intake, but unlike fish oil supplements, fish alone did not decrease CRP or tumor necrosis factor.

—D. Dye

* *PLoS One*. 2014 Feb 5;9(2):e88103.



Higher Vitamin C Levels Linked To Lower Risk Of Hemorrhagic Stroke

A presentation at the American Academy of Neurology's 66th Annual Meeting revealed a protective effect for high plasma levels of vitamin C against the risk of hemorrhagic stroke.*

"Scurvy is caused by vitamin C deficiency, specifically a plasma vitamin C concentration of less than 11 micromoles per liter, and may have hemorrhagic manifestations," write authors Stéphane Vannier, MD, and colleagues. "Vitamin C depletion (less than **38 micromoles per liter**) is associated with cardiovascular diseases and could increase intracerebral hemorrhage risk."

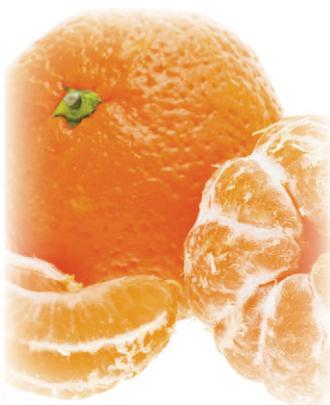
The researchers compared plasma ascorbate levels of 65 acute intracerebral hemorrhage patients with an equal number of control subjects.

Subjects with stroke had depleted vitamin C levels averaging **35.3 micromoles per liter**, in comparison with the control group, whose levels were normal at an average of **56.2 micromoles per liter**. Depleted levels of vitamin C were also associated with longer hospitalization.

Editor's Note: Hemorrhagic stroke is characterized by bleeding in the brain and, although less common than ischemic stroke, is associated with a greater risk of mortality.

—D. Dye

* American Academy of Neurology 66th Annual Meeting, Philadelphia, April 26-May 3, 2014.



Creatine Shows Promise In Huntington Disease

A trial conducted at Massachusetts General Hospital has uncovered a benefit for creatine in delaying the symptoms of the inherited neurodegenerative disorder known as Huntington disease in asymptomatic adults.*

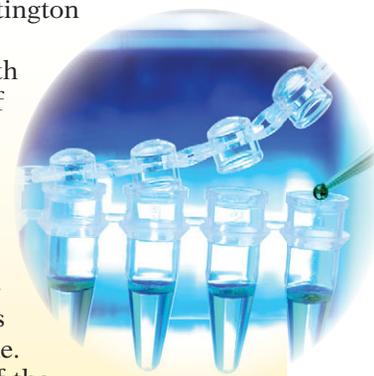
The trial included 109 men and women with a family history of Huntington disease, some of whom were aware of carrying a mutated form of the gene that causes the disease. For the double-blinded portion of the trial, half of the participants received a placebo and the remainder received **30 grams** creatine per day for six months. This was followed by a 12 month open-label period in which some of the participants who received a placebo were switched to creatine.

At the end of the placebo-controlled phase of the trial, the rate of atrophy in the brain's cortex and striatum among pre-manifest Huntington disease carriers was slower among those who received creatine than among the placebo group, who experienced progression.

Editor's Note: This benefit was also observed among presymptomatic subjects who began creatine supplementation after the placebo-controlled phase.

—D. Dye

* *Neurology*. 2014 Feb 7.





Better Think Twice Before Adding That Spoonful Of Sugar

The conclusion of a study described recently in *JAMA Internal Medicine* suggests that adding sugar to the diet could significantly increase the risk of dying from cardiovascular disease, the leading cause of death in the developed world.*

Researchers at the CDC evaluated data from participants in the National Health and Nutrition Examination Surveys (NHANES) of the US population. While **71.4%** of adults consumed at least **10%** or more of their calories from added sugar during 2005-2010, sugar counted for at least **25%** of the calories among **10%** of the group. When the researchers examined the association between added sugar and the risk of cardiovascular death over a median 14.6 years of follow-up, subjects whose intake was among the top one-fifth of participants had an adjusted risk that was twice that of participants whose intake was among the lowest fifth.

Editor's Note: An intake of sugar that accounted for **25%** or more of one's calories was associated with a **2.75** times greater risk of cardiovascular disease mortality in comparison with an intake of less than **10%**.

—D. Dye

* *JAMA Int Med.* 2014 Feb 3.

Primate Brains Show Omega-3 Benefit

In the *Journal of Neuroscience*, Oregon Health and Science University researchers report a brain benefit for the omega-3 fatty acid docosahexaenoic acid (DHA) in rhesus macaques.* The study is the first to utilize functional brain magnetic resonance imaging (fMRI) to observe the interaction of multiple brain networks in live monkeys.

The research involved rhesus macaques between the ages of 17 and 19 who had been given life-long diets that were low or high in DHA. Damien Fair, PA-C, PhD, and his colleagues found stronger connectivity of early visual pathways in the brains of monkeys given high-DHA diets as well as increased connections within brain networks similar to those found in humans, including those related to cognition and higher-level processing.



“The data shows the benefits in how the monkeys’ brains organize over their lifetime if in the setting of a diet high in omega-3 fatty acids,” Dr. Fair concluded.

Editor's Note: Dr. Fair added that, “The data also shows in detail how similar the networks in a monkey brain are to networks in a human brain, but only in the context of a diet rich in omega-3-fatty acids.”

—D. Dye

* *J Neurosci.* 2014 Feb 5.

Young US Workers Benefit From Mediterranean Diet

An article published in the journal *PLoS One* reveals a protective effect for a Mediterranean diet, characterized by an abundance of fruit, vegetables, whole grain, nuts, fish, and olive oil, against the risk of cardiovascular disease in Midwestern firefighters.*

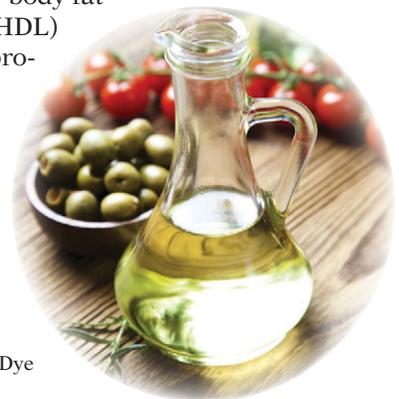
Lifestyle questionnaire responses of 780 male firefighters were scored on their adherence to a Mediterranean-style diet. Subjects whose adherence to the diet was greatest had a **35%** lower risk of metabolic syndrome in comparison with men whose adherence was lowest. The group with the greatest adherence also had a **43%** lower risk of weight gain over the previous five years, lower body fat percentage, greater high-density lipoprotein (HDL) cholesterol levels and lower low-density lipoprotein (LDL) cholesterol.

“Our study adds more evidence showing the health benefits of a Mediterranean diet, even after adjusting for exercise and body weight,” commented study coauthor Stefanos Kales.

Editor's Note: Metabolic syndrome is a disorder characterized by a cluster of risk factors, including abdominal obesity, disordered lipids, hypertension, and elevated blood glucose, which significantly increases the risk of developing diabetes or cardiovascular disease.

—D. Dye

* *PLoS One.* 2014 Feb 2.



Meta-analysis Associates Omega-3 Fatty Acid Supplementation With Lower Risk Of Death From All Causes Over Follow-up

The results of a meta-analysis published in the journal *Nutrition, Metabolism, and Cardiovascular Diseases* reveal a reduction in the risk of dying from cardiac or any other cause among coronary heart disease patients supplemented with omega-3 fatty acids in trials ranging from less than three months to 4.6 years.*

Researchers at Nanjing University selected fourteen clinical trials involving a total of 16,318 participants randomized to receive a placebo and 16,338 subjects given the omega-3 fatty acids EPA and/or DHA that evaluated the supplements' effects on cardiovascular events, cardiac death, sudden cardiac death, or death from any cause. Those who received the fatty acids had a **12%** lower average risk of dying from cardiac causes, a **14%** lower risk of sudden cardiac death and an **8%** lower risk of death from any cause over follow-up in comparison with subjects who received a placebo.

Editor's Note: A separate analysis limited to those diagnosed with coronary atherosclerosis (before any occurrence of heart attack or heart failure) uncovered a **51%** reduction in the risk of major cardiovascular events in association with omega-3 supplementation compared to placebo.

—D. Dye

* *Nutr Metab Cardiovasc Dis.* 2013 Dec 25



Cinnamon Improves Liver Enzymes And Other Factors In Nonalcoholic Fatty Liver Disease

A recent issue of the journal *Nutrition Research* described the outcome of a trial conducted by Iranian researchers which revealed a benefit for cinnamon in men and women with nonalcoholic fatty liver disease (NAFLD).*

The trial included fifty men and women between the ages of 20 and 65 years with NAFLD. Participants were randomized to receive two 750 milligram capsules of cinnamon or a placebo daily for twelve weeks. Blood samples collected before and after the treatment period were analyzed for fasting blood glucose, lipids, liver enzymes, and C-reactive protein, a marker of inflammation.



Among those who received cinnamon, a significant reduction in glucose, total cholesterol, insulin resistance, triglycerides, C-reactive protein, and liver enzymes occurred, while remaining relatively unchanged among those who received a placebo.

Editor's Note: Nonalcoholic fatty liver disease includes steatosis, nonalcoholic steatohepatitis (NASH), fibrosis, cirrhosis, and hepatocellular carcinoma, and can result in death if left untreated.

—D. Dye

* *Nutr Res.* 2014 Feb;34(2):143-8.

Too Much Sitting Linked To Major Disability For Those Over Age 60

A team of researchers from Northwestern University's Center for Healthcare Studies became the first group to identify sedentary behavior as an independent risk factor for disability in performing activities of daily life (ADL) such as eating, getting in and out of bed, and bathing.* "This is the first time we've shown sedentary behavior was related to increased disability regardless of the amount of moderate exercise," said Dorothy Dunlop, lead author of the study.

Study participants included 2,286 adults aged 60 and older from the National Health and Nutrition Examination Survey. Participants wore an accelerometer (a device that measures physical activity) for at least four days and underwent a physical exam.

Participants spent almost 9 hours a day being sedentary during waking hours and **3.6%** reported ADL disability. The odds of ADL disability were **46%** greater for each daily hour spent in sedentary behavior even after being adjusted for moderate-vigorous activity, socioeconomic status, and other health factors. This study revealed a strong relationship between increased sedentary behavior and the presence of ADL disability, independent of moderate or vigorous activity.

Editor's Note: To cut down on sitting time, the study authors suggest standing up when you talk on the phone and standing up during meetings. They also suggest parking in a space far away from the grocery store or mall, and when you get up to have a glass of water, they say you should take a walk around the house or office. Also, they suggest people take the stairs instead of an elevator whenever possible.

—A. Pryce



* *J Phys Act Health.* 2014 Feb 5.



PQQ



PROMOTES

Mitochondrial Biogenesis

Critical Importance of Mitochondria

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

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

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

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

Until recently, the only natural ways for aging individuals to increase the number of mitochondria in their bodies were long-term calorie restriction or exhaustive physical activity.

PQQ offers a viable alternative.

The Ultimate Cell Rejuvenator

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

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

- **Antioxidant power.**
- **Favorably modulates gene expression.**
- **Mitochondrial defense.**

Vital Protection for the Aging Heart and Brain

PQQ is an **essential nutrient**, meaning your body cannot make it on its own. A growing body of research indicates that **PQQ's** unique nutritional profile supports heart health and cognitive function—alone and in combination with **CoQ10**.^{15,16} This comes as no surprise, given how much energy these vital organs need.

Research shows that **PQQ** supports **heart cell function** in the presence of free radicals and promotes blood flow in heart muscle.¹⁷

When taken in combination with **CoQ10**, just **20 mg per day** of **PQQ** has been shown to promote **memory, attention, and cognition** in maturing individuals.¹⁸

A Breakthrough Weapon in the Battle Against Aging

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

A bottle containing **30 20 mg** vegetarian capsules of **PQQ Caps with BioPQQ**® retails for \$40. If a member buys four bottles, the price is reduced to **\$27** per bottle. (Item #01647)

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

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



Item #01647

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and Quickly Absorbed...
for a
Restful Night's Sleep

LIQUID MELATONIN

The consequences of **sleep deprivation** go far beyond fatigue and diminished performance. Sleep deprivation can impact the immune system, the nervous system, memory and cognitive impairment, mood, and more.¹

Ultimately, lack of sleep leads to an overall poor quality of life.

If you're one of the more than **20 million** Americans who suffer from occasional sleep problems,² you don't have to settle for frustrating nights of tossing and turning.

A new, fast-acting **LIQUID melatonin** may enable you to...

TAKE BACK CONTROL OF YOUR SLEEP!

Melatonin is well known for its ability to regulate your body's internal clock. However, as you grow older, the secretion of melatonin declines significantly as the pineal gland becomes calcified.^{3,4}

Fortunately, melatonin has been studied and shown to be effective for managing disturbances in circadian rhythms.^{5,6}

A meta-analysis of 17 studies concluded that melatonin supplementation **decreases the time it takes to fall asleep** while **increasing sleep efficiency** and **total sleep duration**.⁷

In fact, melatonin has been shown to increase the speed of falling asleep—and the quality of sleep—in **about 60% of people who use it**.^{8,9}

MELATONIN LIQUID DROPS!

Not all people benefit from melatonin when it's in the form of a capsule or tablet. However, some report that by applying melatonin *liquid* drops under their tongue at bedtime for immediate absorption, they are able to sleep better. While any kind of liquid melatonin has been reported to work, Life Extension has developed melatonin liquid drops that are completely free of **sugars**.

This soothing **Fast-Acting Liquid Melatonin** has a great tasting natural citrus vanilla flavor and is quickly absorbed for a restful night's sleep.

An increase in age doesn't have to mean an increase in sleep problems. Consider making **Liquid Melatonin** a part of your **healthy sleep program**.

The retail price for 1 bottle of **Fast Acting Liquid Melatonin** is \$12. If a member buys 4 bottles, the price is reduced to **\$8.25** a bottle. Seven drops provide about **1 mg** of melatonin and there are approximately **1,180** drops in each bottle. Most people place one to two full eyedroppers under their tongues at night which provides **3 to 6 mg** of melatonin.



ITEM# 01734

WHY WE NEED SLEEP

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

- Skin health and youthful appearance^{10,11}
- Healthy collagen formation¹²
- Insulin levels already within normal range^{13,14}
- Healthy body weight^{15,16}
- Glucose levels already within normal range^{17,18}
- Blood pressure already within normal range^{13,19}
- Healthy cell division²⁰
- Cardiovascular health^{21,22}
- A good mood²³

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Target PSA!

Four-Food Formula

Breakthrough Research

A high percentage of men will endure some form of prostate-induced discomfort over the course of their lifetimes.¹

A placebo-controlled, double-blind trial presented **September 2013** reported that a specific blend of **pomegranate, green tea, turmeric, and broccoli**—formulated together in a capsule called **Pomi-T®**—powerfully maintained healthy levels of *prostate specific antigen (PSA)*²

Life Extension® offers this same capsule for men who are serious about supporting and protecting their prostate as they age—by **targeting PSA**. The four foods in **Pomi-T®** have healthful benefits for your entire body. But their constituent molecules, naturally present in food, have now been shown to concentrate within prostate tissue and provide a rich array of complementary, prostate-supporting, **PSA-modulating** mechanisms.³⁻¹⁹



• POMEGRANATE

- Specifically concentrates in prostate tissue³
- Supports healthy *apoptosis*, your body's system of removing senescent cells when needed⁴⁻⁶
- Promotes healthy levels of inflammatory response, inhibits androgen receptor expression, and inhibits abnormal cell migration.^{5,7,8}



• GREEN TEA

- *EGCG*, a green tea *catechin*, specifically concentrates in prostate tissue where it regulates *PSA (prostate specific antigen)* production to maintain healthy PSA levels^{9,10}
- Helps modulate genetic expression and activity of *androgen receptors*¹¹
- Supports body's natural defenses against oxidation.¹²



• TURMERIC

- Promotes a healthy level of inflammatory response, chiefly due to its main component, *curcumin*¹³
- Helps modulate cell signaling mechanisms, inhibiting abnormal cell adhesion and migration.¹⁴
- Promotes healthy cell proliferation and apoptosis.¹⁵



• BROCCOLI

- Helps regulate enzymes (*phase II detoxifying enzymes*) in gut and liver tissue that helps render harmful dietary molecules harmless¹⁶
- Helps promote healthy PSA levels¹⁷
- Supports regulation of cell growth and transcription factors and normal production of apoptosis-inducing proteins^{18,19}



Item #01797

The novel and scientifically validated blend of food in **Pomi-T®** represents the **next generation** of targeted support for the aging prostate!

The suggested daily dosage of two vegetarian capsules of Pomi-T® provides:

Pomi-T® Super Foods Proprietary Blend **960 mg**

Broccoli (florets and stalks) powder, Turmeric (root) powder
Pomegranate (whole fruit) powder, and Green Tea (leaf) extract 5:1

A bottle of 60 vegetarian capsules of **Pomi-T®** retails for \$33.33. Members of the Life Extension Foundation pay only **\$25** per bottle.

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BY MONICA MOLLIKA & WILL BRINK

Weight Loss *Benefits Of* LACTOFERRIN

Lactoferrin is well known for its immune-supportive properties.¹⁻³ Surprising new research is uncovering an unexpected benefit—that lactoferrin might help humans **shed body fat** as well.

Lactoferrin's ability to reduce body fat was first discovered at the cellular level. In these studies, researchers found that lactoferrin can help fight against obesity by inhibiting the accumulation of fat in fat cells and by inhibiting the formation of new fat cells (a process called *adipogenesis*).^{3,4}

LACTOFERRIN & WEIGHT LOSS





Fat Cells

A follow-up study investigating the molecular mechanism behind these results showed that lactoferrin works by inhibiting fat synthesis and stimulating liberation of stored body fat (a process called *lipolysis*).⁵ These are important findings with direct relevance for the well-documented expanding waist lines in Americans of all ages,⁶⁻⁸ and its ensuing detrimental health consequences.^{7,9-13}

Lactoferrin For Fat Loss

The potential anti-obesity effect of lactoferrin was confirmed in obese mice, when researchers found that a lactoferrin-rich diet resulted in increased fat loss.¹⁴ Another study in mice found that a lactoferrin-rich **whey protein isolate** prevents obesity by inhibiting weight gain, and fights obesity by enhancing fat loss.¹⁵ During spontaneous feeding (when mice were not calorie restricted), the lactoferrin-rich whey protein isolate prevented weight gain and fatty liver formation. During a calorie-restricted diet, the lactoferrin-rich whey protein isolate enhanced **fat loss**.¹⁵

New research is showing that lactoferrin might help humans shed body fat as well. One indicator is that higher blood levels of lactoferrin are associated with **lower** BMI (body mass index, an indicator of obesity), **lower** waist-to-hip ratio, and **lower** fasting triglyceride (blood fat) and glucose concentrations.^{16,17}

A number of studies confirm this finding as well. In one notable study, healthy men and women between 22 and 60 years old supplemented with **300 mg** of lactoferrin tablets a day for 8 weeks.¹⁸ Subjects were told to maintain their regular food habits. Compared to the placebo group, the group taking the lactoferrin supplement experienced a significant **12.3%** reduction in intra-abdominal (visceral) fat.¹⁸ The lactoferrin group also showed significant decreases in body weight (**-3.3 lb**), BMI (**-0.6**), hip circumference (**-1 inch**), and waist circumference (**-1.7 inches**). The placebo group, on the other hand, **gained 2.2 pounds**.

The researchers concluded that lactoferrin appears to be a promising supplement for counteracting the accumulation of belly fat.

Another Fat Fighting Target Of Lactoferrin

Another way lactoferrin can help in the fight against obesity and its associated metabolic and cardiovascular complications is by decreasing the risk of a condition called **metabolic endotoxemia**.

Metabolic endotoxemia is a condition characterized by two- to three-fold increases in blood **lipopolysaccharide (LPS)** levels.^{19,20} Lipopolysaccharide is an endotoxin, a toxin produced by certain bacteria.¹⁹

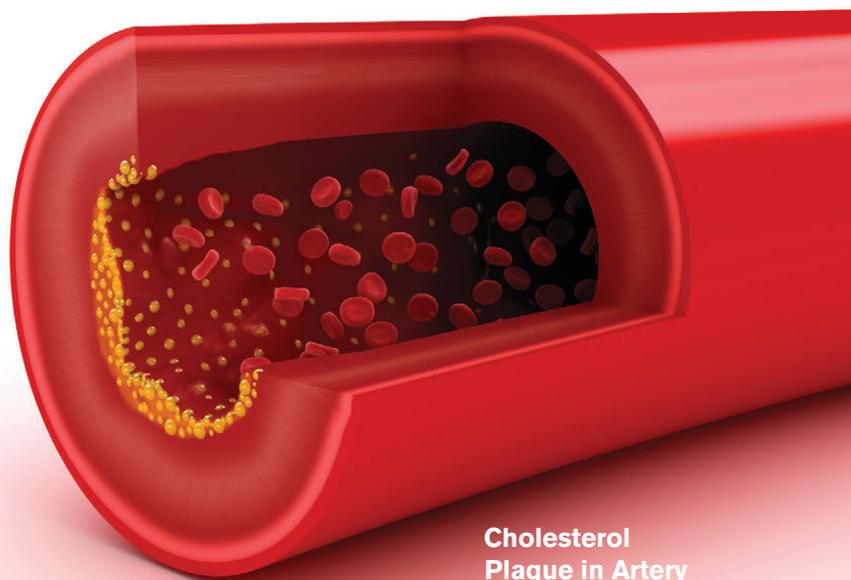
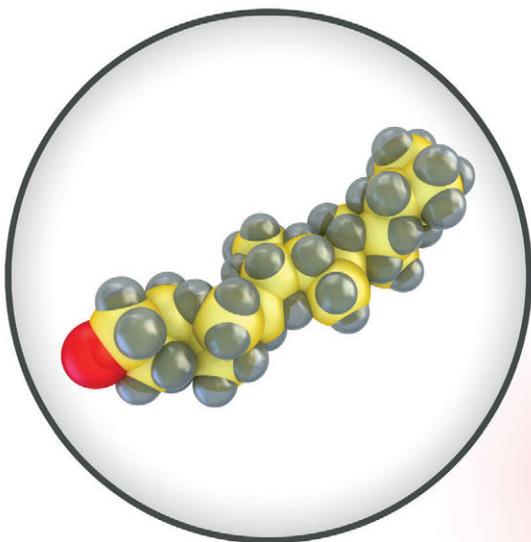
Unhealthy food habits (like the typical Western diet high in fat and processed foods, and low in fiber) increase the production, absorption, and blood levels of lipopolysaccharide (LPS), which in turn increase the risk of metabolic endotoxemia.¹⁹⁻²¹

This is important because elevated blood levels of lipopolysaccharide and metabolic endotoxemia can result in **insulin resistance** and **obesity**.^{19,22} In addition, metabolic endotoxemia produces low-grade inflammation that can damage many organs in the body.²²⁻²⁵

By binding to and sequestering lipopolysaccharide,^{26,27} lactoferrin and its metabolites help prevent the development of metabolic endotoxemia and can help **relieve** an already established metabolic endotoxemia condition.

Metabolic endotoxemia represents a molecular link between obesity and the diseases related to it.

Further evidence for the involvement of metabolic endotoxemia in the development of obesity is the finding that it directly stimulates the formation of new fat cells.²⁸ Thus, lactoferrin might inhibit new fat cell formation via several different mechanisms.^{3,4}



**Cholesterol
Plaque in Artery**

Lactoferrin's Role As A Prebiotic

In addition to fighting obesity and protecting against metabolic endotoxemia, lactoferrin also has a number of actions that contribute to a healthy gut.

First, it inhibits the growth of bacteria that produce bacterial toxins, such as *Listeria*, *Staphylococcus*, *Salmonella*, *Clostridium*, and *Escherichia coli*.²⁹⁻³³ Research has shown that lactoferrin supplementation reduces both intestinal levels of toxins (such as lipopolysaccharide) produced by bacteria, protects against lipopolysaccharide-induced immune cell stress, and down-regulates production of harmful reactive nitrogen species.^{34,35}

Lactoferrin stimulates the growth of several strains of good bacteria in the gut, such as various species of *Bifidobacteria*.³⁶⁻³⁸ A recent study found that digestion of lactoferrin in the stomach releases a peptide that has an even stronger *bifidogenic* (bifidobacteria growth promoting) effect than intact lactoferrin.³⁹ Lactoferrin also stimulates the growth of *Lactobacillus acidophilus*.³⁷ Since Lactobacilli and Bifidobacteria both promote a healthy gut flora, this might provide an even greater health benefit.^{40,41}

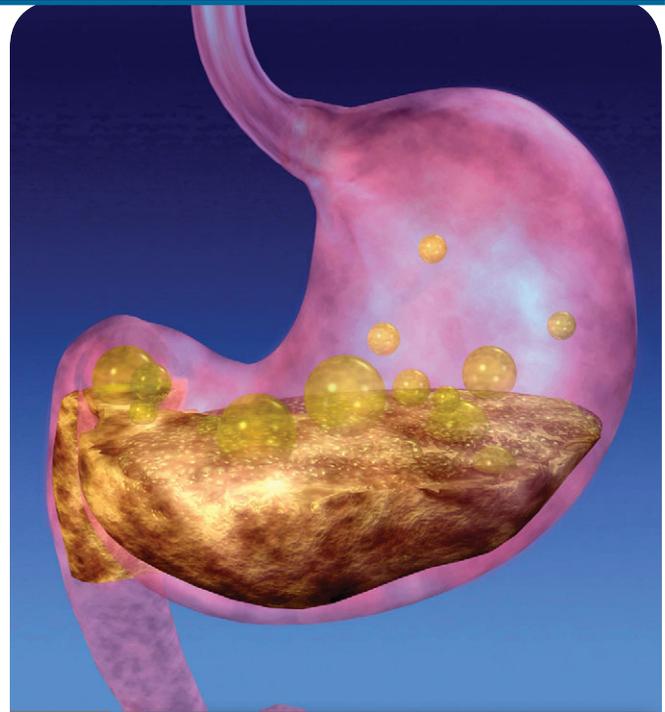
Lactoferrin Helps Prevent Osteoporosis

There is a growing interest in the scientific community regarding the potential therapeutic use of lactoferrin in osteoporosis. In fact, a number of recent studies have found that lactoferrin supplementation improved bone mineral density and bone strength.⁴²

Since osteoporosis primarily affects postmenopausal women, researchers investigated the effect of lactoferrin supplementation on bone parameters using rodents with surgically removed ovaries as a model for postmenopausal bone loss. The studies revealed that dietary lactoferrin promoted an increase in biomarkers of bone formation, decrease in biomarkers of bone resorption, and improvements in bone microarchitecture.⁴³⁻⁴⁵

Similar benefits have been found in humans as well. In a clinical study, 38 healthy postmenopausal women between 45 and 60 years old received a lactoferrin dietary supplement or placebo.⁴⁶ The researchers monitored bone health status by assessing blood markers of bone breakdown (resorption) and of bone formation. They discovered that lactoferrin supplementation significantly reduced bone breakdown and increased bone formation, moving toward restoring the balance of bone turnover in just six months.⁴⁶

This is the first demonstration in a clinical study that lactoferrin has a favorable effect on biomarkers of bone turnover in postmenopausal women, and confirms the findings previously seen in cell culture and rodent studies.



What You Need To Know

Lactoferrin: Beyond Immune Health

- Lactoferrin has well-documented anti-infective, immune strengthening, antioxidant, anti-inflammatory, and anti-cancer effects.
- New research is showing that lactoferrin might be an effective weight-loss agent that also can help maintain a healthy gut flora.
- Lactoferrin is a potent anabolic agent that stimulates bone growth and bone repair, and may help in preventing osteoporosis.
- Multiple studies have indicated that lactoferrin could play a role in the regulation of glucose control.
- Lactoferrin stimulates the growth of several strains of good bacteria in the gut.



Choosing The Right Form Of Lactoferrin

It should be noted that lactoferrin can come in two forms: apo-lactoferrin and holo-lactoferrin. One role of lactoferrin is to sequester and bind iron until it's needed by the immune system to fight pathogens. Apo-lactoferrin is iron depleted. Holo-lactoferrin contains iron.

Although studies suggest both forms are beneficial, apo-lactoferrin appears to be the more potent of the two as it relates to a number of benefits seen with lactoferrin.⁵¹⁻⁵⁴

Recent evidence has shown that lactoferrin helps prevent osteoporosis by acting as an anabolic and anti-catabolic agent in bone tissue^{42,43,47} and by stimulating bone growth and healing.⁴⁷ Studies have shown that lactoferrin potently induces the growth of bone forming cells called **osteoblasts**, while inhibiting the growth and activity of **osteoclasts**, another type of bone cell that breaks down bone tissue.^{42,47,48}

Summary

Lactoferrin continues to demonstrate a wide range of potential benefits to humans. It has well-documented anti-infective, immune strengthening, anti-inflammatory, and anti-cancer effects.⁴⁹

New research is showing that lactoferrin might be an effective weight-loss agent that also can help maintain a healthy gut flora. Lactoferrin is also a potent anabolic agent that stimulates bone growth and bone repair, and helps in prevention of osteoporosis.^{42,43,47,48}

Lactoferrin is a natural component of both human breast milk and cow's milk, which are ingested by infants. It is considered to be very safe and bovine lactoferrin has been granted GRAS (generally recognized as safe) status in the US.⁵⁰ ●

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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Lactoferrin And Blood Sugar Control

Multiple studies have indicated that **lactoferrin** could play a role in the regulation of glucose control. In mice being fed a high-fat diet, supplementation with a lactoferrin-rich **whey protein isolate** improved glucose tolerance compared to mice being fed the same diet, but supplemented with casein.¹⁵ And in humans, higher blood levels of lactoferrin are associated with **lower blood sugar levels** and higher **insulin sensitivity**.¹⁷

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Lactoferrin

Enhanced Immunity, Strong Bones, and Healthy Body Weight

As researchers continue to investigate the various immune benefits of **lactoferrin**, they are also discovering this protein's *other* important wellness factors.¹⁻⁸

Lactoferrin delivers a remarkably diverse range of health benefits. It has been shown to:

- Modulate immune function and support natural protection for healthy cells.^{1,4}
- Support lipolysis, the body's natural fat-balancing process.²
- Help maintain balanced bone formation and turnover.³
- Help promote beneficial bacterial flora growth in the intestines.^{5,6}
- Scavenge excess iron to block free radical damage.^{7,8}

Studies show that the iron-depleted form of lactoferrin—called **apolactoferrin**—has unique benefits and may be the superior choice for supplementation.⁹⁻¹² **Life Extension® Lactoferrin Caps** extracted from whey protein contain only the premium **apolactoferrin** form of lactoferrin.

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Contains milk.

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BY SUSAN SIMMONDS

Testing For C-reactive Protein May Save Your Life

Have you had your **CRP** levels tested? You should—because this simple **blood test** might just save your life.

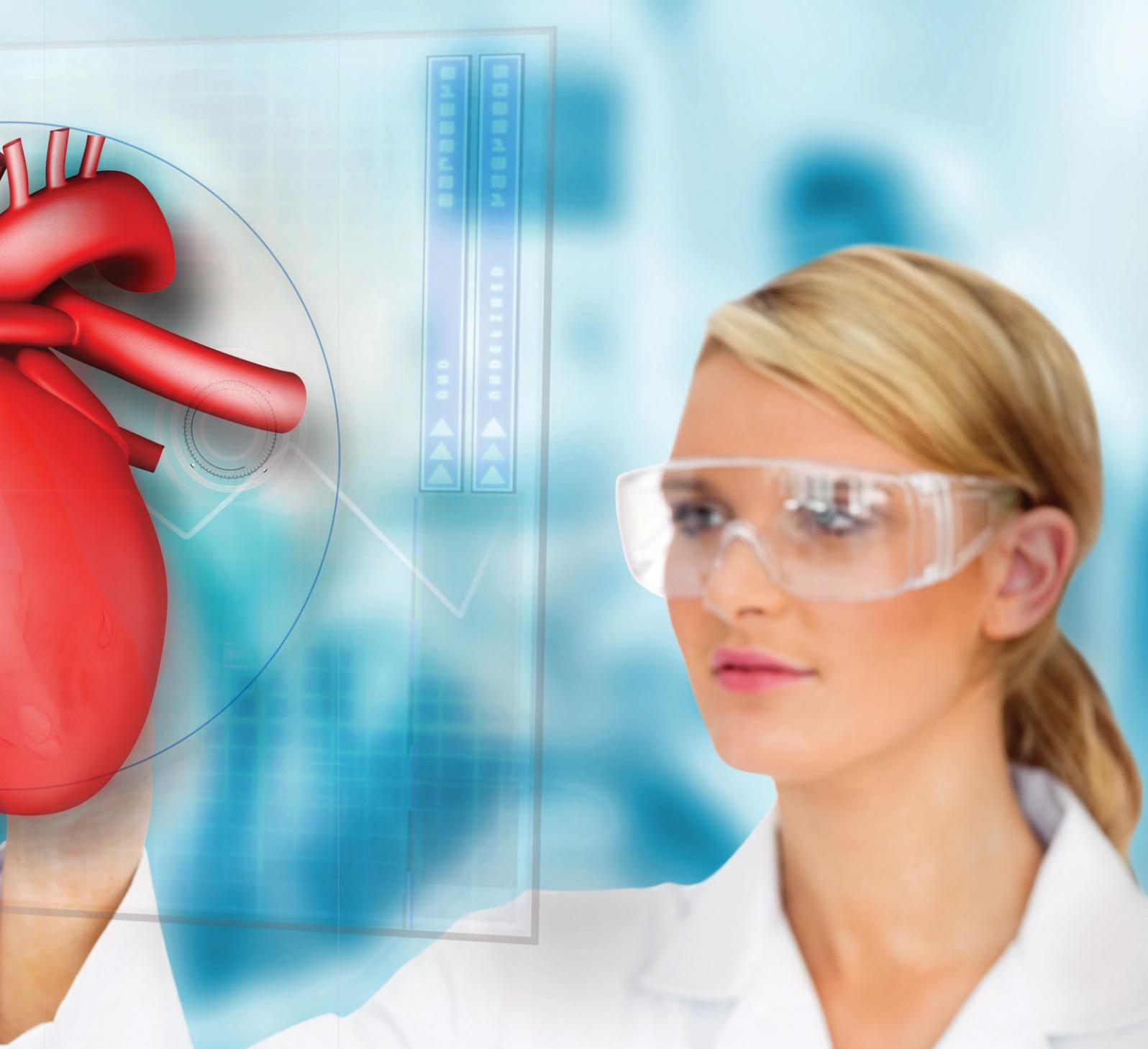
C-reactive protein, or CRP, has long been used as a marker of **inflammation** in the body.¹ High CRP levels are found in practically every known inflammatory state. Even if you have no symptoms of disease, elevated CRP levels may signal an increased risk for practically all degenerative disorders, including cardiovascular disease, cancer, diabetes, and more.²⁻⁶

Now, it turns out that CRP is more than just a marker of inflammation—it is also a cause of inflammation.⁷

Knowing your CRP status puts you in an enviable position. If it is elevated, you can take proactive steps to lower it, thereby slashing your risk of a long list of disorders related to chronic inflammation.

C-REACTIVE PROTEIN





What Is CRP?

C-reactive protein (CRP) is manufactured throughout the body, especially by immune cells, the liver, and by adipocytes (fat cells).⁸ During the early phase of an inflammatory stimulus (such as infection or tissue injury) CRP levels rise dramatically.⁹

CRP is an incredibly sensitive and robust “marker” of general inflammation.¹⁰ It’s used to track the progress of chronic inflammatory conditions such as rheumatoid arthritis, vasculitis, or inflammatory bowel diseases like Crohn’s disease.¹¹⁻¹³ In those cases, increased symptoms accompanied by a rise in CRP signals a “flare” of the disease, and indicates the need to provide anti-inflammatory therapy. >

More recently, however, CRP has been recognized as an active *cause* of inflammation in addition to simply being a *marker* of inflammation.⁷ This important discovery opened the door for additional ways to fight chronic inflammation.

When CRP binds to specific molecules in the body, it participates in rapidly raising the production of inflammatory signaling molecules called *cytokines* and other inflammatory mediators.¹⁴ This is a healthy function of acute inflammation because it helps speed up the race to the scene of any damage, and quickly destroys invading organisms.¹⁵

However, when CRP rises unchecked, it can contribute to destructive **chronic inflammation**.

It is easy to see why Big Pharma is now hotly pursuing CRP-inhibiting drugs.¹⁶ Fortunately, there are a number of methods that lower CRP by changing the underlying conditions that cause it to rise.

What CRP Can Reveal About Your Health

The use of CRP has been a standard diagnostic practice for many years in determining the status of known inflammatory disorders,¹⁷ such as rheumatoid arthritis and Crohn's disease, and in discriminating between inflammatory and functional bowel disorders.^{12,13,18}

But as we keep learning more about diseases that have been linked with inflammation, CRP is turning out to be a useful research tool for both diagnosis and **risk assessment**. This is especially the case with two major killers of Americans: cardiovascular disease and cancer.

Cardiovascular Disease

CRP levels are closely correlated with the risk of cardiovascular disease; the higher the CRP, the greater the risk.^{19,20} Even otherwise healthy people with modestly raised CRP levels have a significantly higher risk of future cardiovascular events.²⁰

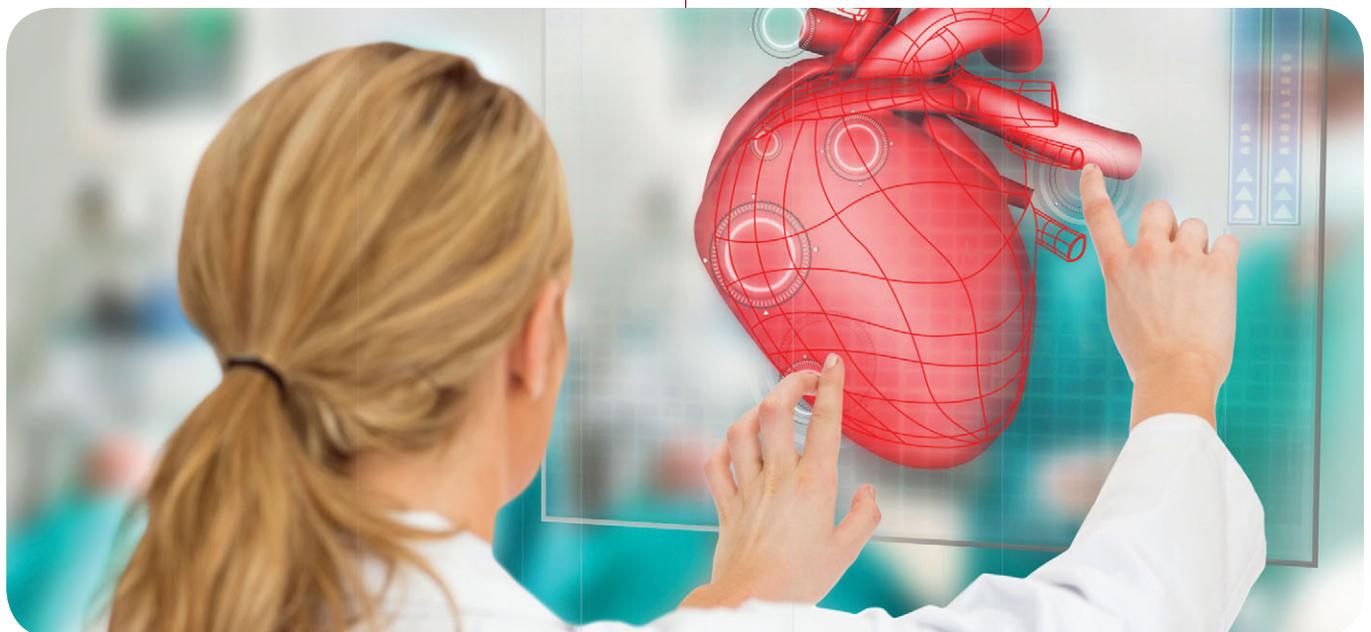
In one important study, patients with the highest CRP levels were at a **45%** increased risk for **coronary heart disease** compared with those having the lowest levels.²¹ Another study found that people with elevated CRP levels were **60%** more likely to develop **ischemic heart disease** and **30%** more likely to have a **cerebrovascular event**, compared to those with normal levels.²² In addition, CRP levels have now been shown to be capable of predicting serious complications in hospitalized patients with coronary artery disease.²³

Preliminary evidence suggests that CRP levels may even help distinguish between your risk for a fatal vs. a non-fatal heart attack, but that is far from established.²⁴

Such risk increases seem to hold true for other conditions, such as diabetes, that also contribute to cardiovascular disease.^{25,26} Indeed, in one study, women with the highest CRP levels had a **16-fold** risk for developing **diabetes** compared with those at the lowest levels.²⁵ In another study, the risk was about **2.8-fold** for both sexes.^{25,26}

CRP is also associated with other cardiovascular-related conditions such as high blood pressure.

In people with high blood pressure, CRP levels are correlated with stiffness of arteries and atherosclerosis, as well as damage to organs such as the heart and kidney.²⁷



In people with normal baseline blood pressure, CRP levels have repeatedly been shown to predict the later development of hypertension.²⁷

And people with heart rhythm disturbances, such as atrial fibrillation, have significantly higher CRP levels than do normal controls.²⁸

CRP levels are such strong indicators of cardiovascular risk that circulating levels of CRP are now being used to predict the likelihood of cardiovascular events and to assist in choosing therapy.²⁷

In addition to being a marker of risk, there is growing evidence that CRP *contributes* directly to cardiovascular and diabetes risk.^{26,27} Studies have shown the presence of CRP directly inside of most arterial plaques—and all heart lesions—after a heart attack.²⁰ Indeed, in a damaged brain or heart after a stroke or heart attack, there is a correlation between CRP and the size of the affected area; this is strong support for a contributing role of CRP in these diseases.¹⁶

Cancer

With the discovery that **cancer** is strongly related to overall **inflammation** status, there's been growing interest in CRP as a predictor of prognosis in a variety of cancer types.^{29,30} And, with strong evidence that CRP is an active (and destructive) participant in promoting inflammation, there's equally strong interest in discovering ways to actively lower a person's CRP levels to reduce their cancer risk—or to promote their recovery if they already have cancer.

Optimal **CRP** levels for everyone to strive for are under 0.55 mg/L in **men** and under 1.0 mg/L in **women**.

Interestingly, CRP is now associated with a number of cancers as a powerful tool for determining prognosis and survival.²⁹⁻³⁶ When CRP is measured at the time of diagnosis, high levels consistently predict poor survival, whereas normal (especially the lower-end of normal) levels predict good outcomes.³⁰⁻³⁶

For example:

In men with penile cancer, a CRP level greater than **20 mg/L** at diagnosis is significantly associated with the probability of developing lymph node metastases, a sign of poor outcome.³¹

In patients with advanced stomach cancer, those with a CRP level greater than **17 mg/L** had an **11%** greater chance of dying within 3 months after diagnosis, compared to those with lower levels.³² A later study found that CRP greater than **10 mg/L** was associated with a **77%** increase in poor overall survival, with a **196%** greater chance of having a higher disease stage, and an **81%** increase in the likelihood of tumor recurrence.³³



What You Need To Know

CRP Predicts Heart Disease And Cancer Risk

- C-reactive protein, or **CRP**, is a sensitive marker of inflammation. It rises quickly after an inflammatory attack, but should return to normal levels. When CRP remains high, it is an indication of chronic inflammation.
- Elevated CRP signals increased risk for many chronic inflammation-related disorders, including cardiovascular disease, cancer, diabetes, obesity, and more.
- But CRP is much more than simply a marker of inflammation; it actively participates in the inflammatory process.
- Lowering CRP levels, then, is a vital part of a healthy lifestyle and a host of safe, affordable nutritional supplements may offer immediate help.
- Get your CRP tested, and get started today on supplements that can work for you.



How To Lower Your CRP

With high levels of CRP being so closely tied to cardiovascular disease and cancer, the question you're probably wondering right now is, "How do I lower my CRP levels?"

For starters, your lifestyle has a direct impact on CRP levels. Certain dietary habits, such as a high intake of trans-fatty acids, can increase CRP levels, leading to a reason why *trans fats* increase cardiovascular risk to a greater degree

than one would expect based on its adverse effects on blood fat levels.³⁷

A 2013 study found that ideal health behaviors (such as diet, exercise, etc.) could lower CRP.³⁸ In that study, people having four to six "ideal behaviors" had up to a **32%** reduction in their CRP levels. Exercise alone has been shown to be a means of lowering high CRP. In fact, the higher the baseline CRP, the greater the impact of a reasonable exercise regimen on CRP.³⁹

Eating foods cooked at high temperature can increase inflammation.⁴⁰⁻⁴²

Avoiding high temperature-cooked food can reduce production of pro-inflammatory cytokines and CRP, thus helping to extinguish the inflammatory fire raging in the bodies of most aging people today.⁴⁰⁻⁴³

Wouldn't it be incredible if Americans could throw away side effect-laden pain killing drugs just by changing the way their food is prepared?

Some drugs, such as statins, have been shown to lower CRP levels in patients with elevated blood lipids.^{19,44} In fact, one study using *rosuvastatin* (Crestor®) showed that healthy people without raised blood cholesterol but with CRP levels greater than **2.0 mg/L** reduced hs-CRP levels by **37%** and reduced the frequency of major cardiovascular events (though the study didn't address the long-term consequences of statin therapy).⁴⁵ There are, however, other ways to lower CRP without a prescription.

Over a dozen dietary supplements have been shown to bring down CRP levels in laboratory or human models. Red yeast rice, for example, lowered CRP by nearly **24%** in people with moderately high cholesterol;⁴⁶ ginger reduced CRP in diabetic adults;⁴⁷ and vitamin C reduced plasma CRP **24%** in smokers.⁴⁸

The table on the next page describes 17 nutrients that have been shown to favorably influence CRP levels.

In order to determine your CRP level, all it requires is a low-cost **blood test**.

By lowering your CRP, you'll be protecting yourself against chronic inflammation *before* it progresses to a life-threatening disease.

What Are Optimal CRP Levels?

Heavier people usually have higher CRP levels, as **abdominal fat** provides fertile ground for over-production of deadly pro-inflammatory cytokines that cause CRP to increase. Obese individuals are often in a chronic pro-inflammatory state that sharply increases their risk of all degenerative diseases.

A simple way of suppressing CRP for many people is to shed abdominal fat pounds.

Optimal **CRP** levels for everyone to strive for are under 0.55 mg/L in men and under 1.0 mg/L in women.

CRP is strongly associated with survival in patients with colon and/or rectum cancers. Those with elevated levels of CRP were more likely to have lymph node (local) and distant metastases, invasion of blood vessels and nerves, and a higher stage diagnosis.³⁴ For patients with CRP greater than **5 mg/L**, only **13.3%** survived after 5 years, while **57%** of patients with lower CRP were still alive 5 years later.³⁴ Indeed, one study indicated that CRP was the only marker that was an independent predictor of disease-free survival.³⁰ CRP concentrations were higher in a group of colorectal cancer patients, at **2.4 mg/L**, compared with **1.9 mg/L** in healthy controls, and those with the highest CRP were **2.6** times as likely as those with the lowest levels to develop such cancers.³⁵

In pancreatic cancer, high plasma CRP levels at diagnosis indicated a **121%** increased risk of dying from the disease.²⁹

In breast cancer, a CRP level of greater than **10 mg/L**, compared with a level of less than **1 mg/L**, predicted³⁶:

- A **96%** greater risk of dying from any cause,
- A **91%** greater risk of dying from breast cancer specifically, and
- A **69%** greater risk of having additional breast cancer-related events.



TABLE: Selected Nutrients Known To Lower CRP

Nutrient	Key Effects*
Creatine	Prevented exercise-induced rises in CRP in athletes ⁴⁹
Curcumin	Lowered CRP more than control in patients with toxin-induced skin irritation ⁵⁰ Lowered CRP by a huge 6.4 mg/L in a meta-analysis of 6 studies of patients with elevated CRP ⁵¹
Fenugreek	Reversed elevated CRP levels in rats with experimental arthritis ⁵²
Ginger	Reduced hs-CRP in diabetic adults ⁴⁷
Green Tea Polyphenols	Lowered CRP in a rat model of systemic inflammation ⁵³
Isoflavones	Reduced CRP by 1.1 mg/L in postmenopausal women when combined with exercise ⁵⁴
L-carnitine	Lowered CRP in end-stage renal disease patients on dialysis ⁵⁵
Magnesium	Higher serum magnesium correlated with lower CRP in overweight middle-aged women ⁵⁶
Probiotics	Lowered hs-CRP in diabetes patients ⁵⁷
Omega-3 fatty acids	Low omega-3 in blood correlated with higher CRP in patients with peripheral artery disease ⁵⁸ Lowered hs-CRP and depression scores in depressed shift workers ⁵⁹ Lowered CRP and CRP/albumin ratio (beneficial) in colorectal cancer patients ⁶⁰
Quercetin	Lowered CRP when given with vitamin C ⁶¹
Red yeast rice	Lowered hs-CRP by nearly 24% in people with moderately high cholesterol ⁴⁶
Vitamin C	Reduced plasma CRP 24% in active or passive smokers ⁴⁸ Lowered hs-CRP in hemodialysis patients ⁶²
Vitamin D	Higher vitamin D levels correlated with lower CRP in humans with rheumatoid arthritis, an inflammatory condition ⁶³ Reduced serum CRP in pregnant women by 1.4 mg/L while controls rose by 1.5 mg/L (400 IU daily dose) ⁶⁴
Vitamin E (alpha-tocopherol)	Lowered CRP in humans and animals ⁶⁵
Zinc	Lowered hs-CRP from more than 10 to 7.7 mg/L in diabetics with kidney disease ⁶⁶ Lowered hs-CRP in young obese women ⁶⁷
Combinations	Mixture of resveratrol, pterostilbene, quercetin, delta-tocotrienol, and nicotinic acid reduced CRP 29% in healthy seniors ⁶⁸

*All differences statistically significant

Summary

We've known for years that C-reactive protein (CRP) is an important marker of dangerous inflammation in the body, but we've recently discovered that it also actively participates in the inflammatory process.^{1,7}

High CRP levels are found in practically every known inflammatory state. Even if you have no symptoms of disease, elevated CRP signals increased risk for cardiovascular disease, cancer, diabetes, obesity, and more.²

Additionally, there's strong evidence that people with lower CRP levels have fewer inflammation-related diseases.^{21,22,30,34,63}

This knowledge has opened the door to a new way of treating chronic inflammation: by lowering your CRP level back to a safe, normal range. There are drugs such as statins that lower CRP levels, but high-dose statin drugs have proven side effects.⁴⁵ Fortunately, over a dozen nutrients have been found to have a safe, immediate impact on this dangerous cause of chronic inflammation.

Don't delay—get your CRP checked, and get started on a lifestyle, supplement, hormone or drug regimen that works for you. ●

The **CRP** (high-sensitivity) test is included in the **Male and Female Blood Test Panels** described on page 15 of this issue. To order these comprehensive panels at the discounted price of **\$199**, just call **1-800-208-3444**.

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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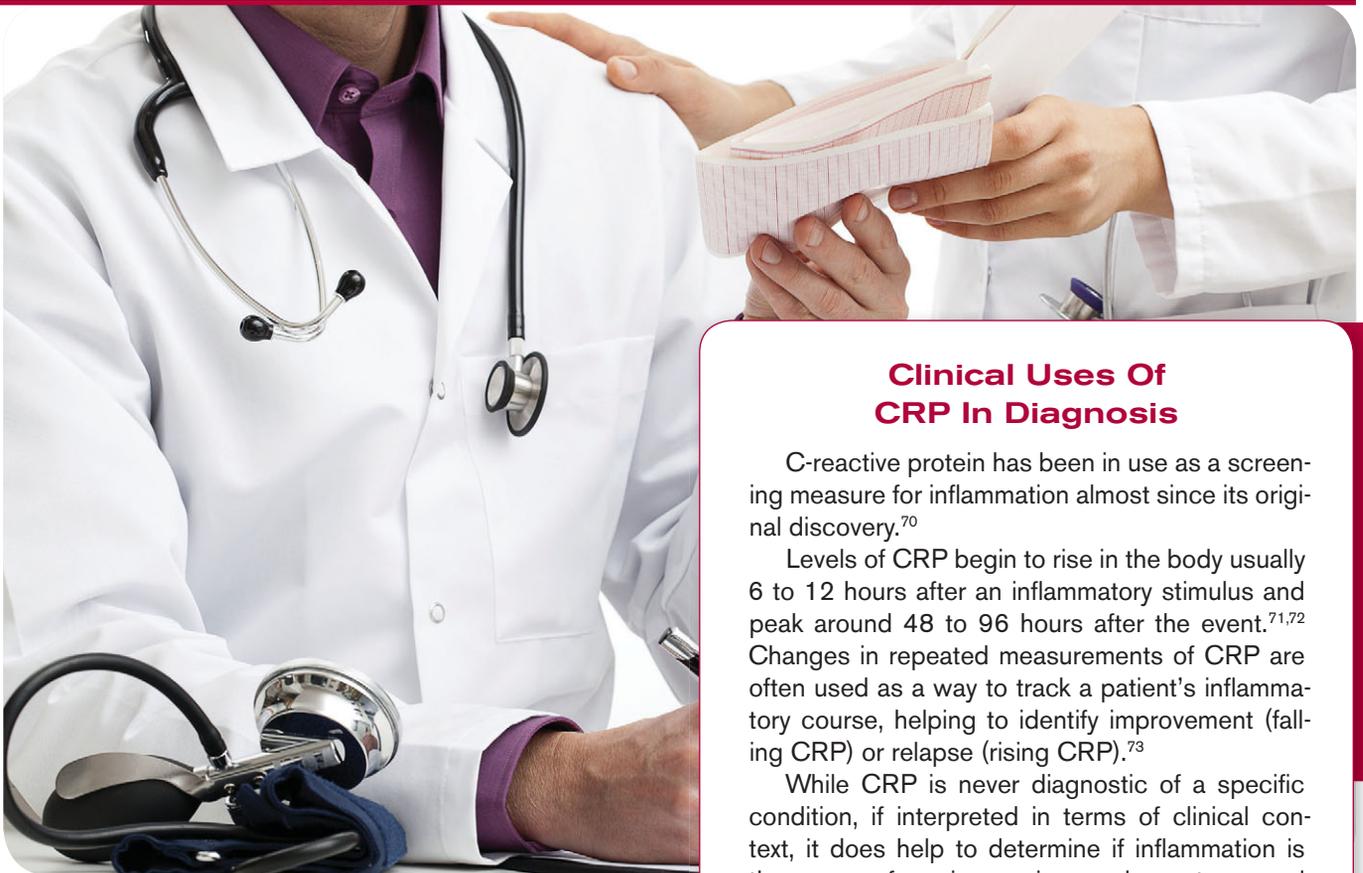
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Measuring CRP In The Laboratory

A laboratory test measurement called “high sensitivity CRP (or “hs-CRP”) is now often used to measure inflammation, especially in cardiovascular disease. This newer test uses the same scale as previous standard CRP measurements, but because of its higher sensitivity, it is better at discriminating even very small increases in CRP measurements at the lowest levels. While Life Extension currently recommends an optimal hs-CRP of less than **1.0 mg/L** for women and less than **.55 mg/L** for men, standard laboratory testing uses the following risk stratification for hs-CRP:

- The “lowest risk” range is less than **1.0 mg/L**.
- “Average risk” is **1.0 to 3.0 mg/L**.
- The “highest risk” category is greater than **3.0 mg/L**.⁶⁹





Clinical Uses Of CRP In Diagnosis

C-reactive protein has been in use as a screening measure for inflammation almost since its original discovery.⁷⁰

Levels of CRP begin to rise in the body usually 6 to 12 hours after an inflammatory stimulus and peak around 48 to 96 hours after the event.^{71,72} Changes in repeated measurements of CRP are often used as a way to track a patient's inflammatory course, helping to identify improvement (falling CRP) or relapse (rising CRP).⁷³

While CRP is never diagnostic of a specific condition, if interpreted in terms of clinical context, it does help to determine if inflammation is the source of worrisome signs and symptoms, and whether symptoms are being caused by infections or by other causes.^{70,74} In infants and toddlers with high fevers, for example, a CRP below **5 mg/dL** was shown to rule out a serious bacterial infection.⁷⁵

In a similar fashion, CRP is frequently used diagnostically to rule out a potentially dangerous diagnosis in adults. For example, adult patients with chest pain were found to be safe to go home from the hospital if they had CRP levels within the normal range.⁷⁶

Elevated CRP levels are also useful as early markers of the seriousness of inflammation in a very wide range of disorders, from urinary tract infections and appendicitis to heart attacks.^{15,70,76} And CRP has been shown to help in discriminating Crohn's disease from non-inflammatory bowel disorders, including intestinal lymphoma.⁷⁷

Another widespread use of CRP is as a means of following a patient's progress after a major diagnosis has already been made. In such patients, the CRP level correlates with the severity of the ongoing disease, and therefore rising levels can be used as an early warning that the disease is rapidly worsening, and that aggressive treatment is necessary.⁷⁸

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Obesity And CRP

Two conditions that contribute to a rise in CRP levels are obesity and diabetes—an effect that may be the reason behind the rise in inflammation seen in those conditions.^{79,80}

Obese individuals experience a double threat from CRP. First, while much of the circulating CRP is made in the liver, human fat tissue also produces substantial amounts of CRP.^{8,79} Second, obese individuals experience a rapid rise in cytokines, particularly the one known as interleukin-6 (IL-6),⁸¹ which may induce CRP production in the liver—potentially causing CRP levels to climb even higher and promoting additional inflammation.⁸²

In this way, CRP may be at least part of the missing link between obesity, diabetes, and cardiovascular disease, in which inflammation plays such a major part.^{79,80,82}



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How Much Curcumin Are You Absorbing?



Curcumin is an active compound derived from the Indian spice **turmeric**. It has been widely acclaimed for its diverse health-promoting effects on nearly every organ system in the body,¹⁻⁶ including its support for the body's natural inflammatory response system.⁷ But most curcumin is neither *absorbed* well nor *retained* well in the blood—posing a challenge to those who wish to maximize its benefits.⁸

Life Extension® took the lead in resolving this issue several years ago by introducing **Super Bio-Curcumin**® containing **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

Now, an exciting **next generation** curcumin formula has become available! The **new Advanced Bio-Curcumin**® with **Ginger & Turmerones** provides additional compounds that **further** boost absorption of curcumin's highly beneficial phytonutrients!^{9,10}

UNRIVALED POTENCY AND ABSORBABILITY

In addition to **BCM-95**®, this **new curcumin** formula contains:

1. Turmerones: After curcumin is extracted from turmeric, what remains is **turmeric oil** rich in compounds called **turmerones**.¹¹ Combining **BCM-95**® with a high content of **turmerones** provides health consumers with more beneficial **turmeric** compounds that further multiply absorption.⁹ Scientists have shown that these potent **turmerones** not only support curcumin absorption, but significantly increase the amount of curcumin **inside** the cell as well!⁹

2. Ginger: Curcumin and **ginger** are close botanical relatives. Research demonstrates that they have overlapping and complementary health benefits,¹³ and scientists are focusing on the therapeutic effects of *combining* these two plants.^{14,15}

Advanced Bio-Curcumin® with **Ginger & Turmerones** provides a supercritical extract of ginger standardized to the greatest concentration of ginger compounds—including beneficial gingerols and shogaols.

3. Phospholipids: This new curcumin formula also contains **phospholipids**, a type of emulsifying molecule known to greatly enhance absorption of poorly soluble active compounds.¹⁰

The powerfully enhanced bioavailability and potency of **Advanced Bio-Curcumin**® with **Ginger & Turmerones** is superior to conventional curcumin supplements. This product represents the most powerful and cost-effective way to supplement with—and receive the full benefits of—this very critical nutrient.

The suggested daily dosage of one 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)	200 mg
[providing 60 mg gingerols]	

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.

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

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



Item # 01808

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

CoQ10, Shilajit, and PQQ

**Triple-Action
Mitochondrial Support!**



Super Ubiquinol CoQ10 With BioPQQ® contains **shilajit** to increase coenzyme Q10 in mitochondria plus **PQQ** to support the generation of new mitochondria in aging cells. This **three-way** mitochondrial support strategy offers the following benefits:

1. SUPER UBIQUINOL CoQ10

CoQ10 is required to convert the fats-sugars you eat into cellular energy. The body's production of CoQ10 markedly declines with advancing age.

Scientific studies show that **absorption** of the **ubiquinol** form of CoQ10 is far greater than the ubiquinone form.¹

2. ENHANCED SUPPORT WITH SHILAJIT

PrimaVie® shilajit has been shown to **double** levels of **CoQ10** in mitochondria!¹¹ Combining CoQ10 and shilajit produced a **56% increase** in energy production in the brain—**40% better** than CoQ10 alone. And in muscle, there was a **144% increase** in energy production—**27% better** than CoQ10 alone.²

3. PQQ PROMOTES YOUTHFUL CELLULAR FUNCTION

- **PQQ** activates genes that promote the formation of *fresh mitochondria*.³
- **Mitochondrial DNA** is situated at the source of free radical production, but has relatively little protection from their damaging effects.⁴ PQQ's powerfully boost mitochondrial **antioxidant** defenses while promoting the generation of new mitochondria.^{3,5}

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 PQQ**.

PQQ is an **essential nutrient**, meaning that your body cannot make it on its own. A wealth of research demonstrates that—alone and especially in combination with CoQ10—its unique nutritional profile supports heart health and brain function.⁶⁻⁸

The suggested dosage of one (1) softgel daily of **Super Ubiquinol CoQ10 With BioPQQ®** provides:

Ubiquinol (as Kaneka QH® Ubiquinol)	100 mg
PrimaVie® Shilajit fulvic acid complex	100 mg
BioPQQ® Pyrroloquinoline quinone disodium salt	10 mg

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.

Kaneka QH Ubiquinol® is a registered trademark of Kaneka Corporation. PrimaVie® is a registered trademark of Natreon, Inc. BioPQQ® is a registered trademark of MGC (Japan).

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**To order Super Ubiquinol
CoQ10 With BioPQQ®, call 1-800-544-4440
or visit www.LifeExtension.com**

BY MEGAN M. MITZELFELT, PHD

LIPOIC ACID

How **LIPOIC ACID** Preserves Critical Mitochondrial Function

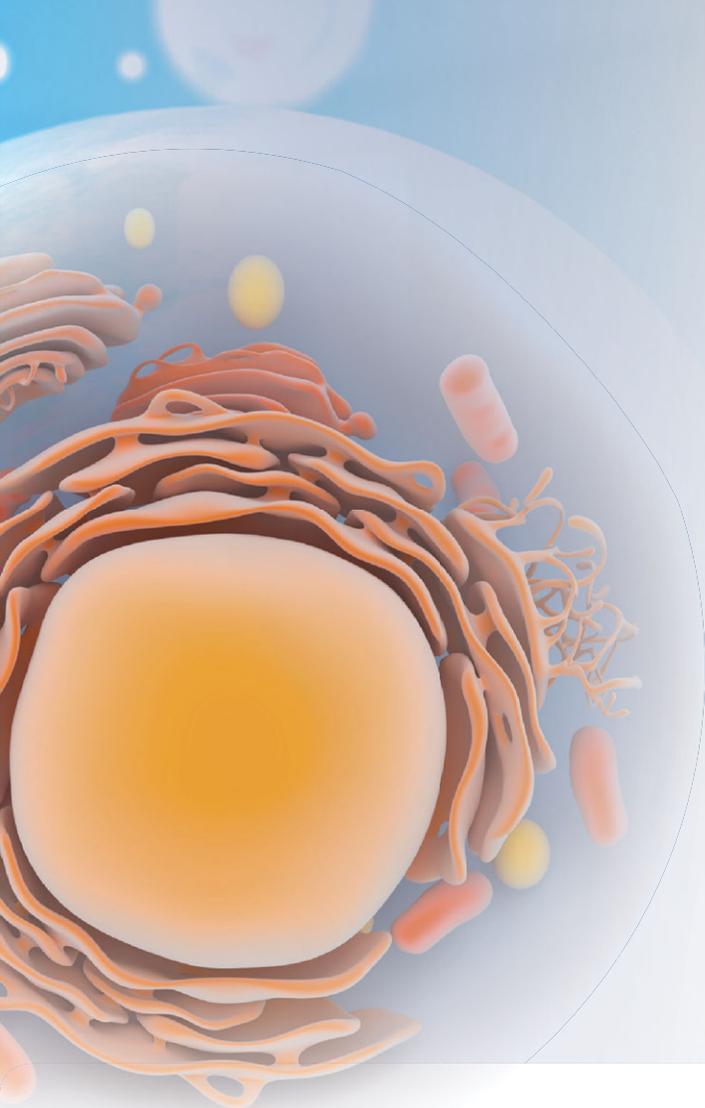
Pharmaceutical companies are focusing massive resources to develop a drug that targets **mitochondrial dysfunction**,¹ one of the major causes of the chronic diseases of aging.² Much of their efforts are aimed at developing a patentable version of a natural compound called **lipoic acid**.^{3,4}

For almost two decades, scientists have known that **lipoic acid** offers an effective solution to mitochondrial dysfunction.⁵ Ongoing clinical trials across the globe show the promise of lipoic acid's benefits on a wide range of diseases—from diabetes to cardiovascular disease to Alzheimer's and countless more.⁶

Fortunately, you don't need to wait for Big Pharma to develop a synthetic, costly version of lipoic acid in order to combat **mitochondrial dysfunction**.

In this report, you will discover how supplemental **lipoic acid** protects vital cellular energy while shielding against and possibly reversing the damaging effects of disorders that include diabetes, obesity, cardiovascular disease, neurodegeneration, and cancer. >





Dramatic Impact On Diabetes-Related Disorders

For many years, scientists have researched how lipoic acid affects insulin sensitivity and the severity of diabetes-related disorders, including heart disease, stroke, glaucoma, neuropathic pain, and kidney disease.⁷

Significant research into lipoic acid has centered on its benefits in *diabetic neuropathy*. Affecting up to around two out of every three people with diabetes, neuropathy is nervous system damage that can produce unbearable pain in the legs and feet. It eventually contributes to the damage of surrounding blood vessels in the lower limbs that results in circulatory impairment.^{8,9} Amputation is sometimes the only way to end the rampant infections and ulcers that accompany reduced blood flow to the lower limbs caused by neuropathy.¹⁰

Despite years of research, a cure for diabetic neuropathy remains elusive.¹¹ However, doctors in Germany have used **lipoic acid** for more than a decade to reduce pain and inflammation in those suffering from diabetic peripheral neuropathy.^{12,13}



Over 15 randomized clinical studies have shown that intravenous administration of **300-600 mg** of lipoic acid a day greatly improves nerve function and relieves pain symptoms in diabetic neuropathy patients.¹⁴ Lipoic acid is well tolerated and effective for prolonged use at **600 mg** per day (equivalent to **300 mg** of R-lipoic acid)—a level that noticeably improves muscle function and stops further impairment in movement.¹⁵

Lipoic acid's benefits in diabetic neuropathy—and in diabetes as a whole—arise from its striking ability to dramatically improve glucose control and restore insulin sensitivity.¹⁶⁻²⁰ In a recent placebo-controlled clinical trial, researchers found that after only 6 months of lipoic acid supplementation, patients with type II diabetes had reduced fasting blood glucose and lowered levels of oxidized lipids.²¹

Lipoic acid increases the abundance of other protective antioxidants while improving mitochondrial function and preventing glycation-induced damage in the kidney and blood vessels of those with diabetes—thus defending against diabetic kidney disease, vision loss, and vascular dysfunction.^{7,22-29}



Take Control Of Obesity

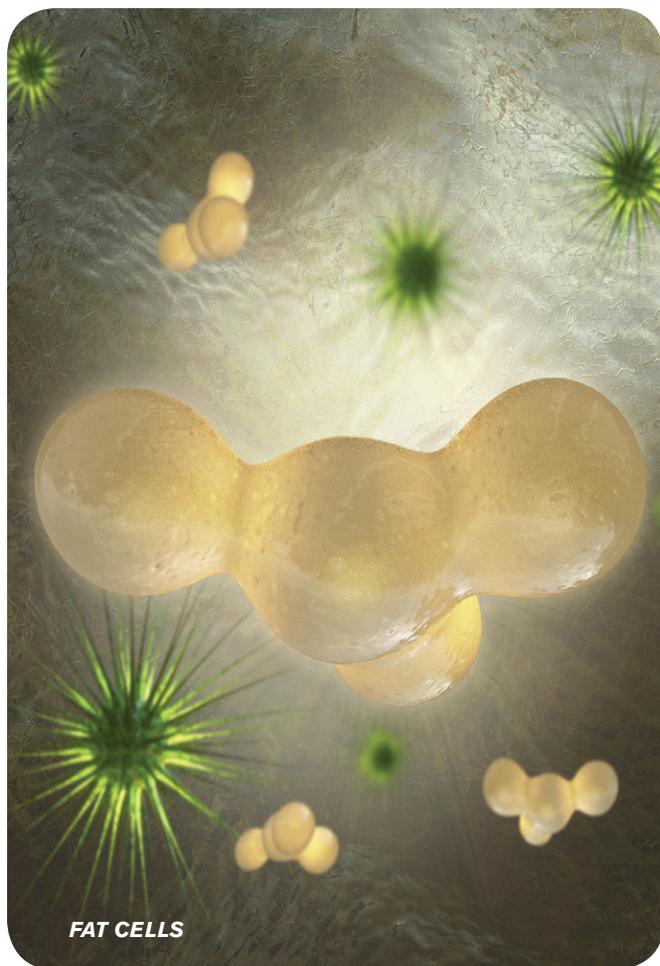
In addition to its anti-diabetic effects, lipoic acid has a known ability to help combat obesity. Even without a change in diet or exercise, large doses of lipoic acid (**800-1,800 mg/day**) have produced moderate weight loss in obese patients.^{30,31} Lipoic acid has been particularly effective in reducing body weight and BMI in patients taking antipsychotics, which are known for causing weight gain and other metabolic disturbances.³²

Lipoic acid displays striking benefits in components of metabolic syndrome, including inducing weight loss, improving insulin resistance, and lowering blood pressure. Metabolic syndrome raises the risk of diabetes and heart disease.^{33,34}

Several other promising scientific studies now show that lipoic acid has a beneficial effect on a number of the factors involved in metabolic syndrome: it reduces triglyceride levels, lowers cholesterol, improves fasting plasma glucose, and causes weight loss in rodent models of obesity.^{22,35-40} Lipoic acid curbs food intake and stimulates production of the insulin-sensitizing, anti-inflammatory hormone, *adiponectin*.^{39,41}

Likewise, lipoic acid supplements have been shown to reduce circulating oxidative stress markers and elevate levels of “good” cholesterol in men with metabolic syndrome who already take glucose control medications.⁴²

Owing to its insulin-sensitizing, lipid-lowering, and appetite-suppressing effects, lipoic acid is almost certainly an indispensable addition to conventional treatments for obesity and metabolic syndrome.



Protect Against The Leading Cause Of Death

Protecting your heart and blood vessels may be the most important thing you can do to save your life.

The leading cause of death in the United States, heart disease, is actually a collection of problems often arising from atherosclerosis, the process in which plaque accumulates in arteries and attaches to the vessel walls. Over time this process restricts arterial blood flow and, if the arteries become completely blocked, leads to a heart attack or stroke.

Because of the vast numbers of people affected by this disease, pharmaceutical companies spend considerable time and resources devoted to developing blockbuster drugs that attack key problems in heart disease, such as high blood pressure, high cholesterol, high triglycerides, and blood clots. However, these drugs are not primarily focused on two key causes of heart disease—namely oxidative stress and inflammation.^{43,44}

Fortunately, lipoic acid wields powerful antioxidant and anti-inflammatory effects that directly attack these causes.

In experimental models of atherosclerosis, lipoic acid—through reductions in blood cholesterol, inflammatory markers, oxidative stress, and immune activation—shrank atherosclerotic plaques and improved the blood-flowing capacity of the aorta—the body's chief artery.⁴⁵⁻⁴⁸ In a remarkable study, researchers discovered that,⁴⁹ within only 12 weeks, lipoic acid reduced plaque size in the aorta by about **70%**.⁴⁶ Another group of researchers found that lipoic acid decreased the total number of atherosclerotic plaques developing in animals fed a high cholesterol diet.⁴⁷

During a stroke, lipoic acid not only reduces brain cell death but, to the surprise of scientists, also restores blood flow to damaged brain regions by creating new blood vessels necessary for repair of brain function and the formation of new brain cells.⁵⁰⁻⁵⁵

Prevent Age-Related Neurodegeneration

Although the exact mechanism behind neurodegenerative brain disorders still remains elusive, more and more researchers consider mitochondrial dysfunction and oxidative stress to play a pivotal role in diseases such as Alzheimer's and Parkinson's.⁵⁶ Alzheimer's disease alone is estimated to affect over 5 million Americans.⁵⁷

A recent clinical trial indicated that lipoic acid may delay the progression of Alzheimer's. Over a 12-month period, a combination of omega-3 fatty

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What You Need To Know

Lipoic Acid Fights Mitochondrial Dysfunction

- Research has exposed mitochondrial dysfunction and oxidative stress as two of the primary culprits of age-related disease.
- Lipoic acid counteracts aging by improving mitochondrial function and decreasing oxidative stress.
- Lipoic acid may reverse and protect against the destructive consequences of diabetes, obesity, heart disease, neurodegeneration, and cancer.
- It has even been found to reduce signs of aging.
- Pharmaceutical companies are attempting to modify lipoic acid to render it patentable.
- Fortunately, the natural form of lipoic acid is available without a prescription and for a reasonable cost.

How It Works

Over the past few years, there has been an explosion of research into the widespread health benefits of **lipoic acid**.

First, lipoic acid is an enzymatic “cofactor” essential for mitochondrial function.^{92,93} Lipoic acid maintains biochemical reactions within mitochondria, the cellular powerhouses that are important for producing cellular energy. These enzymes are vital for transforming foods in the form of sugars, proteins, and fats into usable cellular energy called adenosine triphosphate or ATP.

In addition to cellular energy production, lipoic acid and its reduced form, dihydrolipoic acid, are potent antioxidants that both directly and indirectly scavenge reactive oxygen species, free radicals, and peroxides that cause widespread oxidative stress and cellular damage.⁹⁴⁻⁹⁷

Finally, lipoic acid blocks inflammatory signals and boosts levels of the pro-oxidant destroying molecule, *heme oxygenase 1* (HO-1).^{49,98-103}

All of these multidimensional aspects of lipoic acid are what give it the ability to reverse and protect against the destructive consequences of diseases as diverse as diabetes, obesity, heart disease, neurodegeneration, and cancer.



Cancer Fighter

Lipoic acid has beneficial effects against many types of cancer, including those of the colon, lung, breast, brain, and even leukemia—and for good reason.⁷²⁻⁸² Lipoic acid has been shown to inhibit tumor growth, induce tumor cell apoptosis,^{72,73} and impede metastasis.⁸³

Over the past few years, many researchers examining the role of lipoic acid in experimental cancer models have called for clinical trials to investigate the effectiveness of lipoic acid to treat cancer in humans.^{84,85} This call was answered by a pharmaceutical company that created a patentable, modified version of lipoic acid that has been used in clinical trials involving different cancer types.^{79,86}

In addition to its cancer-fighting properties, lipoic acid displays promise in stopping the negative side effects of radiation and chemotherapy. More specifically, lipoic acid may protect healthy tissues against damage and cell death during cancer-targeted radiation treatment.⁸⁷⁻⁹⁰ It has the potential to prevent the development of chemotherapy-induced peripheral neuropathy.⁹¹

acids and lipoic acid diminished the rate of cognitive decline and impairment of daily activities compared to those taking only omega-3 fatty acids or nothing at all.⁵⁸

And in another exciting study on animal models with Alzheimer’s disease, lipoic acid was found to improve deficits in brain function, memory, and spatial attention (such as turning your head towards the door when someone knocks, for example). It does this by inhibiting oxidative stress, activating other antioxidant and anti-inflammatory pathways, and increasing brain glucose uptake.⁵⁹⁻⁶⁴ Taking a medical food cocktail containing lipoic acid over a long time even appears to reduce **amyloid-beta** accumulation in the brain, a trademark of Alzheimer’s disease.⁶⁵

The remarkable neuroprotective effects of lipoic acid extend also to Parkinson’s disease in which it defends movement-controlling brain cells against neurotoxins and oxidative damage.⁶⁶⁻⁷¹

Summary

Scientific research has exposed mitochondrial dysfunction and oxidative stress as two of the primary culprits of age-related disease.¹⁰⁶

Recent data highlight the role of lipoic acid to counteract aging by improving mitochondrial function and decreasing oxidative stress. Owing to these properties, lipoic acid can protect against the destructive consequences of diabetes, obesity, heart disease, neurodegeneration, and cancer.

Lipoic acid is so universally effective that pharmaceutical companies have modified lipoic acid to render it patentable and profitable. Fortunately, the natural form of lipoic acid is available without a prescription and for reasonable expense.⁷

Given its extensive health benefits, lipoic acid is an indispensable asset in one's arsenal to combat aging. ●

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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Use The "Right" Form Of Lipoic Acid

Lipoic acid comes in two "mirror image" forms labeled "R" and "S." The R form is the main form that is produced and used by life processes.⁷ Inexpensive chemical manufacturing produces equal quantities of R and S lipoic acid, often labeled "R/S Lipoic Acid" or simply "alpha lipoic acid" (ALA).

Newer precision techniques allow production of a pure **R-lipoic acid**, which provides a much more concentrated potency.

A dose of pure R-lipoic acid provides twice the active ingredient as a typical R/S-alpha lipoic acid supplement, simply because the whole dose consists of the active "R" molecule.⁷ Look for the "R" label to assure you are getting the most potent form of this valuable nutrient.^{104,105}



Reduce The Signs Of Aging

Interesting research studies show that lipoic acid may reduce visible signs of aging. In a recent report, volunteers using a facial application of a gel containing lipoic acid reduced fine lines, particularly around the eyes and upper lip, while enhancing skin texture and color.¹⁰⁷

Lipoic acid works to reduce signs of skin aging by increasing production of collagen.¹⁰⁸ Age- and sun-related reductions in skin collagen, one of the molecules responsible for skin's elasticity, are thought to be a key part of fine line and wrinkle formation.¹⁰⁹

Lipoic acid in combination with other antioxidants has been shown to improve skin hydration and protect against UV-induced skin cell damage.¹¹⁰

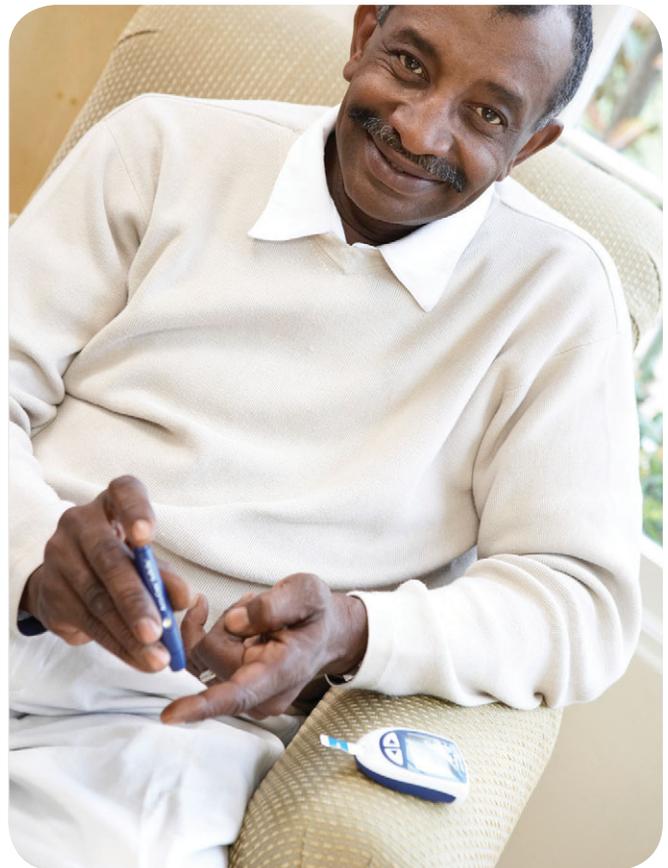
By reversing age- and sun-related skin changes, lipoic acid regenerates skin's youthfulness and suppleness.



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Item # 01596

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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.

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KRILL HEALTHY JOINT FORMULA

TARGETED SUPPORT
FOR OPTIMAL JOINT
FUNCTION AND MOBILITY



Maintaining healthy, flexible joints is essential to quality of life. Joint stiffness and discomfort can stand in the way of performing even simple everyday tasks.

Most people do not obtain critical nutrients shown to support youthful joint function and mobility.

To meet this urgent need, **Life Extension**[®] introduced **Krill Healthy Joint Formula**, a patent-pending blend of deep-sea **whole krill oil** sourced in Antarctica, combined with **hyaluronic acid** and **astaxanthin**.

In a recent clinical trial involving over 100 maturing individuals, a **55% reduction** in joint discomfort was observed in less than three months, with **63%** of participants maintaining ease of motion.¹

THREE SYNERGISTIC COMPOUNDS FOR SUPERIOR BENEFIT

The data reveals that the fatty acids found in krill oil are particularly effective for joint health.² These unique fatty acids have been shown to *specifically target joint tissue*.^{2,3}

Hyaluronic acid occurs naturally in the joints,⁴ where it acts to lubricate and cushion against repeated physical impacts.⁵ Because it forms a major component of cartilage and soft tissue,⁴ it is widely used to promote joint health.⁴⁻⁸

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

Krill oil is a natural source of the antioxidant carotenoid **astaxanthin**. Astaxanthin works in multiple ways, including suppression of free radical activity and enhanced mitochondrial function.⁹ It also maintains krill oil's molecular stability.

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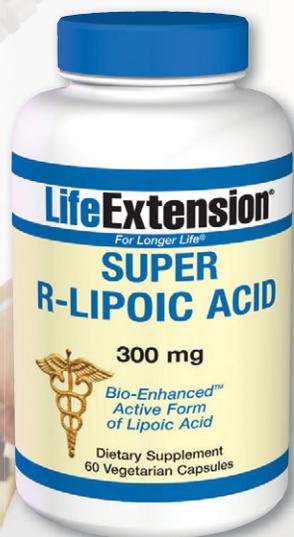
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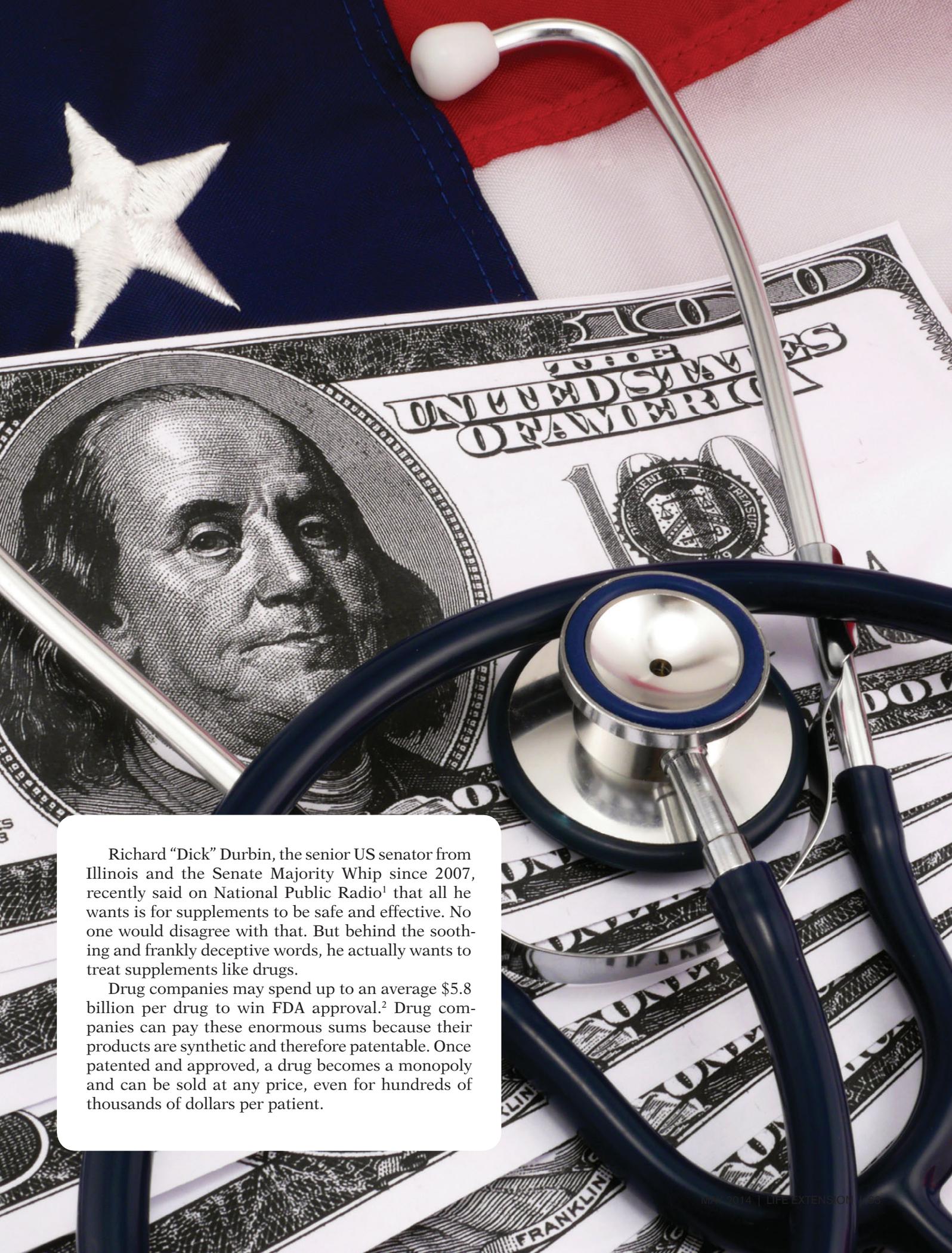
Protecting Your Supplements Against Government Censure

If he had his way, one senator would remove most of your nutritional supplements from the market. But Life Extension® and the Alliance for Natural Health USA (ANH-USA) are working hard to stop him.

ANH-USA is part of an international organization dedicated to promoting sustainable freedom of choice in health-care through good science and good law. Since 1992, they have worked to shift the medical paradigm from an exclusive focus on surgery, drugs, and other conventional techniques to an integrative approach incorporating functional foods, a healthy diet, dietary supplements, and lifestyle changes. To ensure consumers' rights, ANH-USA lobbies Congress and state legislatures, acts as a government watchdog, files comments on proposed rulemakings, and educates the public, the press, and other decision-makers. >

PROTECT YOUR SUPPLEMENTS



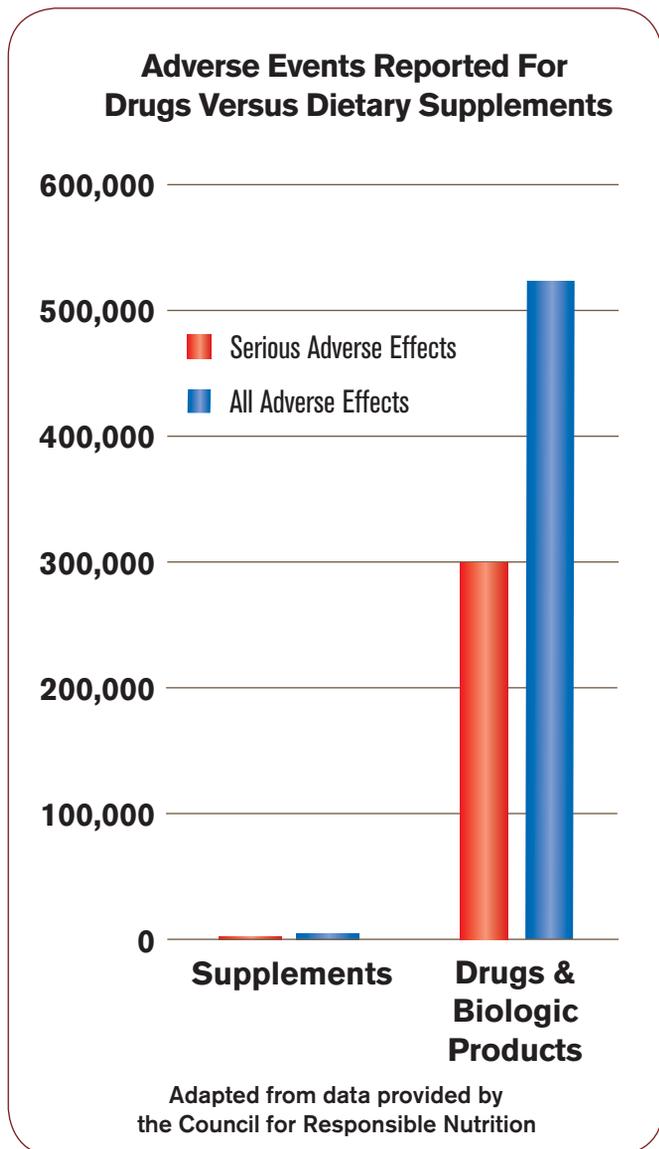


Richard “Dick” Durbin, the senior US senator from Illinois and the Senate Majority Whip since 2007, recently said on National Public Radio¹ that all he wants is for supplements to be safe and effective. No one would disagree with that. But behind the soothing and frankly deceptive words, he actually wants to treat supplements like drugs.

Drug companies may spend up to an average \$5.8 billion per drug to win FDA approval.² Drug companies can pay these enormous sums because their products are synthetic and therefore patentable. Once patented and approved, a drug becomes a monopoly and can be sold at any price, even for hundreds of thousands of dollars per patient.

As readers of *Life Extension*® magazine are well aware, food and supplements are typically safer than drugs and may even be more effective in keeping you healthy. In part this is because they are natural and therefore not patentable. The bottom line is clear to Durbin: require that billions be spent on each supplement for approval, and presto, no more supplements. The best thing about this stealthy approach is that not even the average legislator, much less the public, would understand that supplements could be at risk for extinction as we now know them.

Each year there are over 487 times *more* adverse event reports for FDA-approved prescription drugs than there are for supplements, and 446 times *more* serious events for drugs than supplements.³ Yet, Durbin thinks that *supplements* are endangering the public? The following graph makes the difference obvious:



A Deceptive Bill

In 2011, the senator introduced a bill he called the **Dietary Supplement Labeling Act**. He said his bill was designed to stop “mislabeling products and making health claims that have no scientific basis” and “marketing supplements with impure or incorrectly identified ingredients.”⁴ He knows—or should know—that all those things are already against the law!

Since the purpose of this bill was clearly not the one stated, what *was* its purpose? It seems that this was an attempt to move us one step closer to a full FDA approval system for supplements. That, of course, would make supplements insanely expensive, like drugs, if you could get them at all. If supplements are not yanked from the market—as they could be if the FDA doesn’t “approve” them—or turned into drugs, the high prices would kill demand and drive supplement companies out of business. The drug industry would be waiting, ready to pick up the pieces and make their current monopoly position even tighter.

Durbin’s bill required that the FDA, together with the government’s Institute of Medicine (IOM), compile a list of dietary ingredients (read: supplements) that could *possibly* lead to adverse events or are otherwise deemed risky in some way. Dietary supplement manufacturers would have to put mandatory warnings on labels for any ingredient on this list.

What the FDA and the IOM have in common is that both agencies know very little about supplements but are nevertheless deeply biased against them.

In the FDA’s case, this may be because of all the fees that the agency gets from drug companies.⁵ Or because many of the agency’s outside panelists are paid by drug companies.⁶ Yet these are the people whom Senator Durbin wants to give complete arbitrary power over supplements!

As for the Institute of Medicine (IOM), look at their recent report on vitamin D.⁷ They threw out most of the scientific research.⁷ The IOM is hardly the authority to determine which supplement is safe and which isn’t!

Creating lists of “bad” ingredients or “bad” doses based on completely arbitrary or non-existent standards is a slippery slope. It could be used as a hammer by the FDA to go after supplement companies. It could easily lead to European-style standards being applied here in the US. In Europe, if a beta carotene capsule contains more beta carotene than is in around one-third of a large carrot, it is banned.⁸

Current law already requires that all dietary supplement products show ingredient lists. Health claims already have to be pre-approved by the FDA according to the Nutrition Labeling and Education Act.⁹ Supplements must be manufactured under



Current Good Manufacturing Practices to ensure that the ingredients are safe and at the levels they claim them to be.¹⁰ Accurate disclosure of the contents in the dietary supplement package is required under the Fair Packaging and Labeling Act. And almost all supplement manufacturers have a list of all their products and ingredients available to the public on their websites. In other words, *everything the bill mandates is already being accomplished under laws now on the books!*

Durbin Meets His Match

That's where Alliance for Natural Health (ANH-USA) enters the picture. The moment the Durbin bill was introduced, ANH-USA sent Action Alerts to its members and to the hundreds of thousands of readers of the *Pulse of Natural Health*, its weekly newsletter. It also contacted important allies such as Life Extension® to be sure that an even larger number of messages were sent.

While consumers contacted their senators calling for the defeat of this bill, ANH-USA kept up the pressure through lobbying on Capitol Hill. In the end, the pressure was so great that the bill became a hot potato, and no one would touch it. The bill died in committee.¹¹

That same year, Durbin decided to try a different approach to get the same results. He proposed an amendment to an appropriations (budget) bill,¹² which is a sneaky way of getting controversial laws passed without too much attention. The amendment wanted the FDA to follow the recommendations of a report containing some of the same provisions that were in Durbin's anti-supplement bill! Happily, because of the pressure ANH-USA and its allies were able to bring to bear, Durbin's sneaky amendment didn't make it into the appropriations bill.

One month later, however, Sen. Durbin and his frequent collaborator in the House, Rep. Henry Waxman (D-CA) were back at it. They asked the Government Accountability Office (GAO) to review adverse event report data¹³—but only for supplements. If consumer safety was really Sen. Durbin's motivation, why didn't he and Rep. Waxman also ask the GAO to review adverse event reporting data for vaccines and drugs, which have far more reported adverse events?

Fast forward to May of 2012. The **FDA Safety and Innovation Act** was considered "must-pass" legislation, and without notice, Senators Durbin and Blumenthal offered a new anti-supplement amendment¹⁴ to the bill. Once again, ANH-USA issued an emergency Action Alert, and readers sprang into action, sending more than 100,000 messages in less than twenty-four hours. Congress listened, and Sen. Durbin's anti-supplement amendment was soundly defeated by a vote of 77 to 20.¹⁴

In March of 2013, the GAO report on adverse event reports¹⁵ requested by Sen. Durbin and Rep. Waxman was finally issued. It left both legislators with egg on their face. The report they hoped would say supplements are dangerous only proved how incredibly safe supplements are—and says, "...the greatest challenge for identifying potential safety concerns from AERs [adverse event reports] is the small number of AERs [adverse event reports] that FDA receives related to dietary supplements."¹⁵

You'd think that would be the end of it, but you'd be wrong. Shockingly, in August of 2013, Sen. Durbin reintroduced his misleading anti-supplement bill¹⁶—the one he couldn't garner enough support for in 2011. Its language is identical to that of his previous bill, and would deal the same deadly blow to nutritional supplements. ANH-USA and its allies are battling on Capitol Hill once again.

Two Powerhouses, Working Together

ANH-USA celebrated its twentieth anniversary last year. It has over 250,000 members nationwide—and it is only because of them that the organization is able to be so successful.

Thanks to its members and allies like Life Extension, ANH-USA is changing the politics of medicine. Most critically, ANH-USA has played an important role in passing significant legislation that directly benefits the natural health approach while blocking legislation that threatens it.

ANH has also filed lawsuits to accomplish the same aims. To date, they have filed nine precedent-setting lawsuits against the FDA, which have established qualified health claims for saw palmetto, omega-3 fatty acids, fiber, vitamin E, vitamin B, and selenium. One of their early suits was the landmark case of *Pearson v. Shalala*—and because they won, there is now widespread public knowledge about the importance of consuming enough folate (a B vitamin) during pregnancy to prevent neural tube defects.¹⁷ Prior to this legal victory, supplement manufacturers were not permitted to let consumers know about this important nutrient relationship, and many consumers were in the dark.

ANH-USA Victories

Life Extension is one of ANH-USA's most important allies. With the support of grassroots activists and organizations like Life Extension, ANH-USA has had a number of major victories for consumers.

They:

- Incorporated an explicit statement into HIPAA that the practice of alternative medicine is not fraud—a critical protection for alternative healthcare practitioners.
- Led the effort to establish the National Center for Complementary and Alternative Medicine in 1998. It's part of NIH, undertakes research, does training, and disseminates data to the public and professionals.
- Worked with Reps. Chaffetz and Polis to introduce the Free Speech about Science Act, which will permit food and supplement companies to cite peer-reviewed scientific research in support of a product's health benefits. It is hard to believe, but all too true, that free speech protections do not extend to food or supplement companies to make truthful statements about scientific research.
- Organized an emergency response to a major threat to dietary supplements in Congress: Sen. McCain's Dietary Supplement Safety Act. ANH-USA members sent more than 200,000 messages to Congress opposing the bill, and the organization took out a full-page ad in *Roll Call*, the Capitol Hill newspaper, which highlighted misleading remarks from Sen. McCain on the Senate floor. In just three weeks, Sen. McCain took the almost unheard-of step of withdrawing support for his own bill, which subsequently died without a vote.¹⁸



- Defeated a sneak amendment to the Wall Street Finance Reform bill from Rep. Waxman that would have greatly expanded the Federal Trade Commission's power to restrict supplements.
- Sent messages to Congress opposing Sen. Leahy's Food Safety Accountability Act, which would have established ten-year prison terms for violating FDA regulations. This resulted in Leahy's office reaching out to ANH-USA to develop compromised language requiring proof of actual harm for prosecution.
- Filed petitions to ban the use of the toxic chemical BPA in cash register receipts and children's dental devices.
- Petitioned the USDA and FDA to study GMOs, and supported state bills to demand GMO labeling. These petitions are a necessary prelude to lawsuits.
- Organized a coalition of dietitians and nutritionists to oppose the American Dietetic Association's ties to junk food companies and anti-competitive legislation, and launched ReallyEatRight.org to bring to light the ADA's attempts to establish a monopoly on nutritional advice through state and national legislation.
- Openly opposed draft guidance on New Dietary Ingredients (NDI) that threatened to remove 29,000 dietary supplements from the market—and became the only consumer organization invited to the FDA's bargaining table.
- Helped amend the Drug Quality and Security Act of 2013 which would have given the FDA power to regulate large compounding facilities. ANH-USA worked with Congress—across party lines—to protect important ingredients such as compounded bioidentical estradiol and time-released medications, and make sure non-standardized dosages remain available to be tailored to the individual.

ANH-USA monitors legislation and regulatory activity on the state, federal, and international levels daily. This is in addition to court action, since the court system has a critical role in protecting integrative medicine and a consumer's right to choose.

The organization's executive and legal director is Gretchen DuBeau. A lifelong environmentalist and devotee to closely related natural health and healing, Gretchen is an attorney who practiced environmental law and policy for five years before joining



Gretchen DuBeau

ANH to work on natural and sustainable health issues. She is joined by Liz Ardagna, membership director; Nandini Gopinadh, legislative and policy analyst; and Beth McCabe, director of public affairs. ANH's International and European office is led by Dr. Robert Verkerk, a widely acclaimed expert in agricultural, environmental, and health sustainability.

Summary

In the year ahead, ANH-USA will continue to fight for consumers' rights to free access to healthy food and nutritional supplements—as well as the right to information about them. ANH-USA currently keeps close tabs on Sen. Durbin's Dietary Supplement Labeling Act of 2013,¹⁶ the zombie bill that refuses to stay dead. If this bill passes, supplements would either be pulled from the market, or would see their prices rise so high that no one could afford them. Countless supplement companies would be driven out of business.

This need not happen. ANH-USA is asking *Life Extension* magazine® readers to take action on it! By going to ANH-USA.org/LEF, you'll be taken to a page with more information and a form that will let you effortlessly send a message to your senators, asking them to oppose Sen. Durbin's bill.

And while you're at it, you can also subscribe to ANH-USA's weekly e-newsletter, *The Pulse of Natural*

Health, on the front page of the organization's website at ANH-USA.org. There you can keep abreast of the latest politics affecting your ability to make health choices.

One last thing: an incredibly generous donor has offered to match all donations to ANH-USA from *Life Extension* readers—up to \$100,000. What that means is that if Life Extension readers collectively donate \$50,000 to ANH-USA, this donor will contribute another \$50,000—up to \$100,000.

Just go to ANH-USA.org/LEF and you'll be able to support ANH-USA's important work in protecting your supplements painlessly—and powerfully. Donations of any amount are greatly appreciated, no matter how small. ●

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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ANH-USA Receives \$125,000 Donation

In response to the relentless attacks against dietary supplements being waged by certain members of Congress, a health conscious citizen donated **\$125,000** to ANH-USA. This is the largest single donation ANH-USA has ever received.

This same concerned citizen has pledged a matching grant of one dollar for each dollar contributed to ANH-USA by *Life Extension* supporters, up to **\$100,000**.

While these donations pale compared to the hundreds of millions of dollars mainstream medical interests lavish on Congress and the FDA, the success ANH-USA has had in combatting pharmaceutical industry-backed attempts to take away your supplements shows that certain powers are still retained by the people.

In this case, the majority of aging Americans are using dietary supplements and their voices are being heard in Congress, through the legislative efforts of Life Extension Buyers Club and ANH-USA.

If you donate, let's say, \$35 to ANH-USA.org/LEF, another \$35 will be contributed (matched) by this generous citizen concerned about the eroding freedoms citizens have in deciding what goes into their own bodies.

To make a tax deductible donation to ANH-LEF, please visit ANH-USA.org/LEF today.

VASCULAR BENEFITS OF A Mediterranean Diet

VALIDATED IN HUGE NEW STUDY

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.¹ 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 group.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 LONG AGO BENEFITED

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

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

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 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 and Olive Fruit Extract** retails for \$32. If a member buys four bottles, the price is reduced to **\$21** per bottle. If **10 bottles** are purchased, the cost is **\$18.68** per bottle. (Item #01482)

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

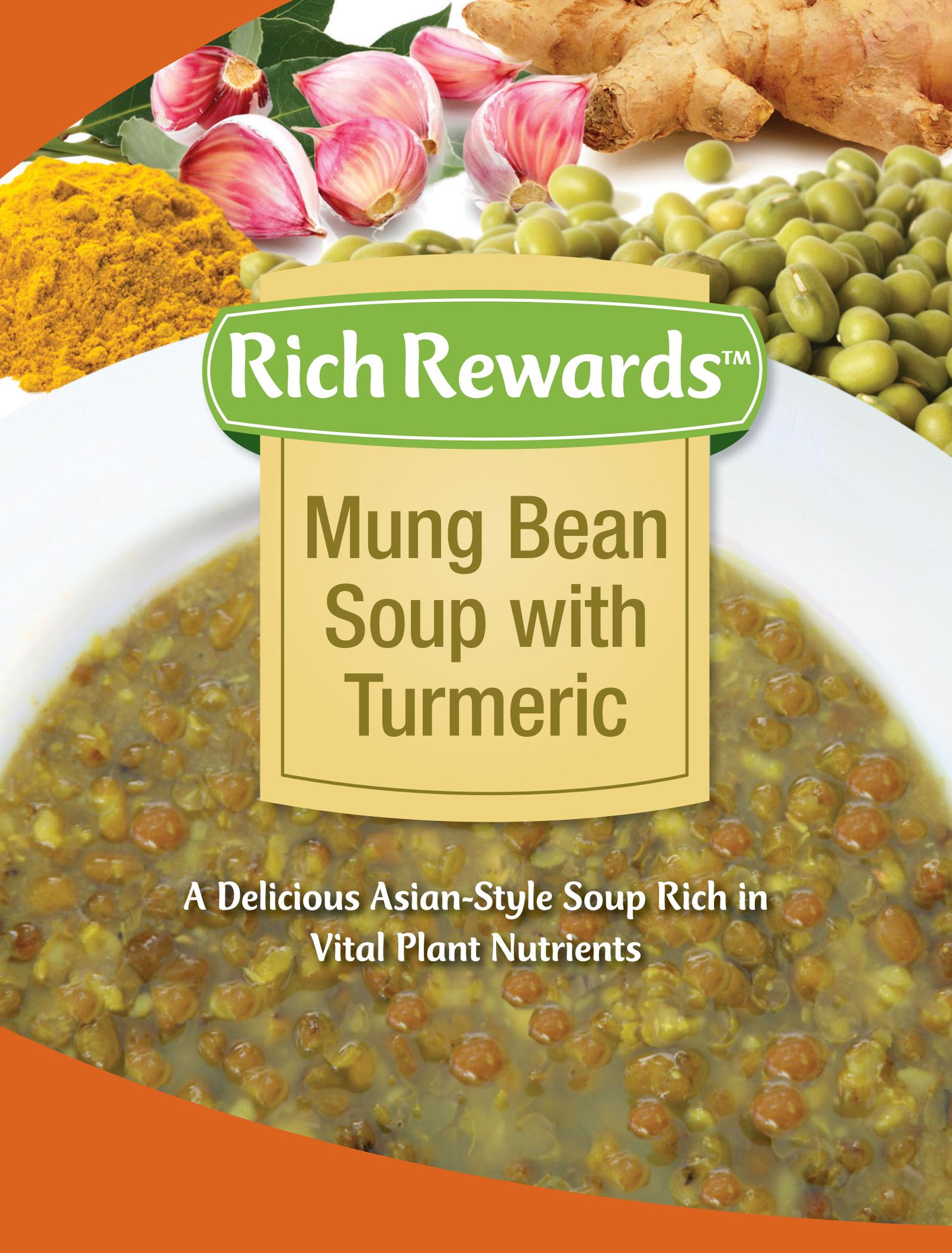
EPA (eicosapentaenoic acid)	1,400 mg
DHA (docosahexaenoic acid)	1,000 mg
Olive (fruit and leaf) Extract [providing 39 mg polyphenols, 10.4 mg hydroxytyrosol/ tyrosol, 3 mg verbascoside/oleuropein]	600 mg
Sesame Seed Lignan Extract	20 mg



Item #01482

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

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.



Rich Rewards™

Mung Bean Soup with Turmeric

**A Delicious Asian-Style Soup Rich in
Vital Plant Nutrients**

If you're looking for a different food to try, you'll be delighted with our **Mung Bean Soup with Turmeric**. The **mung beans** have a chewy texture and unique taste that will make you feel you're eating something new for the first time.

The mung bean, a legume used since ancient times, is considered in Traditional Chinese Medicine to be a "cooling food" and is a favorite among many Asian cultures.*

This new healthy food choice soup contains green mung beans, turmeric, ginger, coriander, olive oil, and lemon juice. It's a refreshing, non-tomato based soup suitable for vegans.

No High-Glycemic Carbs

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

Rich Rewards™ soups contain only healthy ingredients without the cheap starches.

Rich Taste—Low Calories

Each serving of **Rich Rewards™ Mung Bean Soup with Turmeric** contains only **130 calories**. It is an excellent source of fiber and provides 6 grams of protein. You can consume the entire contents or use a smaller portion of the soup as part of a meal for you (or several people).

The entire container provides about **3.5 servings** of mung beans, turmeric, and other ingredients—with none of the *glucose-spiking* fillers found in commercial soups.

Rich Rewards™ Mung Bean Soup with Turmeric is packaged in a re-closable bottle free of **BPA**. While the **FDA** says the BPA lining in most cans is safe, we at Life Extension have always used BPA-free containers for our soups.

The retail price for a **3.5 serving bottle** of **Rich Rewards™ Mung Bean Soup with Turmeric** is \$13. The member price is **\$9.75**.

* *PLoS One*. 2011; 6(6): e21071.

To order your fresh supply of **Rich Rewards™ Mung Bean Soup with Turmeric**, call 1-800-544-4440 or visit www.lef.org/soup



Item # 01810

Mung Bean Soup with Turmeric

Nutrition Facts

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

Amount Per Serving
Calories 130 Calories from Fat 35

		% Daily Value *
Total Fat	4g	6%
Saturated Fat	0.5g	3%
Trans Fat	0g	
Cholesterol	0mg	0%
Sodium	135mg	6%
Total Carbohydrate	17g	6%
Dietary Fiber	7g	28%
Sugars	2g	
Protein	6g	

Vitamin A 2% • Vitamin C 6%
Calcium 8% • Iron 20%

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

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

Ingredients: Water, Green Mung Beans, Lemon Juice, Olive Oil, Ginger, Cumin, Coriander, Turmeric, Citric Acid, Salt, Garlic, Bay Leaf.

Souper tasty. Souper Satisfying.

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

This unique Asian inspired soup showcases the ancient and nutritious mung bean and is complemented by delicate spices, lemon juice and olive oil.

One Smart Bowl of Soup

Only 130 calories per serving

Excellent source of fiber

No added starches or sugars

Low in saturated fat and sodium

Cholesterol free

0g trans fat

BY MICHAEL DOWNEY

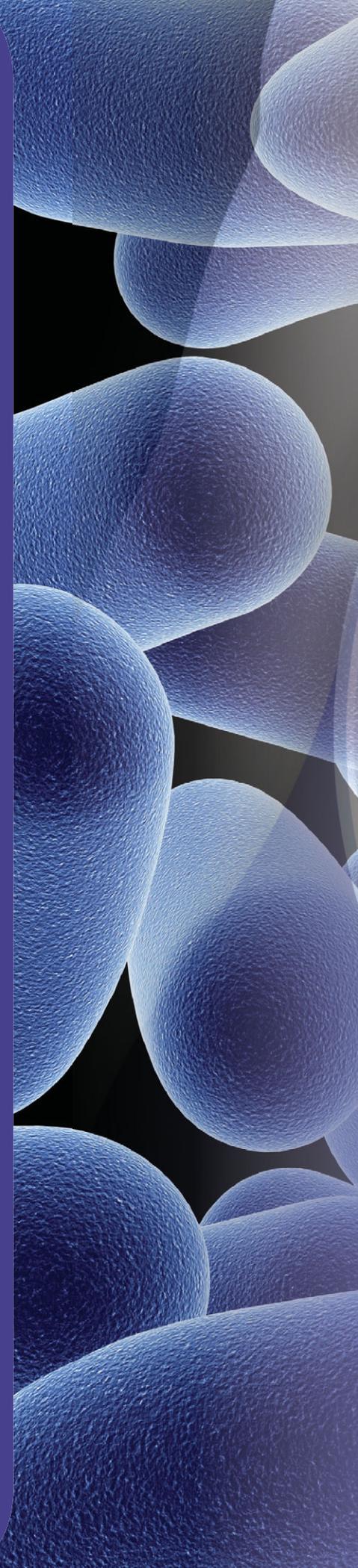
PROBIOTICS Provide Vital Protection Against CHRONIC DISEASE

Probiotics, the beneficial bacteria commonly found in yogurt cultures, are popularly thought of as an aid to good digestion. But scientists are discovering that probiotics and the resulting healthy balance of gut bacteria confer a broad spectrum of previously unrecognized health benefits.¹

As we age, take antibiotics, or eat an unhealthy diet, the delicate balance between beneficial and bad gut bacteria becomes disrupted.²⁻⁴ Not having the proper balance of good-to-bad bacteria can wreak havoc throughout the body as well.⁵⁻⁹

For instance, scientists have discovered that an *imbalance* of healthy gut bacteria plays an important role in the development of chronic conditions such as autoimmune disorders, metabolic syndrome, diabetes, obesity, chronic fatigue syndrome, and non-alcoholic fatty liver disease (NAFLD).⁵⁻¹¹

So while supplementing with good bacteria has been seen as providing defense primarily against **intestinal** conditions—such as inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), and colon cancer—scientists now believe that they help prevent many of the diseases of aging as well.^{6,7,9,11-13}





Fortunately, evidence demonstrates that supplementing with the right mix of probiotic bacteria such as ***Lactobacillus*** and ***Bifidobacterium*** species can powerfully ward off many of the factors leading to chronic disease.¹² Probiotics can restore your body's natural, ***intestine-based*** protection against a host of ***non-intestinal*** diseases and shield you from the diseases of aging.⁵⁻¹¹ >

Total Body Benefits Of Balanced Gut Bacteria

It has long been known that certain types of beneficial gut bacteria:

- Help break down dietary residues (such as indigestible fibers) and synthesize vitamins;
- Limit pathogenic colonization within the gut, protecting our bodies from **infections**; and
- Play a crucial role in the **immune** system, an estimated **70-80%** of which is located in and around the gut.^{14,15}

But compelling new evidence indicates that good bacteria also play a beneficial role outside the digestive tract, delivering broad-spectrum protection throughout the body.⁵⁻¹¹

For example, two of the most studied and proven groups of bacteria—**Lactobacillus** and **Bifidobacterium**—have been found to protect against diseases not normally associated with intestinal origins.¹⁶⁻¹⁸

Scientific studies have found associations between different species of **Lactobacillus** (*Lactobacillus acidophilus*, *Lactobacillus paracasei*, and *Lactobacillus rhamnosus*) and increased HDL cholesterol, balanced immune response, and reduced markers of inflammation, respectively.¹⁶

Similarly, associations have been found between different **Bifidobacterium** species (*Bifidobacterium lactis*, *Bifidobacterium bifidum*, and *Bifidobacterium longum*) and improved blood sugar control, decreased liver inflammation, and reduced DNA damage that could trigger malignant cell development, respectively.¹⁶⁻¹⁸

How Intestinal Imbalance Affects The Entire Body

So why is it that an imbalance in gut bacteria affects areas of the body outside of the intestines?

The answer lies in the fact that the intestinal tract contains one of the highest concentrations of chemical detection and signaling molecules—molecules that affect cells throughout your *entire* body.¹⁵

Your intestinal bacteria produce proteins that have a powerful influence on these chemical detectors—and as with any influence, this one can be positive or negative.¹⁹ Over time, an imbalance in the ratio of good-to-bad bacteria activates many of these detectors in *negative* ways that can trigger the development of a host of diseases in **many** body areas—not just those associated with the gut.⁵⁻¹¹

Fortunately, using probiotic supplements to restore a healthy balance to your gut bacteria can **reverse** these disruptions to intestine-based signaling mechanisms. This, in turn, reverses the negative influence that triggers the development of chronic disease.²⁰



The Powerful Role Of Probiotics In Cancer

As an example, take just one deadly disease: **cancer**. Scientists have demonstrated that probiotic organisms switch on protective signaling mechanisms that:

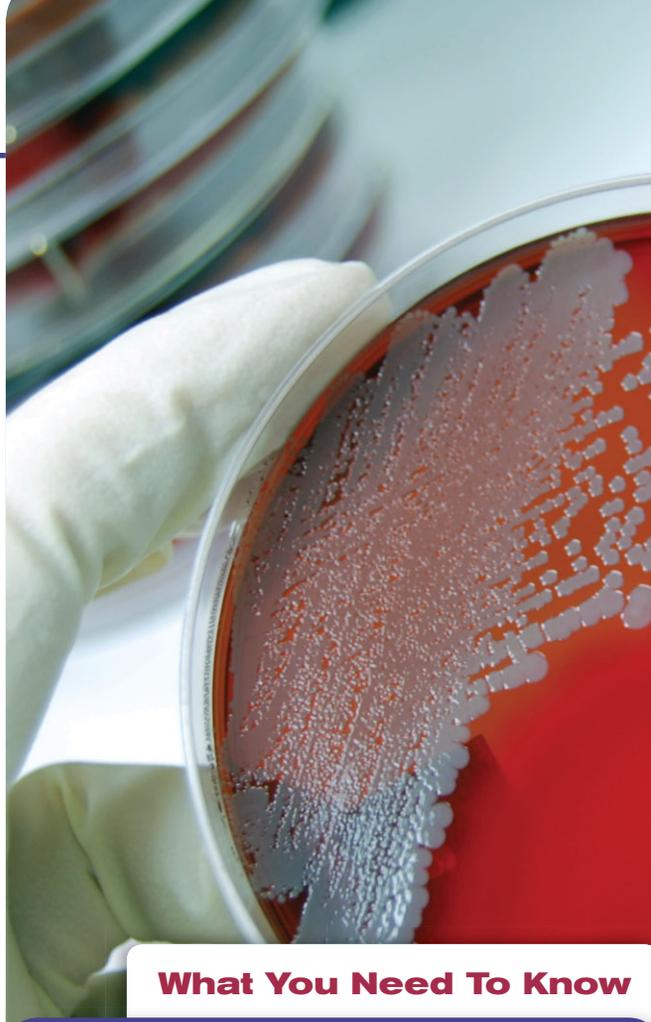
- *Suppress* bacteria that convert pro-carcinogen molecules into carcinogens.^{21,22}
- *Bind* to potential carcinogens, promoting their excretion.²¹
- *Decrease* enzymes implicated in the development of carcinogens.²¹
- *Boost* populations of immune cells that play a role in tumor inhibition.^{22,23}
- *Up-regulate* immune cytokines to battle the early stage of cancer or other threats.²²
- *Suppress* the inflammatory response as the cancer or infection threat fades.^{22,24}

Probiotics Protect Against Numerous Diseases

Experimental models and randomized, controlled human intervention studies have confirmed that taking a probiotic supplement to restore the balance of gut bacteria also *restores natural protection against multiple diseases*.²⁵ Take a look:

Intestinal health. A popular use of probiotics is to improve intestinal health by increasing levels of beneficial bacteria.^{26,27} *Lactobacillus* and *Bifidobacteria*, two of the most studied types of beneficial bacteria, have been shown to support intestinal function and improve both diarrhea and constipation.²⁸⁻³⁰ Probiotic supplements have helped improve both the quality of life and symptoms of patients with functional bowel disorders such as irritable bowel syndrome (IBS) and ulcerative colitis, as well as those of generally healthy people.^{29,31-33}

Diabetes and the metabolic syndrome. *Lactobacillus* and *Bifidobacteria* probiotics demonstrated improvement in insulin resistance and significant reductions in blood sugar concentrations in animal studies and human diabetes clinical trials.^{17,34-36} In a 6-week study of patients with type II diabetes, fasting glucose and hemoglobin A1c (a measure of long-term blood sugar control) were significantly improved through consumption of a probiotic yogurt containing *Lactobacillus acidophilus* and *Bifidobacterium lactis*; total antioxidant status also increased.¹⁷



What You Need To Know

Probiotics And Chronic Disease

- Evidence shows that prolonged imbalance in intestinal bacteria can do more than induce intestinal diseases—it can trigger lethal diseases throughout the body!
- Properly balanced gut bacteria produce biologically active proteins that cross into the blood. In this way, “good bacteria” inhibit pathways of numerous chronic diseases—including obesity, diabetes, the metabolic syndrome, cardiovascular disease, cancer, and respiratory infections.
- Today’s diet, lifestyle, medical practices, and other factors tend to disrupt gut bacterial balance.
- Evidence shows that supplementing with key species restores the proper balance of beneficial bacteria—in turn restoring your body’s natural, *intestine-based* protection against a host of *non-intestinal* diseases!

Obesity. An association between antibiotic overuse and obesity has been demonstrated.³⁷ Studies of probiotic supplementation in animal models and humans showed a reduction in body weight and fat accumulation.³⁸⁻⁴⁰ Studies show that probiotic supplements given to mothers prenatally (meaning from at least one month before birth and continuing up to 6 months after birth), subsequently reduced excessive weight gain in the mothers—and their children!^{41,42}

Cardiovascular disease. In studies conducted on both animals and humans, the use of probiotics decreased total and LDL cholesterol, and increased HDL cholesterol.^{35,43-45} In addition, recent studies suggest that supplements of beneficial bacteria can reduce cholesterol absorption and the inflammation of fat stores.^{46,47} These changes contribute to a significant decrease in the formation of inflammatory, cholesterol-laden plaques observed in early atherosclerosis.^{46,48,49}

Cancer. The risk of cancer, particularly of the colon, can be reduced through the use of probiotics.⁵⁰ Scientists have shown that supplementation with *Lactobacillus acidophilus* and *Bifidobacterium longum* significantly decreases the DNA damage that can trigger malignant cell development—confirmed by a reduction in DNA strand-breaking compounds in human feces.¹⁸ Replenishing beneficial bacteria with supplements has been found to boost natural antioxidant and detoxification enzymes that prevent the activation of potential dietary carcinogens.^{50,51}



Six Factors Behind Gut Imbalance

The lethal implications for the link between gut imbalance and increased disease risks are clear. But what factors are behind this dangerous imbalance? The answer is that *accompanying* the rise in a number of diseases in Western societies is the increased influence of a host of factors that continually **disrupt** our natural gut bacteria balance.

- 1. Antibiotics.** One cause of an imbalance between good-to-bad bacteria is the unnecessary use of **antibiotics**.⁶⁵ Antibiotic use, even at low sub-therapeutic doses, can disrupt the number and relative proportions of gut bacteria.³⁷
- 2. Infant formula.** Common use of **infant formula** instead of breast milk has interfered with mankind's long history of transferring bacterial diversity from mother to baby.^{65,66} Similarly, **Caesarian delivery** prevents babies from inheriting diverse bacteria from their mothers.⁶⁵
- 3. Excessive hygiene.** An exploding obsession with **hygiene** has drastically reduced our ability to naturally acquire certain key bacteria from our environment.⁶⁵
- 4. Western Diet.** The **Western diet**—high in animal proteins and fats, sugars, and refined carbohydrates—causes a rise in undesirable bacteria, not counterbalanced by those that hold them at ideal levels. An example would be a rise in *Firmicutes* bacteria associated with obesity.^{37,67} In animals

whose digestive tracts were colonized with human bacterial lines, switching from a low-fat, plant polysaccharide-rich diet to a high-fat/high-sugar Western diet adversely shifted the balance of the gut bacteria within a single day.⁶⁷ Additionally, this dietary shift resulted in changes to metabolic pathways within the gut bacterial ecosystem and altered bacterial gene expression.⁶⁷ Much of the food in the Western diet is made up of refined carbohydrates, which are absorbed in the upper part of the gastrointestinal tract.⁶⁸ What eventually reaches the large intestine is of limited value to microbiota in this area because it contains only small amounts of the minerals, vitamins, and other nutrients necessary to maintain them.⁶⁸ As a result, the numbers and diversity of beneficial intestinal bacteria of modern humans is greatly reduced, compared to the diets of Paleolithic man.⁶⁸

- 5. Modern Medical Treatments.** A number of **modern medical treatments** are known to severely impair the proper balance of gut bacteria.⁶⁸ These include artificial ventilation, hygienic measures, use of skin-penetrating devices, tubes and catheters, frequent pharmaceutical use, and more.⁶⁸
- 6. Age.** Recent findings suggest that **aging** disrupts the bacterial makeup of the gut. This imbalance may contribute to the age-related increase in inflammation known as “inflammaging.”⁶⁹⁻⁷¹

Also, patients with colon cancer and those with pre-cancerous polyps had sharply reduced proliferation of abnormal colon cells and a significant decline in harmful *Clostridium* bacteria when supplemented with *synbiotics* (probiotic bacteria combined with *prebiotics*, which are substances that feed or promote the accompanying bacteria).⁵²

Respiratory infections. Probiotics can significantly suppress respiratory infections such as the common cold and the flu—especially if you begin supplementing prior to cold and flu season.⁵³⁻⁵⁶ Studies show that people who supplemented for 3-6 months with different strains of *Bifidobacteria* and *Lactobacillus* reduced the duration of symptoms by an average of one to two or even more days, with a similarly impressive reduction in symptom severity.^{53,54} Two studies in children who were given both *Lactobacillus* and *Bifidobacterium* **twice daily** for 3 to 6 months found a significant decrease in school absenteeism and in the use of antibiotics, as well as reduced symptoms and duration.^{54,55}

Colonization of the nose by potentially pathogenic bacteria, a common complication of colds, was shown to be reduced by **19%** with regular probiotic use while the control group showed no change.⁵⁶ This effect could save the lives of those who are older, or who have a compromised immune system due to chronic disease such as diabetes, or who have recently undergone a major operation—all of whom have a higher risk of being overwhelmed by bacterial infection, particularly those infections affecting the lungs.⁵⁷⁻⁵⁹

The Importance Of Multiple Species

Although good bacteria can be found in small amounts in food, changing the entire ratio of gut bacteria requires substantial and consistent dosing with supplements providing potent levels of beneficial bacteria to enable their survival.^{60,61}

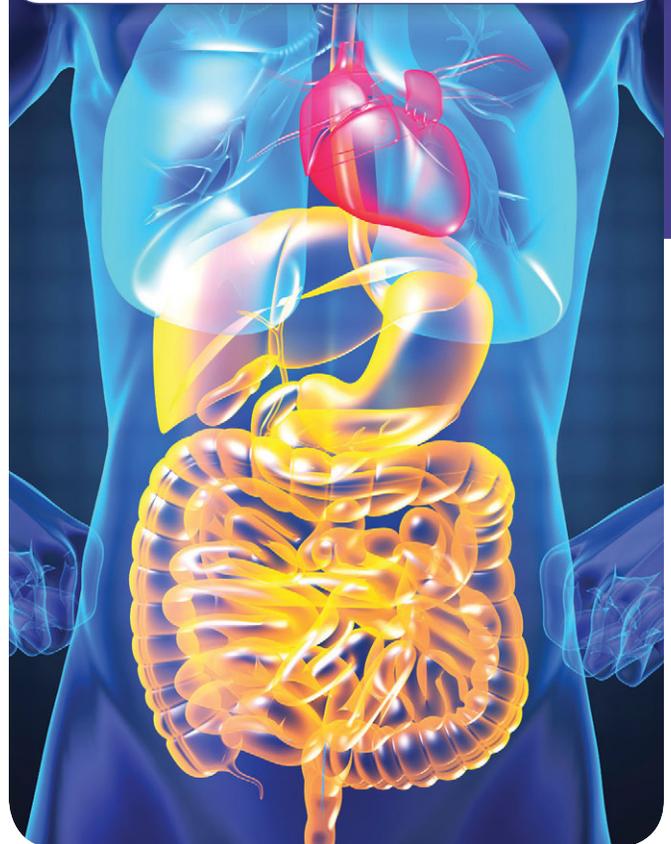
Two types of probiotic bacteria commonly used include *Lactobacillus* and *Bifidobacterium*. There are many specific types of bacteria within each of these two broad groups, and health benefits associated with one type may be unique to that specific species and not hold true for others.⁶² This means that using multiple different species delivers better odds of reversing the negative effects of *dysbacteriosis*, a condition where there is an imbalance between good and bad bacteria.^{63,64}

The Dangers Of Gut Imbalance

Illness and severe infections are closely associated with significantly reduced and malfunctioning gut bacteria.⁶⁸ Compared with healthy individuals, critically ill patients often have **10,000 times** fewer *Bifidobacterium*, *Lactobacillus*, and other bacteria. They also have **100 times more** pathogenic (disease-causing) bacteria, such as *Staphylococcus*.⁷² Also, organ failure and ICU (intensive care unit) mortality is more common in patients with substantially reduced microbiota populations and diversity combined with the presence of large numbers of enterococci.⁷³

Imbalance and disruption of intestinal flora has been found to impair the body's ability to maintain the integrity of its mucosal membranes, the protective layers that inhibit pathogens from penetrating the organs and body cavities. As a result, mucosal membranes can no longer prevent the leakage of toxins.⁶⁸

However, researchers have shown that an imbalance in gut bacteria can be inhibited and even *reversed* through supplementation with probiotics.^{74,75}



Six Popular Probiotics And Their Specific Disease Benefits

Probiotic supplements have been studied for their effects on an array of disease pathways throughout the body. Although research tying specific probiotic strains and species to particular diseases is still in its infancy, scientists have identified a few disease-treatment benefits for six of the most studied probiotic species:¹⁶

Lactobacillus acidophilus

- Reduced diarrhea and improved bowel function in cases of radiation-induced enteritis.
- Increased HDL (good) cholesterol.
- Improved markers for metabolic syndrome, inflammation, and heart disease.
- Improved allergy-driven immune response.
- Improved markers for ulcerative colitis and irritable bowel disease.
- Increased control of blood sugar.^{17,34}
- Decreased the DNA damage that can trigger malignant cell development.¹⁸

Lactobacillus rhamnosus

- Reduced diarrhea and improved bowel comfort in cases of radiation-induced enteritis.
- Improved markers for metabolic syndrome, inflammation, and heart disease.
- Reduced allergic response to milk in milk-sensitive patients.
- Improved markers for ulcerative colitis, and irritable bowel disease, including Crohn's disease.

Lactobacillus paracasei

- Enhanced therapeutic management of Minimal Hepatic Encephalopathy (MHE).
- Improved markers for metabolic syndrome, inflammation, and heart disease in elderly patients.
- Improved markers for ulcerative colitis and irritable bowel disease.

Bifidobacterium lactis

- Improved immune function in healthy, elderly individuals.
- Greater weight gain and less gut inflammation in preterm infants.
- Improved immune response and respiratory symptoms from birch pollen allergies in children.
- Increased control of blood sugar.^{17,34}

Bifidobacterium bifidum

- Improved markers for liver inflammation and damage in alcohol-related liver disease.
- Improved inflammation profiles in ulcerative colitis and irritable bowel disease.

Bifidobacterium longum

- Reduced diarrhea and improved bowel function in cases of radiation-induced enteritis.
- Increased HDL (good) cholesterol.
- Improved markers for ulcerative colitis and irritable bowel disease, including Crohn's disease.
- Decreased the DNA damage that can trigger malignant cell development.¹⁸

Summary

Scientists have shown that prolonged imbalance in intestinal bacteria can do more than induce intestinal or digestive problems—it can trigger numerous chronic diseases *outside* the intestine!⁵⁻¹¹

The link between unbalanced intestinal bacteria and several of today's most prevalent diseases is clear. However, today's diet, lifestyle, medical practices, and other factors tend to disrupt gut bacterial balance.²⁻⁴

Fortunately, supplementing with key bacterial strains and species counters these destructive influences—restoring your body's natural, *intestine-based* protection against a host of *non-intestinal* diseases!²⁵ ●



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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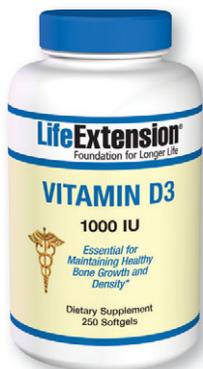
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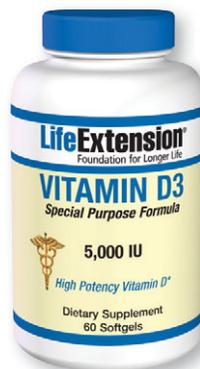


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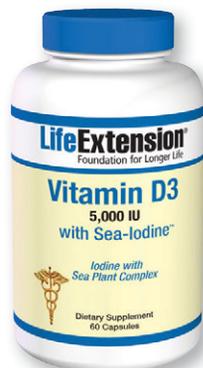


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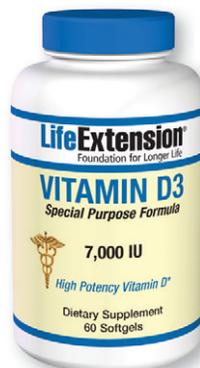
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Retail: \$14

Four-bottle Member Price: \$9.38 ea.

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

Due to the source of kelp, this product may contain fish and shellfish. **Item # 01758**

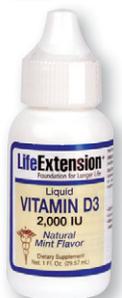


VITAMIN D₃ 7,000 IU 60 softgels

Retail: \$14

Four-bottle Member Price: \$9.45 ea.

Some individuals (such as those weighing more than 180 pounds) may require higher potencies of vitamin D. When combined with **1,000-3,000 IU** obtained from multi-nutrient formulas, this **7,000 IU vitamin D₃** softgel should enable these individuals to attain **25-hydroxyvitamin D** blood levels above the desired range of **50 ng/mL**. **Item # 01718**



VITAMIN D₃ LIQUID 2,000 IU (Natural mint flavor) 1 ounce

Retail: \$28

Four-bottle Member Price: \$18.75 ea.

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

NATURAL APPETITE CONTROL

WITHOUT STIMULANTS

Excess **calorie consumption** has become epidemic in the United States. The invariable result is **more overweight** Americans and a litany of associated health problems.

A crucial component of a longevity or weight loss program is **reducing** portion size and the quantity of ingested calories.

A natural supplement has been developed to help *tame hunger* and *promote satiety* so more people can adhere to lower-calorie diets.

The Body's Appetite Hormones

Hunger and satiety are controlled by hormones.¹

Advanced Natural Appetite Suppress contains a **Italian Borlotto variety bean** extract that helps support normal levels of the gut hormones that control appetite and satiety.^{2,3} The result is **reduced** desire for food and less food intake.^{3,4}

The stomach hormone **ghrelin** produces feelings of hunger, while the hormones **cholecystokinin (CCK)**, **glucagon-like peptide-1 (GLP1)**, and **peptide YY (PYY)** produce feelings of food satisfaction and fullness.^{1,5}

Advanced Natural Appetite Suppress provides a potent dose of a novel Italian Borlotto variety bean extract. Studies show this proprietary extract helps the body modulate levels of **ghrelin** and the satiety hormones **CCK**, **GLP1**, and **PYY**.^{2,3,6,7} This helps reduce food intake and supports normal, healthy levels of hunger and fullness.^{4,8}

This extract **also** modulates **alpha-amylase**, the enzyme that converts dietary starch into simple sugars.³ This can affect the rate at which free sugars are absorbed from the digestive tract into the blood stream.^{3,4,8}

Remarkable Clinical Research

In a recent human trial in which all overweight participants avoided making intentional dietary or exercise changes, those taking this **Italian Borlotto variety bean** extract lost **9 pounds** on average in 12 weeks—**versus only one-third of a pound** in those taking placebo!⁸

The supplemented subjects also lost **2.5 inches** in waist size—a **4.2 times greater reduction** than the placebo subjects.⁸

The supplemented participants had **reduced** appetite levels and **increased** satiety, and no significant side effects were reported.⁸

Advanced Natural Appetite Suppress contains the identical *Italian Borlotto variety bean extract* used in this study.

The suggested twice daily dosage of one (1) vegetarian capsule of **Advanced Natural Appetite Suppress** provides:

European (Italian Borlotto variety) white kidney bean extract 200 mg

A bottle of 60 vegetarian capsules of the **new Advanced Natural Appetite Suppress** retails for \$38. If a member buys four bottles, the price is reduced to **\$25.50** per bottle.

Beanblock® is a registered trademark of Indena S.p.A

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8. Irvine3 Vascular Laboratories & Microcirculation. 2013. Unpublished study.



Item #01807

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

To order Advanced Natural Appetite Suppress, 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.

Probiotic Liquid Vegetarian Capsules

The Most Advanced Probiotic Available

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 **not** having the proper balance of good to bad bacteria can wreak havoc throughout the body.⁷⁻¹¹

FlorAssist™ offers a **new** 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!

Dual Encapsulation Probiotic



Choosing the Right Probiotic for You

While many supplements provide just **one** type of bacteria, taking a probiotic with **multiple** 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 (Colony Forming Units)† 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

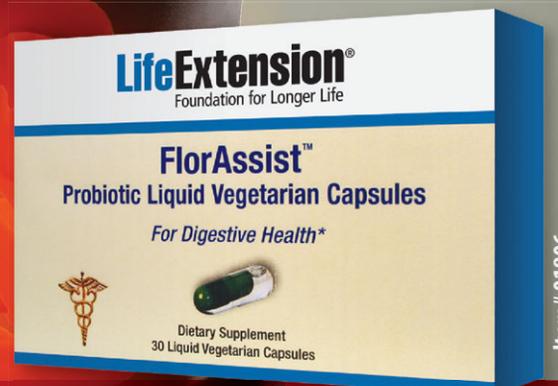
These **potent strains** of probiotic bacteria adhere to the soft lining of the intestinal tract, help maintain a healthy surface, and support the digestive system.

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

†Colony Forming Units.

References

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3. *Br J Nutr.* 2013 May 28;109(10):1866-72.
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Item# 01806

To order FlorAssist™ Probiotic Liquid Vegetarian Capsules, 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.

Magnesium and Brain Health

Profound loss of connections between nerve cells in the brain is one of the major hallmarks associated with **neurodegeneration** and memory impairment. Previous research has shown that **magnesium** is a critical factor in controlling **synaptic density**.¹

To combat this, an innovative form of magnesium called **Neuro-Mag™** has been developed. The *magnesium-L-threonate* contained in **Neuro-Mag™** has been shown to specifically target multiple areas of the aging brain. In fact, pre-clinical models show that the *magnesium-L-threonate* contained in **Neuro-Mag™** boosted levels of magnesium in spinal fluid by **15%** versus no increase from conventional magnesium.²

New Cognitive Benefits Revealed!

Although research into the role of magnesium in the brain dates back 70 years, scientists continue to uncover its comprehensive benefits for cognitive function.^{1,3} Studies using *magnesium-L-threonate* show this unique form of magnesium maintains the quantity of synaptic connections between brain cells and inhibits the dysregulation of signaling pathways.¹

Capsules or Powder...Value Priced

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

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.

A bottle containing 90 vegetarian capsules of **Neuro-Mag™ Magnesium-L-Threonate** or a jar containing **30** scoops of **Neuro-Mag™ Magnesium-L-Threonate with Calcium and Vitamin D3 Powder** retails for \$40. If a member buys 4 units, the price is reduced to **\$27** per unit.

References

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.

To order **Neuro-Mag™ Magnesium L-Threonate Capsules** or Powder call 1-800-544-4440 or visit www.LifeExtension.com

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Item # 01602



Item # 01603



The Supplement Pyramid

This is the Step-By-Step Guidebook You've Been Waiting For.

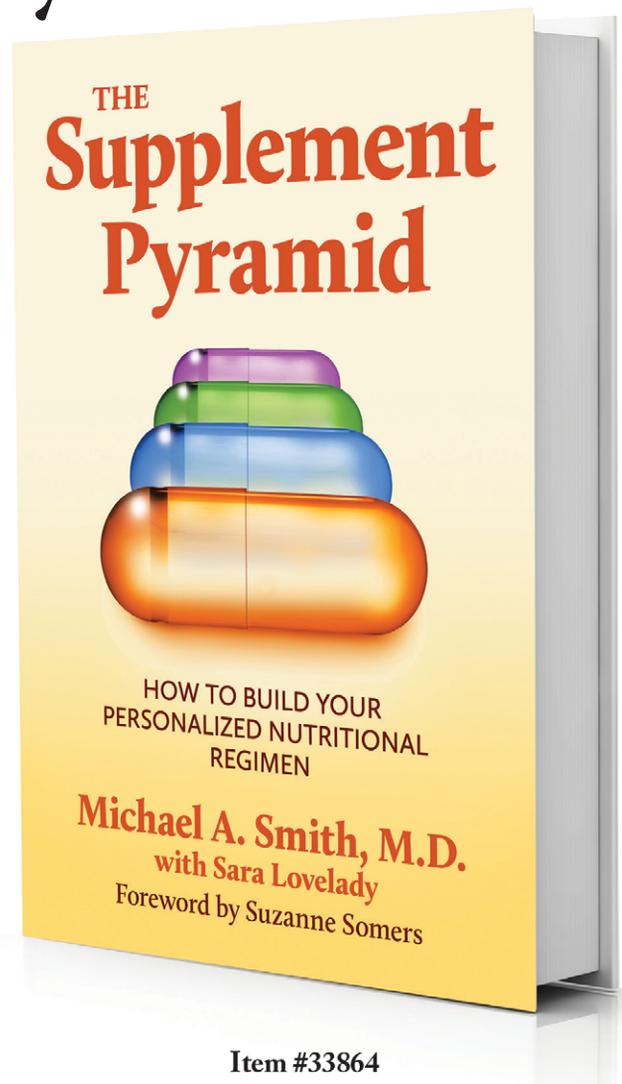
You'll find no other book on the market quite like it. In *The Supplement Pyramid*, Dr. Michael A. Smith, Senior Health Scientist for Life Extension®, provides you with an easy-to-understand, illustrated approach to tailoring a personalized nutritional regimen that's just right for *your* needs.

Dr. Mike explains **why even the healthiest diets fall short in terms of supplying the optimal amount of nutrients** we need not just to survive, but also to thrive. And with such a staggering amount of nutritional supplement choices available, it's hard to know where to start. *The Supplement Pyramid* provides you with the road map ... so you can achieve the best possible results.

Learn How to Build Your Own Personalized Nutritional Regimen.

The key to the "Pyramid" is its three-tiered plan. The base features the *essential* nutrients everyone needs to support basic life processes at the cellular level. The next tier offers a series of detailed medical quizzes designed to help you identify your *individual* needs with a focus on disease prevention. And the top of the Pyramid is all about those nutritional supplements that can help you *extend your life* and make your later years healthier.

Written in easy-to-understand language, *The Supplement Pyramid* is an informative and enjoyable "how-to" book that answers all your questions about building a personalized nutritional regimen. Order it for your library today.



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EUROPEAN *BIOGERONTOLOGY* CONFERENCE IN BEER-SHEVA, ISRAEL

As you may know, I was hired by the Life Extension Foundation® to attend worldwide scientific conferences and report findings from these events to you in this magazine. I typically attend about two conferences a month. An advantage of attending these conferences is that new information is often presented long before it gets published in a journal.

Some conferences I attend yield little in the way of apparent advances in our understandings of aging. This year's **European Congress on Biogerontology** held in Israel, was exceptional in the volume of meaningful research findings that were disseminated. What follows is my succinct report. >





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Why Naked Mole Rats Don't Get Cancer

Vera Gorbunova, PhD (Professor, University of Rochester, Rochester, New York) reported on the investigations she and her husband (Andrei Seluanov, PhD) have made into why naked mole rats live so long and don't get cancer. Her husband has the second largest naked mole rat colony in the world. Naked mole rats are about the same size as mice, but live about ten times longer.



Cancer is the cause of death in nearly all laboratory mice that die naturally, but cancer has never been observed in a naked mole rat. Normal cells are limited in the number of times they can divide, but cancer cells often have the enzyme telomerase, which allows them to divide an unlimited number of times. The abundance of telomerase in mouse cells is believed to be one of the reasons mice so often die of cancer. But Dr. Seluanov and Dr. Gorbunova have found that naked mole rats have about as much telomerase as mice.¹ So the naked mole rats must be preventing cancer by some other means.

The two scientists found that naked mole rat cells stop growing when the cells start to crowd each other.² Cancer is the uncontrolled growth of cells, which can quickly lead to a crowding of cells - something that the biology of naked mole rats prevents. Dr. Gorbunova reported that she and her husband later discovered that naked mole rats secrete a form of hyaluronic acid that is five times larger than what human or mouse cells secrete. When the hyaluronic acid was removed from the naked mole rat cells, they became as vulnerable to cancer as mouse cells.³ That discovery was reported in the July 18, 2013 issue of the journal *Nature* as a cover story.



Thanks to funding from the Life Extension Foundation®, the husband and wife team then discovered that naked mole rat protein synthesis produces remarkably few errors.⁴ Both of those discoveries caused the journal *Science* to name the naked mole rat the 2013 "Vertebrate of the Year."⁵

As described in the January 2014 issue of *Life Extension Magazine*®, Dr. Seluanov was denied funding by the federal government because the genome of the naked mole rat is known. Without **Life Extension Foundation**® financial support, he was in danger of losing his naked mole rat colony entirely.

Calorie Restriction In Monkeys

George Roth, PhD (CEO, GeroScience, Inc, Pylesville, Maryland) discussed the seemingly conflicting results of calorie restriction studies on rhesus monkeys being conducted at the National Institute on Aging (NIA) and the University of Wisconsin (UW).



Dr. Roth was affiliated with the NIA study. Life span studies on rodents and more short-lived species have shown that calorie restriction with adequate nutrition extends both average and maximum life span.⁶

The relevance of these studies to humans is disputed on the grounds that such a mechanism would only be needed by short-lived species for survival.⁷

Unlike rodents, which do not generally develop diabetes or cardiovascular disease with age, humans and rhesus monkeys have a similar pattern of aging-associated diseases. Life span studies on humans are not typically feasible because of the long time involved, but rhesus monkeys also live quite long: an average of 27 years and maximum of 40 years when in captivity.

The NIA and UW monkey studies began over 30 years ago, but those life span studies will not be concluded until all the monkeys have died, which will take at least another 10 years. Nonetheless, both institutions have released preliminary results.

UW results released in 2009 indicated that only **13%** of the calorie-restricted monkeys had died of age-related causes compared with **37%** of the controls (who were not calorie-restricted).⁸ The calorie-restricted monkeys had half the incidence of cancer and cardiovascular disease and no cases of diabetes. Nearly an eighth of the control monkeys had developed diabetes. This UW study showed robust survival improvements in calorie-restricted monkeys along with huge reductions in incidences of the diseases that most commonly strike aging humans.



Preliminary results released from the NIA study in 2012 reported that **20%** of the calorie-restricted monkeys had died of age-related causes, compared with **24%** of the controls which is not a statistically significant difference.⁹ One explanation for the conflicting results may be that 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,¹⁰ so the NIA controls may be showing those benefits, which diminished the longevity difference between the two groups of monkeys (calorie restricted versus controls).

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.⁹ The UW protein source was lactalbumin, whereas the NIA diet included fish meal, which is rich in omega-3 fatty acids.⁹ Omega-3 fats are known to reduce cardiovascular disease.^{11,12} Differences in diet composition could explain the differing results between these two studies.

The media used the NIA study to question the value of humans reducing their calorie intake, which is regrettable as the UW study demonstrated remarkable survival improvements. The beneficial changes that occur in calorie-restricted humans (such as reduced blood levels of glucose, insulin, lipids and inflammatory markers, and lower body weight) clearly show this is what humans should be doing, yet misleading media headlines made it appear that it is alright for people to calorically overindulge.

Dr. Roth acknowledged that he does not have the self-discipline or inclination to practice calorie-restriction. For this reason he has long been looking for supplements that produce the benefits of calorie restriction.¹³ He noted that the Wikipedia entry on “caloric restriction mimetic” lists resveratrol, metformin, and other compounds that are claimed to produce the benefits of calorie-restriction.

Longevity Genes And Longevity Epigenetics

Nir Barzilai, MD (Director, Institute for Aging Research, Albert Einstein College of Medicine, Bronx, New York) is interested in genetic and lifestyle causes of longevity. He has determined that although a healthy lifestyle may promote longevity in the general population, protective genes are more important than lifestyle for achieving extreme longevity.¹⁴ Studying Ashkenazi Jews aged 95 or older, he has found some highly protective genes. One such



gene encodes a plasma protein that transfers cholesterol and triglycerides between the various forms of cholesterol carriers (HDL, LDL, and VLDL).^{15,16} Another longevity gene, which encodes a cholesterol carrier, harbors a modification that occurs in about **10%** of individuals aged 60, but in about **25%** of centenarians (people over 100 years of age).¹⁷

Gil Atzmon, PhD (Associate Professor, Albert Einstein College of Medicine, Bronx, New York), who is a collaborator of Dr. Barzilai, is interested in the epigenetics of longevity. **Epigenetics** is the heritable modification of gene expression that is not controlled by DNA sequence. Comparing the children of centenarians with their spouses, Dr. Atzmon determined that the children had half the incidence of diabetes, a **60%** lower incidence of heart attacks,¹⁸ and higher levels of protective cholesterol (HDL cholesterol).¹⁹ Dr. Atzmon has also determined that centenarians have had fewer children, and reproduced later in life than the general population.²⁰ Although identical twins have the same genome (DNA sequences), their epigenetic differences increase with age, particularly when their lifestyles differ and they have not spent much time together.²¹ A greater randomness of epigenetic changes, such as methylation patterns, are associated with the “biological aging rate.”²² Dr. Atzmon has identified specific epigenetic changes associated with longevity.



European Biogerontology Conference Held In Israel

On March 10-13, 2013 the 8th European Congress on Biogerontology was held in Beer-Sheva, Israel. Israel has a special partnership status with the European Union. By being held in Israel, the conference was attended by a large number of American scientists who originated from Israel or were educated in Israel.

Beneficial Mitochondrial Peptide

Pinchas Cohen, MD (Dean, School of Gerontology, University of Southern California Davis, Los Angeles, California) is an expert in **humanin**, a protein (peptide) produced in mitochondria. Mitochondria are energy-generating organelles in cells, which have their own DNA separate from the DNA in the nucleus.²³ The amount of DNA found in the mitochondria is much less than that found in the nucleus. As such, mitochondrial DNA contains codes for only a few proteins, humanin being one of them.



Humanin was discovered by a search for factors helping to keep neurons alive in undiseased portions of the brains of Alzheimer's disease patients.²⁴ Humanin protects neurons against cell death in Alzheimer's disease, as well as protecting against toxic chemicals and prions (toxic proteins).²⁵ Dr. Cohen's team has shown that humanin also protects cells lining blood vessel walls, preventing atherosclerosis. In particular, they have shown that low levels of humanin in the bloodstream are associated with endothelial dysfunction of the coronary arteries (arteries of the heart).²⁶ Humanin has also been shown to promote insulin sensitivity, the responsiveness of tissues to insulin.²⁵ Because humanin levels decline with age, it is believed that reduced humanin contributes to the development of aging-associated diseases, including Alzheimer's disease and type II diabetes.²⁵

Muscle Stem Cells And Aging

Zipora Yablonka-Reuveni, PhD (Professor, University of Washington, Seattle, Washington) has been studying muscle stem cells. Injury, exercise, and even routine daily activity results in muscle damage that is repaired by muscle stem cells. Age-related muscle deterioration is associated with a substantial

decline in skeletal muscle mass, strength, and quality,²⁷ which contributes to frailty in the elderly. Dr. Yablonka-Reuveni has established that the quantity of muscle stem cells declines with age, but the regenerative potential of those stem cells does not decline.²⁸ Using running rats she demonstrated that exercise results in an increase in subsequent spontaneous activity in the old rats.

Immune System Stem Cells In Aging And Diabetes

Paolo Madeddu, MD (Professor, University of Bristol, Bristol, England) is concerned with the effects of aging and diabetes on the immune system. Influenza vaccine is less effective in the elderly.²⁹ A decline in stem cell function in the immune system is believed to be partially responsible for this effect.³⁰ Stem cells of the immune system are created in the bone marrow. Dr. Madeddu's team has established that immune system stem cells of diabetic patients are damaged as a result of blood vessel malfunction in the bone marrow.^{31,32} His team has shown that insulin replacement significantly protects bone marrow blood vessels.³³

Eliminating Senescent Cells

Adi Sagiv, PhD student (Weizmann Institute of Science, Rehovot, Israel) has been studying fibrosis in the liver, which is caused by senescent cells (aged cells). Fibrosis is limited when immune system cells known as natural killer cells (NK cells) kill the senescent cells.³⁴ Dr. Sagiv has been investigating means by which NK cells can be activated to enhance the elimination of senescent cells, and thereby reduce fibrosis.³⁵



Stem Cells From Fat For Heart Attack

Jonathan Leor, MD (Professor of Cardiology, Tel-Aviv University, Tel Aviv, Israel) is interested in the use of mesenchymal stem cells to treat heart disease.³⁶ Mesenchymal stem cells are a specialized form of stem cells that have traditionally been isolated from bone marrow, but increasingly are being isolated from fat,³⁷ which is more convenient and less invasive. Macrophages are immune system cells that can be either pro-inflammatory and destructive, or anti-



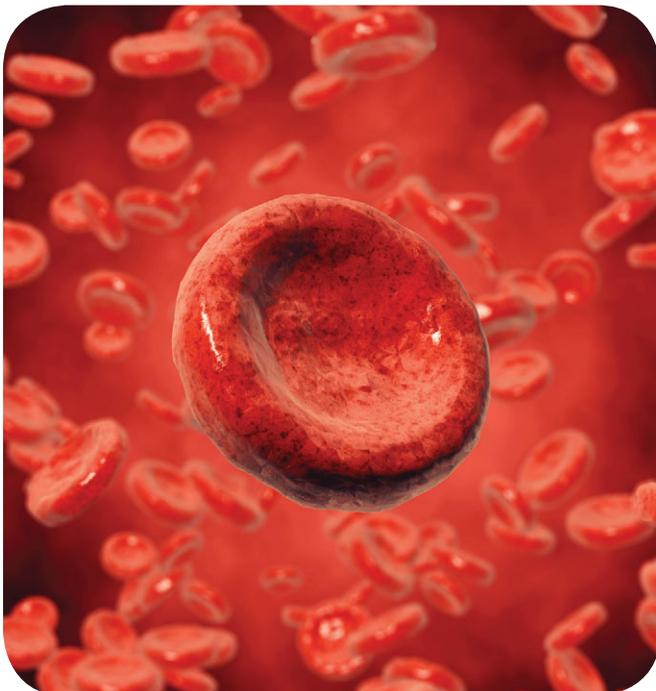
inflammatory and reparative. Mesenchymal stem cells can determine which type of macrophage manifests.³⁸ Using human stem cell cultures, Dr. Leor showed that mesenchymal stem cells from fat could promote anti-inflammatory macrophage development.³⁹ Using mesenchymal stem cells from the bone marrow of mice he demonstrated the ability of those cells to induce repair of experimentally-produced heart damage in mice.⁴⁰ Later, using cells isolated from human patients, he was able to show that mesenchymal stem cells isolated from fat near the heart were more likely to induce pro-inflammatory macrophages, whereas mesenchymal stem cells from subcutaneous fat (fat under the skin) induced anti-inflammatory properties.⁴¹ So it appears that mesenchymal stem cells from subcutaneous fat have potential for treatment of heart attack victims.

Rejuvenation Of Immune System B-Cells

Doron Melamed, PhD (Professor, Technion Israel Institute of Technology, Haifa, Israel) is concerned with why the adaptive immune system declines in



function with age, rendering vaccination of the elderly less effective than vaccination of the young. Many tissues of the body are continuously replenished by stem cells. Over a period of about two months, skin cells in the epidermis are shed and replenished by stem cells. Red blood cells last about four months before



they are replenished by stem cells. The white blood cells (leukocytes) of the adaptive immune system are not continuously replenished, however, because they must maintain immunity over the life span of the organism.⁴² Vaccination is thus less effective in the elderly.⁴³ Dr. Melamed has attempted to understand the mechanism by which the adaptive immune system ages.⁴⁴ The adaptive immune system consists primarily of **T-cells** (which mature in the thymus gland) and **B-cells** (which mature in bone). B-cells produce antibodies that are used by T-cells to identify and destroy virus-infected cells and cancer cells. Part of the reason that T-cells age is that the thymus gland begins shrinking at puberty. Dr. Melamed has focused his attention on why B-cells age. He has shown that he could rejuvenate B-cells in mice simply by removing the existing B-cells.^{42,45,46} The stem cells that create new B-cells retain their capacity to do so even in old age. The same technique could not be used to rejuvenate T-cells, however, because of the degeneration of the thymus gland after puberty.

Cytomegalovirus Is Not Harmless

Graham Pawelec, PhD (Professor, University of Tübingen, Tübingen, Germany) specializes in aging of the immune system due to cytomegalovirus (CMV).



CMV can be a life-threatening virus even for those with a healthy immune system.⁴⁷ Like herpes simplex virus, CMV is usually inactive in infected persons, but is never eliminated by the immune system. Unlike herpes simplex, however, a substantial portion of the immune system is involved in controlling CMV, which drains the resources of the immune

system.^{48,49} Dr. Pawelec noted that death rates in people as a result of cancer and cardiovascular disease cease accelerating by age 75-80, but death rates from infectious diseases continue to accelerate with age indefinitely.⁵⁰ Persons with the highest levels of CMV antibodies have a much higher risk of death from all causes than persons with few or no antibodies.^{51,52} CMV is pro-inflammatory, which helps to explain its contribution to immunosenescence and potential relationship with other pathologies.^{53,54} CMV prevalence increases with age, leveling off at about **85-90%** of the population being infected by age 75-80.⁵⁵ Dr. Pawelec's team has found that a lower responsiveness to vaccination is associated with CMV infection.⁵⁶ His team has also found that families having longevity genes have lower levels of CMV-associated alterations in immune function.⁵⁷ Efforts to develop a vaccine

against CMV have not yet been successful.^{58,59} CMV is transmitted through body fluids such as blood, urine, saliva, vaginal secretions, and semen. Infants are often newly infected, and therefore infectious. Infant caregivers should wash themselves thoroughly with soap and water after changing diapers, feeding, or handling toys. The drug *valganciclovir* can eradicate active CMV infection.⁶⁰

Life Extension Contributions To Modern Medicine

Ilia Stambler, PhD (Researcher, Bar-Ilan University, Tel Aviv, Israel) is a historian of life-extension science.⁶¹ The theme of his presentation was that many modern medical therapies had their origin in the efforts of early scientists to find methods of rejuvenation or life extension. Modern hormone replacement therapy originated from 19th century efforts to rejuvenate men using testicular extracts from animals. Similarly, some of the first transplantation operations were attempts at rejuvenation by transplantation of sex glands. Nobel Prize winning researcher Alexis Carrel fostered the idea that cells are immortal in cell culture. Although his techniques proved to be flawed, Carrel was an important contributor to the practice of culturing cells in a growth medium. The first academic institution devoted to blood transfusion was founded in 1925 by a Russian physician who was seeking rejuvenation. Dr. Stambler credits Alexander Bogomolets, a Soviet-era President of the Academy of Sciences of Ukraine, with the use of adjuvants (added components) to potentiate the immune response of the body. Dr. Bogomolets was an ardent life extension proponent. In 1938 Bogomolets organized the first publicized gerontological conference, and he also published his book *The Prolongation of Life*.



Conference Coverage In The Israeli Media

Dr. Stambler is himself an enthusiastic life extensionist. He was on the organizing committee of this conference. His promotion of the conference in Israeli television and newspapers emphasized the possibilities of life extension. He estimates that these media exposures reached nearly a fifth of the population of Israel. ●

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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THE UPGRADED LIFE EXTENSION MIX™

Scientists have identified multiple mechanisms by which **green tea** extract helps protect against LDL oxidation, neuronal oxidation, and a host of other structural and functional age-related changes. LIFE EXTENSION MIX™ provides more green tea extract than found in commercial formulations.

Broccoli is one of the vegetables best documented to protect healthy DNA. The broccoli concentrate in LIFE EXTENSION MIX™ is standardized to provide **sulforaphane** and other **glucosinolates**, compounds responsible for broccoli's protective benefits.

Olive polyphenols help protect against LDL oxidation, quench free radicals, and stabilize cell membranes. LIFE EXTENSION MIX™ contains an olive extract standardized to provide the best-documented polyphenol called **hydroxytyrosol**.

Luteolin is a flavonoid found in **parsley, artichoke, basil, celery**, and other foods. It has shown the ability to help protect against DNA oxidative damage. When measured against 27 other citrus flavonoids, **luteolin** proved one of the most beneficial at maintaining healthy DNA. **Luteolin** also suppresses excess levels of **interleukin-6** and **interleukin-1b**. LIFE EXTENSION MIX™ contains a standardized dose of **8 mg** of luteolin.

Lycopene is the red carotenoid in **tomatoes** that supports a healthy prostate and helps promote healthy lipid profiles for those already within a normal range.

Lutein is found in **spinach** and **collard greens** and has been shown to help maintain **eye macula pigment** structure.

Pomegranate may be the most effective plant to help maintain optimal endothelial function. This pomegranate extract is standardized to provide the punicalagins and other polyphenols found in up to 2.6 ounces of pomegranate juice.

Sesame lignans increase tissue levels of **vitamin E**, including **gamma tocopherol**, and inhibit the formation of an inflammatory precursor called arachidonic acid.

Wild blueberry extract, standardized to help maintain optimal neuronal function.

Pterostilbene is a compound naturally found in blueberries and grapes that has been shown to have beneficial, anti-aging effects

Cyanidin-3-Glucoside is a berry compound that promotes healthy function of the retina to help support night vision.

Pyridoxal 5'-phosphate helps protect against glycation reactions, a toxic process in which sugars bind to lipids and proteins to form non-functional structures in the body.

D-glucarate is found in **grapefruit, apples, oranges, broccoli**, and **Brussels sprouts**. D-glucarate supports a detoxification process that helps to remove DNA toxins.



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14.81 oz powder
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9 tablets, 14 capsules, or three scoops of powder provide:

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Decaffeinated Green tea extract (45% EGCG)	325 mg
Broccoli sprout concentrate extracts and calcium D-Glucarate (providing sulforaphane, glucosinolates, D-3T, and PEITC)	725 mg
Olive juice extract (providing polyphenols, hydroxytyrosol, tyrosol, oleuropein)	12.5 mg
Grape seed proanthocyanidin extract (Leucoselect®)	25 mg
Grape (proanthocyanidin) extract (BioVin®)	25 mg
Luteolin (from orange extract)	8 mg
Lycopene (natural tomato extract) (Tomat-O-Red®)	3 mg
Lutein (marigold extract) (465 mcg trans-zeaxanthin)	15 mg
Maqui Berry (<i>Aristotelia chilensis</i>) anthocyanin extract	100 mg
Milk thistle extract (85% silymarin)	100 mg
Bromelain (from pineapple)	15 mg
Citrus Bioflavonoids (50% hesperidin)	200 mg
Acerola extract 4:1	300 mg
Bilberry extract (MirtoSelect®)	30 mg
Pomegranate extract (30% punicalagins) (POMELLA®)	85 mg
Sesame seed lignan extract	10 mg
Fruit/Berry Complex blend (proprietary blend of concentrated blackberry, blueberry, cherry, cranberry, elderberry, persimmon, prune powders)	200 mg
Wild Blueberry anthocyanin extract (fruit)	150 mg
trans-Pterostilbene (from pTeroPure™)	0.5 mg
Cyanidin-3-Glucoside (C3G) (from blackcurrant extract)	1.25 mg
CherryPure® Tart Cherry (<i>Prunus cerasus</i>) proanthocyanidin extract	85 mg
Delphinidins (from Delphinol® Maqui berry (<i>Aristotelia chilensis</i>) extract)	2 mg

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Vitamin C	2000 mg
<i>as: ascorbic acid, calcium, magnesium & niacinamide ascorbates, ascorbyl palmitate, acerola extract</i>	
Natural Folate (from lemon extract)	400 mcg
Biotin	3,000 mcg
Trimethylglycine (TMG)	100 mg
Vitamin B1 (thiamine HCl)	125 mg
Vitamin B2 (riboflavin)	50 mg
Supplying: Riboflavin 5'-phosphate	2 mg
Vitamin B3 (niacinamide and niacinamide ascorbate)	117 mg
Vitamin B3 (niacin)	73 mg
Vitamin B5 (D-calcium pantothenate)	600 mg
Pantethine	5 mg
Vitamin B6 (pyridoxine HCl)	5 mg
Pyridoxal 5'-phosphate (vitamin B6)	100 mg
Vitamin B12 (methylcobalamin)	600 mcg

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Published scientific studies document that people who eat the **most fruits and vegetables** have much lower incidences of health problems. Few people, however, consistently eat enough plant foods to protect against common age-related decline, and commercial multivitamins do not provide all of the vital plant components needed to maintain good health.^{1,3} **Life Extension Mix™** provides a broad array of **vegetable/fruit extracts**.

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The **new Life Extension Mix™** also contains a potent **anthocyanin** called **delphinidins**. Delphinidins activate the production of **nitric oxide**, enabling vascular relaxation and supporting blood pressure. **Delphinidins** can also help to control inflammatory processes, stimulate the immune system, and stabilize blood sugar helping to control metabolic balance.

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Mineral Complex

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Zinc (monomethionine) (OptiZinc®)	15 mg
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Calcium	218 mg
Copper (as copper bisglycinate chelate TRAACS®)	1 mg
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Potassium chloride (37.4 mg elemental)	71.3 mg
Molybdenum (sodium molybdate)	125 mcg
Manganese (gluconate)	1 mg
Iodine (potassium iodide)	150 mcg
Magnesium oxide (335.96 mg elemental)	560 mg
Magnesium citrate (35.28 mg elemental)	261.3 mg
Magnesium glycinate (11.74 mg elemental)	100 mg
Magnesium taurinate (7.83 mg elemental)	100 mg
Magnesium arginate (5.87 mg elemental)	100 mg
Magnesium ascorbate (3.40 mg elemental)	58.1 mg

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Phosphatidylcholine (from soy)	150 mg
Inositol	250 mg

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Life Extension Mix™ contains the **sodium selenite, selenomethionine, and Se-methyl L-selenocysteine** forms of selenium. Some scientific evidence suggests that consumption of **selenium** may reduce the risk of certain forms of cancer; however, the FDA has determined that this evidence is limited and not conclusive.

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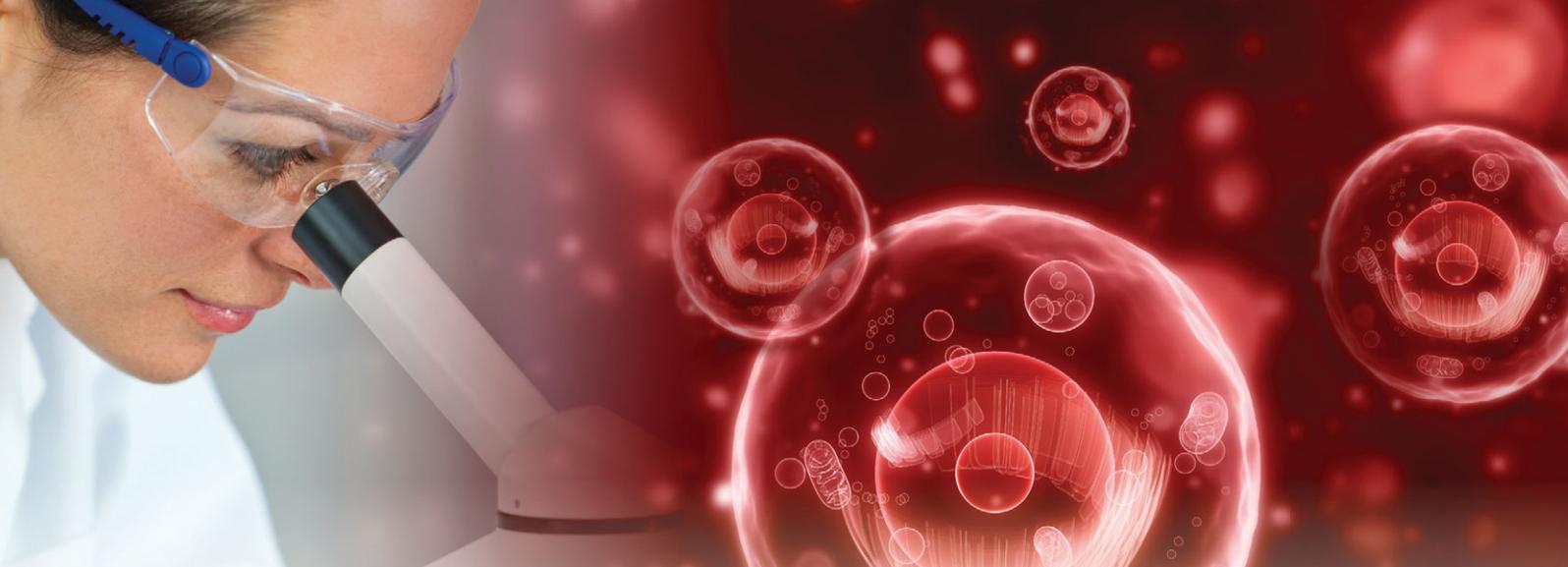
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CAUTION: Some people choose a high-niacin version of Life Extension Mix that provides 862 mg in the daily dose, of which 345 mg is the form of niacin that can cause temporary flushing, itching or gastric disturbances. Liver function testing is recommended when niacin is taken in excess of 500 mg daily. Those with gout or liver diseases should avoid taking high doses of niacin. Consult with your doctor before using this product if you are taking anticoagulant medications. Individuals consuming more than 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxyvitamin D measurement. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

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- **PQQ:** This breakthrough micronutrient has been shown to trigger **mitochondrial biogenesis**—the growth of **new** mitochondria in aging cells!⁶ PQQ also activates genes involved in protecting the delicate structures within the mitochondria.⁷⁻¹⁰
- **LUTEOLIN:** Systemic inflammation is involved in most undesirable consequences of aging. Culprits behind **inflammatory** reactions are pro-inflammatory **cytokines**, such as **interleukin-1** and **tumor necrosis factor-alpha**. Luteolin is a flavonoid that has been shown to help suppress these inflammatory cytokines.¹¹⁻¹⁶
- **BENFOTIAMINE:** Effectively modulates multiple destructive biochemical pathways that are induced by higher than desirable blood glucose levels. Human mortality studies indicate that **ideal** fasting glucose levels are between **74–85 mg/dL**. Yet many aging people have fasting glucose above **90 mg/dL**, which is less than optimal.¹⁶⁻¹⁹ Benfotiamine protects endothelial cell integrity from the effects of high glucose levels. In addition, benfotiamine exhibits direct antioxidative capacity and supports DNA function.²⁰
- **PYRIDOXAL 5'-PHOSPHATE:** Aging results in the formation of **advanced glycation end products** throughout the body. **Pyridoxal 5'-phosphate** is the active form of vitamin B6 that has been shown to protect against both lipid and protein **glycation** reactions.²¹⁻²⁴

- **R-LIPOIC ACID:** Destructive free-radical activity in the **mitochondria** plays a major role in the loss of cellular vitality. A **microencapsulated Bio-Enhanced® R-lipoic acid** facilitates youthful **mitochondrial energy output** while guarding against **free radicals**. Two forms of lipoic acid are sold on the supplement market, but **R-lipoic acid** is far more potent.²⁵⁻²⁸
- **ACETYL-L-CARNITINE ARGINATE:** The amino acid L-carnitine is required to transport fats into the **mitochondria** to be burned for cellular energy. **Acetyl-L-carnitine arginate** is a patented form of carnitine that also **supports neurites** in the brain.²⁹

Taking all of the individual ingredients in the **Mitochondrial Energy Optimizer with BioPQQ®** separately would be prohibitively expensive, but Life Extension® members obtain this comprehensive formula at substantial savings.

A bottle of **Mitochondrial Energy Optimizer with BioPQQ®** containing **120 capsules** retails for \$94. If a member buys four bottles, the price is reduced to **\$63** per bottle.

Just four capsules of **Mitochondrial Energy Optimizer with BioPQQ®** provide:

Carnosine	1000 mg
ArginoCarn® Acetyl-L-carnitine arginate DiHCl	675 mg
R-Lipoic acid (as microencapsulated Bio-Enhanced®)	150 mg
Benfotiamine	150 mg
Pyridoxal 5'-Phosphate	100 mg
BioPQQ®	10 mg
Luteolin	8 mg
Calcium	230 mg



Item # 01768

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To order **Mitochondrial Energy Optimizer with BioPQQ®**, 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.



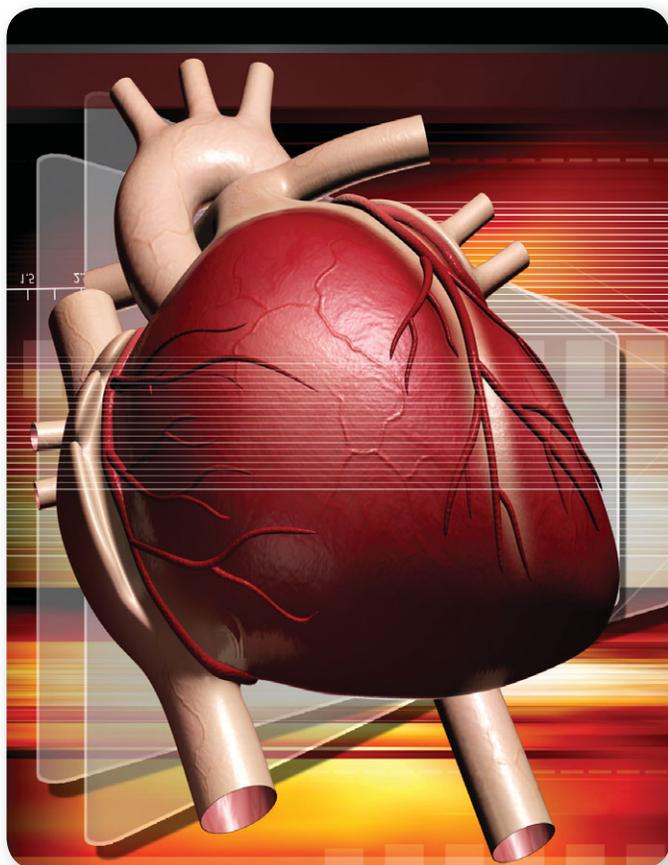
BOOK REVIEW

BY JON FINKEL

HEART

AN AMERICAN MEDICAL ODYSSEY

THE STORY OF A PATIENT, A DOCTOR, AND
35 YEARS OF MEDICAL INNOVATION



For those aware of how painfully behind the curve the federal government is when it comes to our nation's health, it will come as no shock to learn that the White House, in fairly recent history, used to give out free packs of cigarettes emblazoned with the presidential seal. Furthermore, it should come as no surprise that even after the US surgeon general issued his first report on the dangers of smoking, the general public, along with our government officials, ignored the warning and continued to smoke at will.

Vice President Dick Cheney, who spent most of his political career working in or near the White House, is a poster child for how smoking and horrific eating habits can lead to chronic heart disease and, if not for the miracle of modern medicine, death.

In the new book, *Heart: An American Medical Odyssey – The story of a patient, a doctor, and 35 years of medical innovation*, Cheney chronicles his 40-year battle with heart disease, along with his doctor, Jonathan Reiner, MD. It all began with a near-suicidal diet and smoking problem that took off in the late 1960s. Here is how Cheney describes his lethal lifestyle in his own words:

“My habit really picked up once I got into Washington and was working for Don Rumsfeld, who was a counselor to President Nixon. In those days, just about everyone smoked in meetings, at meals, at home. It was pervasive... Tobacco companies kept the White House stocked with presidential cigarettes that came in gold-trimmed white boxes stamped with the presidential seal. You could also get matches from Air Force One, Marine One and even Camp David... Despite the growing evidence that smoking was bad for your health, we all did it. Even in a meeting in the Oval Office, it wasn’t unusual for most participants to be smoking... By the time I was in my early thirties, I’d developed a heavy smoking habit, my diet was terrible, and I didn’t get nearly enough sleep or exercise. I basically ate whatever anyone put in front of me. Many nights, dinner consisted of high-calorie, high-fat hors d’oeuvres at Washington receptions. Other nights, I’d arrive home late and whip up some eggs and bacon for dinner. Sunday morning meant a trip to the local Krispy Kreme for a dozen doughnuts... I rarely got exercise.”

—Dick Cheney

The book begins with Cheney as a 34-year-old White House chief of staff, who begins and ends each day with the most powerful man

in the world, Gerald Ford, the President of the United States.

Like most men in their thirties, Cheney didn’t give much thought to mortality and lived his day-to-day life as if it would never end. The fact that he smoked almost non-stop throughout the day and ate sugar-laden, fatty, nutritionless foods on a regular basis didn’t concern him. Nor did he concern himself with regular doctor visits or blood tests.

Following President Ford’s loss to Jimmy Carter in the 1976 elections, Cheney took some time off and finally had time to go to a doctor for a physical. Following his visit, his doctor told him that given his smoking, cholesterol levels, bad diet, and family history on his mother’s side, he was a prime candidate for a heart attack. He wasn’t even 40 years old.

Cheney didn’t believe him. Instead, he proceeded with his dangerous lifestyle and embarked on a run for Congress. While on a campaign stop in Cheyenne, Cheney

woke up at 2 a.m. with a tingling sensation in the two small fingers of his left hand. He woke up his wife and they went to the hospital, where Cheney walked in on his own—then promptly passed out. When he came to, his room was buzzing with a frenzy of people; he was 37 years old and having a heart attack.

The book goes back and forth between Cheney’s own battle with heart disease and the history of humanity’s struggle with the condition, as told by his doctor, Jonathan Reiner, MD. For instance, Reiner talks about how during World War II, the US Army solicited the assistance of a physiologist, Ancel Keys, to help design a mobile diet for paratroopers. Following the war, Keys, from the University of Minnesota, spent his time trying to figure out why Americans were experiencing such a sharp rise in deaths from cardiac disease. In 1961, in a profile story on him for *Time* magazine, he recommended the following diet:



Eat less fat meat, fewer eggs, and dairy products. Spend more time on fish, chicken, liver, Canadian bacon, Italian food, Chinese food, supplemented by fresh fruits, vegetables, and casseroles.

While he had a few things right, he had almost everything else wrong—and this was considered a cutting-edge recommendation for his time!

In 1984, Cheney had his second heart attack while working on Capitol Hill. Even though his first heart attack prompted him to quit smoking, he considered the second one a “true wake up call,” as his lifestyle in terms of his hours worked, the stress he endured, and his new hobbies of playing tennis, hiking, and skiing pushed his heart to the limit. Unfortunately for his health, as his heart conditioned worsened, his responsibilities in Washington continued to increase. At this time, Cheney began to develop a relationship with his physician, who would monitor his activities and allow him to fully participate in his life and job.

Of course, the best-laid plans often fall apart, and the bill of Cheney’s early abuse to his body, along with his genes, came due for a third time in 1988, when he awoke once again with chest pain and was brought to George Washington University Hospital.

When he arrived in the emergency room his blood pressure was 115/70, and his pulse was 64, which were both considered normal. However, his EKG showed signs of a new MI and after a series of tests a new clot was discovered blocking the right coronary artery, confirming a third heart attack in ten years.

Further tests showed that Cheney’s coronary artery disease

was progressing, prompting his doctor to advise bypass surgery. Cheney says that at this time, his quality of life was greatly affected and he was having difficulty carrying his luggage through airports due to such decreased stamina.

“Having open heart surgery wasn’t something I looked forward to, but if I wanted to continue my career in Congress and continue my skiing and pack trips in Wyoming and all of the other activities I loved, it was necessary,” he says, reflecting on his thoughts.

The surgery was successful and four months later he was back to skiing at Vail and Beaver Creek.

Vice President Cheney’s fourth heart attack occurred in 2000 and ultimately became famous for the physician’s description of how insignificant the cardiac event was in his press conference:

We have biochemical markers that enable us to determine whether or not there has been any damage at all to the heart muscle. And over the last several years...we’ve had some new tools, much more sensitive markers which weren’t available several years ago which enable us to detect extremely small levels of heart muscle damage... Two or three years ago we would simply—based on the biochemical data available then—we would simply have classified the event as just angina.

Nevertheless, it was Cheney’s fourth heart attack in less than two decades, and it signaled an increasingly serious escalation of his heart problems. As the book is about medical innovation and the evolution of cardiac care, the following chapters are filled with information about the history of several heart devices, as well as the men who invented them. With each device, for instance, a stent, we



learn how it was used in the care of Vice President Cheney, all the way up to when an ICD (implantable cardioverter defibrillator) saved his life in 2009 by rapidly pacing his heart during a V Fib event.

This reprieve, however, was only temporary, as Cheney would remarkably suffer a fifth heart attack in 2010. The story behind each of these events is relatable on a medical level but also holds special interest in terms of how it is handled when the man suffering the event is the Vice President.

Following his fifth minor heart attack, Cheney continued to try and keep a normal schedule, but he was experiencing labored breathing and exhaustion on a regular basis, and by June of 2010 he was approaching end-stage heart failure. He could no longer walk down the driveway to get his newspaper or climb the stairs to get to the second floor of his house. He describes waking up in the morning with barely enough



energy to make it to a large chair, just to fall asleep again. After dozens of heart procedures and nearly countless episodes, the Vice President began to feel like his time was almost up, as they had used nearly every bit of technology and all the medical procedures available for dealing with his disease. At this point, there were only two options left. The first was a heart transplant, which, with an average waiting period of 12 months, wasn't a possibility due to his worsening condition. The second was an LVAD, or left ventricular assist device, which is ultimately what Cheney opted for.

Cheney's five-week hospital stay for the LVAD surgery was the "toughest" procedure he'd undergone, and the details should be required reading for those who feel they don't need to take care of their heart. Essentially, with the exception of breathing, following the LVAD procedure, there was no bodily function he could perform without assistance.

His recovery from the procedure was painstaking and it was especially so when you consider that the purpose of the device was to allow him to live long enough for an even more serious procedure: a heart transplant.

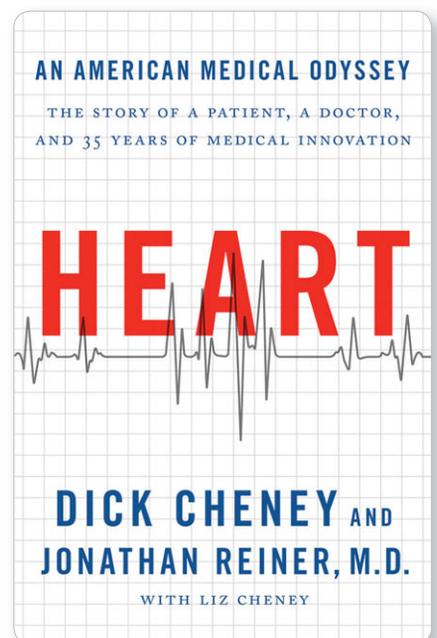
Altogether Cheney would spend 20 months on the LVAD pump. Then, on March 23, 2012, Cheney got the call that the transplant team had a new heart for him. Later the next day, Cheney's badly diseased heart was removed and he was given a new one, almost 30 years after his original heart began deteriorating.

Following the procedure, Cheney was on a respirator for a few hours and says he only experienced minor discomfort. Three days after surgery, he was out of bed and walking around the hospital; nine days later he was discharged. Other than taking antirejection medications to suppress his immune system so that it doesn't reject his new heart, his recovery has been trouble free.

He has returned to working on his property in Wyoming, although he covers his skin and wears lots of sun block to prevent skin cancer, which is a risk due to his compromised immune system. As with most heart transplant patients, Cheney has to monitor his weight and his diet. While his new heart has worked out well so far, there is no substitute for vigorously taking care of the one you have.

For those interested in the evolution of heart care and the procedures available to prolong the life of an aging human with heart disease, this book will provide valuable information and an interesting history of cardiac medicine and technology. ●

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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WITH XYLITOL

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Serving size: 1 tablet
Servings per container: 8

	Amount/Serving	%DV*
Calories	5	†
Total Carbohydrates	1g	<1%
Calcium	588mg	59%
Magnesium	156mg	39%

GiGs® - A proprietary blend of Apple Cider Vinegar, 87mg Licorice Extract and Papain.

* Percent of Daily Value based on 2,000 calorie diet.
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Invented by a
Gastroenterologist & Dentist

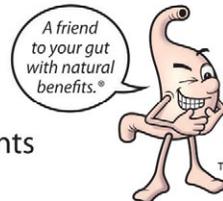


Dr. Doug Haghighi is a Cleveland Clinic trained gastroenterologist and Harvard trained dentist with expertise in diagnosing and treating oral and digestive diseases.

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Gutsy Chewy contains our proprietary blend of nature's remedies (GiGs®): papaya, licorice root and apple cider vinegar. It also has xylitol to optimize oral health, plus calcium and magnesium for digestive health. Together, they enhance the body's natural defense mechanisms that maintain a normal digestive system.



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GiGs® with calcium was tested in a randomized, double-blind, placebo-controlled human clinical study.¹ GiGs® has been assessed by leading U.S. toxicologists and found to be safe at the levels recommended.

A tube of all-natural **Gutsy Chewy** containing 8 gluten-free, lactose-free, vegan-friendly tablets retails for **\$11.50**. Members of the Life Extension Foundation pay only **\$8.63** per tube.

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¹Effect of GutsyGum, a novel gum, on subjective ratings of gastro-esophageal reflux following a refluxogenic meal. Submitted to *Journal of Complementary and Integrative Medicine*, Brown, Rachel; Sam, Cecilia H Y; Green, Tim and Wood, Simon

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



ANNUAL Blood Test

March 31 - June 2, 2014 **SUPER SALE**

LIFE EXTENSION'S SUGGESTIONS FOR ANNUAL SCREENING (Member Prices*)

For the past 34 years, the Life Extension Foundation® has stated that the most important step one can take to prevent disease cannot be found in a bottle of pills. The true cornerstone of any preventive health care program is annual blood screening. Proactive blood screening can help you greatly reduce your risk of disorders such as heart and kidney disease, stroke, liver conditions, anemia, and diabetes. Plus it's particularly valuable in helping you prevent and treat symptoms associated with hormone imbalance, such as fatigue, memory impairment, bone loss, weight gain, and depression. Blood testing remains one of the most important things you can do for yourself and your loved ones. More than any other measure, annual blood testing holds tremendous potential to protect both yourself and your loved ones.

Five Easy Steps:

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

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

For Our Local Members:

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

	(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE		(NON-MEMBER) RETAIL PRICE	MEMBER SUPER SALE PRICE
MEN'S ANNUAL BLOOD TESTING			WOMEN'S ANNUAL BLOOD TESTING		
<input type="radio"/> MALE LIFE EXTENSION PANEL (LC322582) \$400 \$199 CBC/Chemistry Profile (description on next page) DHEA-S PSA (prostate-specific antigen) Homocysteine C-Reactive Protein (high-sensitivity) Free Testosterone Total Testosterone Estradiol TSH for thyroid function Vitamin D (25-hydroxyvitamin D) Hemoglobin A1c			<input type="radio"/> FEMALE LIFE EXTENSION PANEL (LC322535) \$400 \$199 CBC/Chemistry Profile (description on next page) DHEA-S Estradiol Homocysteine C-Reactive Protein (high-sensitivity) Progesterone Free Testosterone Total Testosterone TSH for thyroid function Vitamin D (25-hydroxyvitamin D) Hemoglobin A1c		
<input type="radio"/> MALE HORMONE ADD-ON PANEL* (LCADDM) \$206.75 \$116.25 Pregnenolone and Dihydrotestosterone (DHT) To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel. This panel provides information about a testosterone metabolite that can affect the prostate; and the hormone pregnenolone that acts as a precursor to all other steroid hormones.			<input type="radio"/> FEMALE HORMONE ADD-ON PANEL* (LCADDF) \$166.75 \$93.75 Pregnenolone and Total Estrogen To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides information about total estrogen status; and the hormone pregnenolone that acts as a precursor to all other steroid hormones.		
<input type="radio"/> THYROID ADD-ON PANEL (LCTHYROID) \$73.33 \$36 Free T3 & Free T4.			<input type="radio"/> THYROID ADD-ON PANEL (LCTHYROID) \$73.33 \$36 Free T3 & Free T4.		
<input type="radio"/> OMEGA SCORE™™™ (LCOMEGA) \$175 \$99 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.			<input type="radio"/> OMEGA SCORE™™™ (LCOMEGA) \$175 \$99 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.		
<input type="radio"/> INSULIN (LC004333) \$33.33 \$23.25 Helpful to assess insulin resistance.			<input type="radio"/> INSULIN (LC004333) \$33.33 \$23.25 Helpful to assess insulin resistance.		
<input type="radio"/> VAP™ TEST (LC804500) \$120 \$67.50 The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. This test includes measurements of LDL particle size and lipoprotein subclasses.			<input type="radio"/> VAP™ TEST (LC804500) (UPDATED) \$120 \$67.50 The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. This test includes measurements of LDL particle size and lipoprotein subclasses.		
<input type="radio"/> FOOD SAFE ALLERGY TEST** (LCM73001) \$264 \$148.50 This test measures delayed (IgG) food allergies for 95 common foods.			<input type="radio"/> FOOD SAFE ALLERGY TEST** (LCM73001) \$264 \$148.50 This test measures delayed (IgG) food allergies for 95 common foods.		

SUGGESTED ADDITIONS TO ANNUAL BLOOD TESTING

<input type="radio"/> CORTISOL (LC004051) \$52 \$29.25 This test is used to help assess adrenal function.			<input type="radio"/> HEAVY METALS PANEL (BLOOD) (LC100003) \$265.33 \$149.25 This panel contains mercury, arsenic, and aluminum.		
<input type="radio"/> LP-PLA2 (PLAC® TEST) (LC123240) \$175 \$93.75 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.			<input type="radio"/> FERRITIN (LC004598) \$37 \$21 Used to evaluate iron stores in the body and to determine iron deficiency anemia.		
<input type="radio"/> RBC MAGNESIUM (LC080283) \$117 \$66 This test can provide an early indication of magnesium deficiency.			<input type="radio"/> VITAMIN B12/FOLATE* (LC000810) \$44 \$24.75 This test measures the amount of vitamin B12 and folate in the blood.		

* For non-member pricing call 1-800-208-3444.
 ** This test is packaged as a kit, requiring a finger stick performed at home.



OTHER POPULAR PANELS

- | | (NON-MEMBER)
RETAIL
PRICE | MEMBER
SUPER SALE
PRICE |
|--|---------------------------------|-------------------------------|
| <input type="radio"/> CBC/CHEMISTRY PROFILE (LC381822) | \$47 | \$26 |
| Note: This CBC/Chemistry Profile is included in many Life Extension Panels. Please note 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 | BUN/Creatinine Ratio | |
| Creatinine | Uric Acid | |
| BLOOD PROTEIN LEVELS | | |
| Total Protein | Globulin | |
| Albumin | Albumin/Globulin Ratio | |
| BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE | | |
| Red Blood Cell Count | Monocytes | |
| White Blood Cell Count | Lymphocytes | |
| Eosinophils | Platelet Count | |
| Basophils | Hemoglobin | |
| Neutrophils (Absolute) | Hematocrit | |
| Lymphs (Absolute) | MCV | |
| Monocytes (Absolute) | MCH | |
| Eos (Absolute) | MCHC | |
| Baso (Absolute) | Neutrophils | |
| RDW | | |
| BLOOD MINERAL PANEL | | |
| Calcium | Sodium | |
| Potassium | Chloride | |
| Phosphorus | Iron | NEW |
| <input type="radio"/> WEIGHT LOSS PANEL-BASIC (LC100027) | \$173.33 | \$97.50 |
| CBC/Chemistry profile (see description above), DHEA-S, free and total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Insulin and Hemoglobin A1c. | | |
| <input type="radio"/> WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028) | \$366.66 | \$206.25 |
| 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. NEW | | |
| <input type="radio"/> HEALTHY AGING PANEL-BASIC† (LC100025) | \$198.66 | \$111.75 |
| CBC/Chemistry profile (see description above), C-reactive protein (high sensitivity), Vitamin B12, Folate, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Ferritin, and Insulin. | | |
| <input type="radio"/> HEALTHY AGING PANEL-COMPREHENSIVE† (LC100026) | \$332 | \$186.75 |
| 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. NEW | | |
| <input type="radio"/> NUTRIENT PANEL† (LC100024) | \$465.33 | \$261.75 |
| Vitamin B12, Folate, Vitamin D 25-hydroxy, Vitamin C, Vitamin A, Selenium, Zinc, CoQ10, and RBC magnesium. | | |
| <input type="radio"/> COMPREHENSIVE THYROID PANEL (LC100018) | \$265.33 | \$149.25 |
| TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA. | | |
| <input type="radio"/> LIFE EXTENSION THYROID PANEL (LC304131) | \$100 | \$56.25 |
| TSH, T4, Free T3, Free T4. | | |

(NON-MEMBER)
RETAIL
PRICE

MEMBER
SUPER SALE
PRICE

- | | | |
|---|----------|----------|
| <input type="radio"/> FEMALE COMPREHENSIVE HORMONE PANEL† (LC100011) | \$398.66 | \$224.25 |
| CBC/Chemistry Profile (see description at left), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3. | | |
| <input type="radio"/> MALE COMPREHENSIVE HORMONE PANEL† (LC100010) | \$398.66 | \$224.25 |
| CBC/Chemistry Profile (see description at left), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3. | | |
| <input type="radio"/> MALE BASIC HORMONE PANEL (LC100012) | \$100 | \$56.25 |
| DHEA-S, Estradiol, Total and Free Testosterone, PSA. | | |
| <input type="radio"/> FEMALE BASIC HORMONE PANEL (LC100013) | \$100 | \$56.25 |
| DHEA-S, Estradiol, Total and Free Testosterone, Progesterone. | | |
| <input type="radio"/> ENERGY PROFILE (LC100005) | \$500 | \$281.25 |
| CBC/Chemistry Profile (see description), Epstein-Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferritin, Total and Free Testosterone, DHEA-S, Free T3, Free T4, Cortisol, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Insulin. | | |
| <input type="radio"/> ANEMIA PANEL (LC100006) | \$114.86 | \$64.50 |
| CBC/Chemistry Profile (see description), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count. | | |
| <input type="radio"/> INFLAMMATION PANEL (LC100007) | \$180 | \$101.25 |
| CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen. | | |
| <input type="radio"/> VAP™ PLUS† (LC100009) | \$440 | \$247.50 |
| VAP™, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy. | | |
| <input type="radio"/> DIABESITY PANEL (LC100019) | \$212 | \$119.25 |
| Glucose, Insulin, HbA1c, VAP™, Cortisol, C-Reactive Protein. | | |
| SINGLE TESTS | | |
| <input type="radio"/> GLYCOMARK (LC500115) | \$132 | \$74.25 |
| This test measures your average maximum glucose over the past two weeks and is an effective tool in monitoring postmeal glucose control. | | |
| <input type="radio"/> VITAMIN D-25 HYDROXY (LC081950) | \$62.67 | \$30 |
| Add this test to any order for a Super Sale Low Price of only \$30. | | |

†Certain tests need to be shipped to the lab on dry ice for customers using a blood draw kit, and some incur an additional \$35 charge. If you are going to LabCorp, this charge **does not** apply.

Blood Tests available only in the continental United States. Restrictions apply in NY, NJ, PA, RI, and MA. Not Available in Maryland.

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

ORDER LIFESAVING BLOOD TESTS FROM VIRTUALLY ANYWHERE IN THE US!

TERMS AND CONDITIONS

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

Signature of Life Extension Member

X

Life Extension Foundation Members only

MEMBER NO.

Male

Female

Name

Date of Birth
(required) / /

Address

City

State

Zip

Phone

Credit Card No.

Expiration Date /

Mail your order form to:

LifeExtension
NATIONAL DIAGNOSTICS, INC.

3600 West Commercial Boulevard
Fort Lauderdale, FL 33309

Phone your order to: 1-800-208-3444

Fax your order to: 1-866-728-1050

PRODUCTS

AMINO ACIDS

Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginate
Branched Chain Amino Acids
D, L-Phenylalanine Capsules
Glycine Capsules
L-Arginine Capsules
Arginine/L-Ornithine Capsules
L-Carnitine Capsules
L-Glutathione, L-Cysteine & C
L-Glutamine Capsules
L-Glutamine Powder
L-Lysine Capsules
L-Tyrosine Tablets
Mega L-Glutathione Capsules
N-Acetyl-L-Cysteine Capsules
Optimized Carnitine with GlycoCarn®
PharmaGABA
Super Carnosine Capsules
Taurine Capsules

BONE & JOINT HEALTH

ArthroMax® with Theaflavins and AprèsFlex®
ArthroMax® Advanced with UC-II® and
AprèsFlex®
Bone-Up™
Bone Restore
Bone Restore w/Vitamin K2
Bone Strength Formula w/KoAct™
Dr. Strum's Intensive Bone Formula
Fast Acting Joint Formula
Glucosamine Chondroitin Capsules

BRAIN HEALTH

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

DIGESTIVE

Bifido GI Balance
Carnosoothe w/PicroProtect
Digest RC™
Esophageal Guardian
Enhanced Super Digestive Enzymes
Extraordinary Enzymes
FlorAssist™
Gutsy Chewy Digestive Tablets
Pancreatin
Regimint
Theralac Probiotics

DURK AND SANDY PRODUCTS

Blast™
Inner Power™

EYE CARE

Bilberry Extract
Brite Eyes III
Eye Pressure Support with Mirtogenol®
MacuGuard™ Ocular Support
MacuGuard™ Ocular Support with Astaxanthin
Solarshield Sunglasses

FIBER

AppleWise Polyphenol
Fiber Food
TruFiber®
WellBetX PGX® plus Mulberry

FOOD

Rich Rewards™ Black Bean Vegetable Soup
Rich Rewards™ Spicy Cruciferous Vegetable Soup
Rich Rewards™ Cruciferous Vegetable Soup
Rich Rewards™ Lentil Soup
Rich Rewards™ Mung Bean Soup with Turmeric
Rich Rewards® Coffee
(Available in mocha, vanilla and decaffeinated)
Rich Rewards™ Dark Chocolate

HAIR CARE

Dr. Proctor's Advanced Hair Formula
Dr. Proctor's Shampoo
Super-Absorbable Tocotrienols

HEART HEALTH

AppleWise Polyphenol
Advanced Lipid Control
Aspirin (Enteric Coated)
Cardio Peak™ w/Standardized Hawthorn and Arjuna
Cho-Less™
D-Ribose Tablets
D-Ribose Powder
Endothelial Defense™ with
Full-Spectrum Pomegranate™
Fibrinogen Resist
Forskolin
Homocysteine Resist
Natural BP Management
Olive Leaf Vascular Support
Peak ATP® with GlycoCarn®
PhosphoOmega®
Policosanol
PROVINAL® Purified Omega-7
Pycnogenol® French Maritime Pine Bark Extract
Red Yeast Rice
Super Absorbable CoQ10™ with d-Limonene
Super Omega-3 EPA/DHA with Sesame
Lignans & Olive Fruit Extract
Super Ubiquinol CoQ10
Super Ubiquinol CoQ10 with BioPQQ®
Super Ubiquinol CoQ10 with Enhanced
Mitochondrial™ Support
Theaflavin Standardized Extract
TMG Powder
TMG Liquid Capsules

HERBAL/PHYTO PRODUCTS

Artichoke Leaf Extract
Asian Energy Boost
Astaxanthin w/Phospholipids
Berry Complete
Blueberry Extract
Blueberry Extract w/Pomegranate
Butterbur Extract w/Standardized
Rosmarinic Acid
Calcium D-Glucarate
Enhanced Berry Complete with Acai
Full-Spectrum Pomegranate™
Grapeseed Extract with Resveratrol &
Pterostilbene
Huperzine A
Kyolic® Garlic Formula 102 + 105
Kyolic® Reserve
Mega Green Tea Extract
Mega Green Tea Extract (Decaffeinated)
(also w/CoffeeGenic® Green Coffee Extract)
Mega Lycopene Extract
Optimized Ashwagandha Extract
Optimized Garlic
Pomegranate Extract
Pomegranate Juice Concentrate
Pycnogenol
Optimized Quercetin
Resveratrol with Synergistic Grape-Berry Actives

Rhodiola Extract
Silymarin
SODzyme™ with GliSODin®
Stevia Extract
Advanced Bio-Curcumin®
with Ginger & Turmerones
Super Bio-Curcumin®
Super Ginkgo Extract
Triple Action Cruciferous Vegetable Extract
Venotone
Whole Grape Extract

HORMONES

Advanced Natural Sex for Women® 50+
7-KETO® DHEA
DHEA
DHEA Complete
GH Pituitary Support Day Formula
GH Pituitary Support Night Formula
Liquid Melatonin
Melatonin
Melatonin Timed Release
Natural Estrogen with Pomegranate Extract
Pregnenolone
ProgestaCare for Women
Super Miraforte with Standardized Lignans

IMMUNE ENHANCEMENT

AHCC® (Active Hexose Correlated Compound)
Black Cumin Seed Oil
Black Cumin Seed Oil w/Bio-Curcumin®
Buffered Vitamin C Powder
Echinacea Extract
FlorAssist™ Probiotic
i26 Hyperimmune Egg
Immune Modulator w/Tinofend®
Immune Protect with PARACTIN®
Lactoferrin
Norwegian Shark Liver Oil
Optimized Fucoidan w/Maritech® 926
Peony Immune
ProBoost™ Thymic Protein A
Reishi Extract Mushroom Complex
Vitamin C with Dihydroquercetin
Winter Wellness™
Zinc Lozenges

INFLAMMATORY REACTIONS

Arthro-Immune Joint Support
ArthroMax® with Theaflavins
Boswella
Bromelain (Specially-coated)
Cytokine Suppress™ with EGCG
DHA (Vegetarian Sourced)
Fast Acting Joint Formula
Ginger Force
Krill Healthy Joint Formula
5-LOX Inhibitor w/AprèsFlex®
Mega EPA/DHA
Mega GLA with Sesame Lignans
MSM
Omega-3 Whirl
Organic Golden Flax Seed
Serrafazyme
SODzyme™ with GliSODin® and Wolfberry
Super Omega-3 EPA/DHA with Sesame
Lignans & Olive Fruit Extract
Tart Cherry w/Standardized CherryPURE®
Zyflamend® Whole Body

LIVER HEALTH

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

MINERALS

Biosil
 Bone Restore
 Bone Strength Formula w/KoAct®
 Bone-Up™
 Boron Capsules
 Calcium Citrate with D3
 Chromium Ultra
 Copper
 Iodoral
 Iron Protein Plus
 Magnesium
 Magnesium Citrate
 Only Trace Minerals
 Optimized Chromium w/Crominex® 3+
 OptiZinc
 Sea-Iodine™
 Selenium
 Se-Methyl L-Selenocysteine
 Strontium
 Vanadyl Sulfate
 Zinc 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
 5 HTP
 Enhanced Natural Sleep® w/ Melatonin
 Enhanced Natural Sleep® w/o Melatonin
 Natural Stress Relief
 SAME
 St. John's Wort Extract
 L-Tryptophan
 Optimized Tryptophan Plus

MOUTH CARE

Advanced Oral Hygiene
 Mouthwash w/Pomegranate
 Toothpaste
 Xyliwhite™ Mouthwash

MULTIVITAMIN

Booster
 Children's Formula Life Extension Mix™
 Comprehensive Nutrient Packs Basic
 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 Triple Peptide 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
 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) Rejuvenex®
 Rejuvenex® Body Lotion
 Rejuvenex® Factor Firming Serum
 Rejuvenating 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

SOY

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/InSea2® 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-Iodine™
 Vitamins D and K w/Sea-Iodine™
 Vitamin E
 Vitamin K2

WEIGHT MANAGEMENT

Advanced Anti-Adipocyte Formula w/AdipoStat & Integra Lean®
 Advanced Natural Appetite Suppress
 Calorie Control Weight Management™ Formula w/CoffeeGenic® Green Coffee Extract
 CoffeeGenic® Weight Management™ with Green Coffee Extract
 7-KETO DHEA
 DHEA® Complete
 Fucoxanthin Slim™
 Garcinia HCA
 Integra-Lean® African Mango Irvingia
 LuraLean® Caps Special Propolmannan Particle Size
 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	Qty	Total
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 veg. mint lozenges	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00681	AHCC - 500 mg, 30 caps	59.98	44.99		
00457	ALPHA-LIPOIC ACID w/BIOTIN (SUPER) - 250 mg, 60 caps	37.00	27.75		
	Buy 4 bottles, price each	32.00	24.00		
01440	ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO - 100 caps	26.00	19.50		
	Buy 4 bottles, price each	23.00	17.25		
01509	ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT & INTEGRA LEAN® (ADVANCED) - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01625	APPLEWISE POLYPHENOL EXTRACT - 600 mg, 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	19.00	14.25		
01039	ARGININE/ORNITHINE - 500/250, 100 caps	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	28.00	21.00		
	Buy 4 bottles, price each	25.38	19.04		
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		
	Buy 4 bottles, price each	14.00	10.50		
B					
00920	BENFOTIAMINE w/ THIAMINE - 100 mg, 120 veg. caps	\$19.95	\$14.96		
	Buy 4 bottles, price each	18.60	13.95		
00925	BENFOTIAMINE (MEGA) - 250 mg, 120 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01206	BERRY COMPLETE - 30 veg. caps	21.00	15.75		
	Buy 4 bottles, price each	18.67	14.00		

SUB-TOTAL OF COLUMN 1

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® - 60 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		
	Buy 4 bottles, price each	6.50	4.88		
01709	BLACK CUMIN SEED OIL - 60 softgels	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01710	BLACK CUMIN SEED OIL w/BIO-CURCUMIN® - 60 softgels	32.00	24.00		
	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 veg. 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		
	Buy 4 bottles, price each	44.00	33.00		
01680	BOOSTER w/ADVANCED K2 COMPLEX (SUPER) - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01661	BORON - 3 mg, 100 veg. caps	5.95	4.46		
	Buy 4 bottles, price each	5.25	3.94		
00202	BOSWELLA - 100 caps	38.00	28.50		
	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		
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 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
00893	BRITE EYES III - 2 vials, 5 ml each	34.00	25.50		
	Buy 4 boxes, price each	32.00	24.00		

SUB-TOTAL OF COLUMN 2

No.		Retail Each	Member Each	Qty	Total
01203	BROMELAIN (SPECIALLY-COATED) - 500 mg, 60 enteric coated tablets Buy 4 bottles, price each	\$21.00 19.00	\$15.75 14.25		
00884	BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID - 60 softgels Buy 4 bottles, price each	44.00 39.60	33.00 29.70		
C					
01653	CALCIUM CITRATE w/VITAMIN D - 300 caps Buy 4 bottles, price each	\$24.00 21.25	\$18.00 15.94		
01651	CALCIUM D-GLUCARATE - 200 mg, 60 veg. caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
01693	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEENIC® GREEN COFFEE EXTRACT BLUEBERRY FLAVOR - 414 grams powder Buy 4 jars, price each Buy 8 jars, price each	60.00 54.00 50.00	45.00 40.50 37.50		
01700	CARDIO PEAK™ w/STANDARDIZED HAWTHORN & ARJUNA - 120 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00916	CARNITINE w/GLYCOCARN® (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01532	L-CARNITINE - 500 mg, 30 veg. caps Buy 4 bottles, price each	15.00 13.20	11.25 9.90		
01258	CARNOSOOTHIE w/PICROPROTECT™ - 60 veg. caps Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
01687	CARNOSINE (SUPER) - 500 mg, 90 veg. caps Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01003	CAT MIX - 100 grams powder Buy 4 jars, price each	15.00 12.00	11.25 9.00		
01659	CDP CHOLINE CAPS - 250 mg, 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01391	CHILDREN'S FORMULA LIFE EXTENSION MIX™ - 100 chewable tablets Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00550	CHLORELLA - 500 mg, 200 tablets	23.50	17.63		
01571	CHLOROPHYLLIN - 100 mg, 100 veg. caps Buy 4 bottles, price each	24.00 20.00	18.00 15.00		
01359	CHO-LESS™ - 90 capsules	35.00	26.25		
01477	CHROMIUM ULTRA - 100 veg. caps Buy 4 bottles, price each	24.00 21.00	18.00 15.75		
01504	CHROMIUM W/CROMINEX® 3+ (OPTIMIZED) - 500 mcg, 60 veg. caps Buy 4 bottles, price each	9.00 8.00	6.75 6.00		
01503	CINSULIN® W/INSEA® AND CROMINEX® 3+ - 90 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
01818	CITRIMAX® (SUPER) - 180 veg. caps Buy 4 bottles, price each	40.00 38.00	30.00 28.50		
00818	CLA BLEND w/SESAME LIGNANS (SUPER) - 1,000 mg, 120 softgels Buy 4 bottles, price each Buy 10 bottles, price each	36.00 33.00 26.33	27.00 24.75 19.75		
00819	CLA BLEND w/GUARANA & SESAME (SUPER) - 1,000 mg, 120 softgels Buy 4 bottles, price each	42.00 38.33	31.50 28.75		
01707	COFFEENIC® WEIGHT MANAGEMENT™ w/GREEN COFFEE EXTRACT - 90 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
01896	COGNITEX® w/BRAIN SHIELD™ - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	60.00 52.00 48.00	45.00 39.00 36.00		

SUB-TOTAL OF COLUMN 3

No.		Retail Each	Member Each	Qty	Total
01897	COGNITEX® w/PREGNENOLONE & BRAIN SHIELD™ - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	\$62.00 53.00 50.00	\$46.50 39.75 37.50		
01421	COGNITEX® BASICS - 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	38.00 35.00 32.00	28.50 26.25 24.00		
01735	COMPLETE B-COMPLEX - 60 veg. caps Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
01795	COMPREHENSIVE NUTRIENT PACKS BASIC - 30 packs Buy 4 boxes, price each	48.00 44.00	36.00 33.00		
01798	COMPREHENSIVE NUTRIENT PACKS ADVANCED - 30 packs Buy 4 boxes, price each	90.00 82.00	67.50 61.50		
00119	COPPER CAPSULES - 2 mg, 100 caps	9.91	7.43		
00949	COQ10™ w/ #LIMONENE (SUPER ABSORBABLE) - 50 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	25.00 22.00 20.00	18.75 16.50 15.00		
00950	COQ10™ w/ #LIMONENE (SUPER ABSORBABLE) - 100 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	66.00 60.00 56.00	49.50 45.00 42.00		
01226	COQ10 (SUPER UBIQUINOL) - 100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	56.00 52.00 48.00	42.00 39.00 36.00		
01733	COQ10 w/BIOPOQ® (SUPER UBIQUINOL) - 100 mg, 30 softgels Buy 4 bottles, price each Buy 10 bottles, price each	54.00 50.00 46.00	40.50 37.50 34.50		
01426	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) - 100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	62.00 56.00 52.00	46.50 42.00 39.00		
01425	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) - 50 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	58.00 53.00 50.00	43.50 39.75 37.50		
01427	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) - 50 mg, 30 softgels Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01431	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) - 200 mg, 30 softgels Buy 4 bottles, price each Buy 10 bottles, price each	62.00 56.00 52.00	46.50 42.00 39.00		
01053	CORIOLUS SUPER STRENGTH - 600 mg, 150 veg. caps	99.95	74.96		
80152	COSMESIS ADVANCED TRIPLE PEPTIDE SERUM - 1 oz bottle Buy 2 bottles, price each	65.00 57.00	48.75 42.75		
80140	COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS - .33 oz Buy 2 bottles, price each	49.00 42.00	36.75 31.50		
80139	COSMESIS AMBER SELF MICRODERMABRASION - 2 oz Buy 2 jars, price each	49.00 42.00	36.75 31.50		
80118	COSMESIS ANTI-AGING MASK - 2 oz Buy 2 bottles, price each	72.00 63.36	54.00 47.52		
80151	COSMESIS ANTI-AGING REJUVENATING FACE CREAM - 2 oz jar w/COFFEE EXTRACT Buy 2 jars, price each	65.00 57.00	48.75 42.75		
80134	COSMESIS ANTI-GLYCATION SERUM - 1 oz w/BLUEBERRY & POMEGRANATE EXTRACTS Buy 2 bottles, price each	33.00 31.35	24.75 23.51		

SUB-TOTAL OF COLUMN 4

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
C CONTINUED					
80133	COSMESIS ANTIOXIDANT FACIAL MIST - 2 oz Buy 2 bottles, price each	\$32.00 30.40	\$24.00 22.80		
80127	COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM - 2 oz Buy 2 jars, price each	45.00 42.80	33.75 32.10		
80128	COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB - 2 oz Buy 2 jars, price each	59.00 51.92	44.25 38.94		
80117	COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM - 2 oz Buy 2 jars, price each	64.00 57.49	48.00 43.12		
80121	COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB - 2 oz Buy 2 jars, price each	58.00 51.04	43.50 38.28		
80105	COSMESIS ANTI-REDNESS & ADULT BLEMISH LOTION - 1 oz Buy 2 bottles, price each	74.50 65.56	55.88 49.17		
80147	COSMESIS BIOFLAVONOID CREAM - 1 oz jar Buy 2 jars, price each	46.00 39.00	34.50 29.25		
80144	COSMESIS BROCCOLI SPROUT CREAM - 1 oz Buy 2 jars, price each	46.00 39.00	34.50 29.25		
80120	COSMESIS CORRECTIVE CLEARING MASK - 2 oz Buy 2 jars, price each	64.50 56.76	48.38 42.57		
80141	COSMESIS DNA REPAIR CREAM - 1 oz jar Buy 2 jars, price each	49.00 42.00	36.75 31.50		
80108	COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 oz Buy 2 bottles, price each	74.95 65.95	56.21 49.46		
80123	COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM - 2 oz Buy 2 jars, price each	69.50 61.16	52.13 45.87		
80107	COSMESIS FINE LINE-LESS - 1 oz Buy 2 bottles, price each	74.50 65.56	55.88 49.17		
80131	COSMESIS HAIR SUPPRESS FORMULA - 4 oz Buy 2 bottles, price each	59.00 51.92	44.25 38.94		
80137	COSMESIS HEALING FORMULA ALL-IN-ONE CREAM - 1 oz Buy 2 jars, price each	53.00 45.43	39.75 34.07		
80115	COSMESIS HEALING MASK - 2 oz Buy 2 bottles, price each	64.50 56.76	48.38 42.57		
80102	COSMESIS HEALING VITAMIN K CREAM - 1 oz Buy 2 bottles, price each	79.50 69.96	59.63 52.47		
80109	COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 oz Buy 2 bottles, price each	58.00 51.04	43.50 38.28		
80110	COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER - 1 oz Buy 2 bottles, price each	58.00 51.04	43.50 38.28		
80138	COSMESIS HYDRATING ANTIOXIDANT FACE MIST - 4 oz Buy 2 bottles, price each	39.95 38.00	29.96 28.50		
80103	COSMESIS LIFTING & TIGHTENING COMPLEX - 1 oz Buy 2 tubes, price each	74.50 65.56	55.88 49.17		
80146	COSMESIS LYCOPENE CREAM - 1 oz jar Buy 2 jars, price each	28.00 25.40	21.00 19.05		
80135	COSMESIS MELATONIN CREAM - 1 oz Buy 2 jars, price each	33.00 27.10	24.75 20.33		
80114	COSMESIS MILD FACIAL CLEANSER - 8 oz Buy 2 bottles, price each	59.00 51.92	44.25 38.94		
80122	COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM - 2 oz Buy 2 jars, price each	64.00 56.32	48.00 42.24		
80111	COSMESIS PIGMENT CORRECTING CREAM - 1/2 oz Buy 2 bottles, price each	74.00 65.12	55.50 48.84		

SUB-TOTAL OF COLUMN 5

No.		Retail Each	Member Each	Qty	Total
80106	COSMESIS REJUVENATING SERUM - 1 oz Buy 2 bottles, price each	\$74.50 65.56	\$55.88 49.17		
80150	COSMESIS RENEWING EYE CREAM - 1/2 oz Buy 2 jars, price each	65.00 57.00	48.75 42.75		
80142	COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 oz Buy 2 bottles, price each	46.00 39.00	34.50 29.25		
80112	COSMESIS SKIN LIGHTENING SERUM - 1/2 oz Buy 2 bottles, price each	85.00 74.80	63.75 56.10		
80130	COSMESIS SKIN STEM CELL SERUM - 1 oz Buy 2 bottles, price each	74.00 69.00	55.50 51.75		
80143	COSMESIS STEM CELL CREAM W/ALPINE ROSE - 1 oz jar Buy 2 jars, price each	66.00 58.00	49.50 43.50		
80148	COSMESIS TIGHTENING & FIRMING NECK CREAM - 2 oz jar Buy 2 jars, price each	39.00 35.00	29.25 26.25		
80116	COSMESIS ULTRA LIP PLUMPER - 1/3 oz Buy 2 bottles, price each	64.00 56.32	48.00 42.24		
80101	COSMESIS ULTRA WRINKLE RELAXER - 1 oz Buy 2 bottles, price each	89.95 79.76	67.46 59.82		
80113	COSMESIS UNDER EYE REFINING SERUM - 1/2 oz Buy 2 bottles, price each	74.50 65.56	55.88 49.17		
80104	COSMESIS UNDER EYE RESCUE CREAM - 1/2 oz Buy 2 bottles, price each	74.50 65.56	55.88 49.17		
80129	COSMESIS VITAMIN C SERUM - 1 oz Buy 2 bottles, price each	85.00 74.80	63.75 56.10		
80136	COSMESIS VITAMIN D LOTION - 4 oz Buy 2 bottles, price each	36.00 33.66	27.00 25.25		
80145	COSMESIS VITAMIN E-ESSENTIAL CREAM - 1 oz Buy 2 jars, price each	28.00 26.00	21.00 19.50		
80149	COSMESIS YOUTH SERUM - 1 oz Buy 2 bottles, price each	65.00 57.00	48.75 42.75		
00862	CRAN-MAX® - 500 mg, 60 veg. caps Buy 4 bottles, price each	17.50 15.00	13.13 11.25		
01424	CRAN-MAX® with UTIROSE™ (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01529	CREATINE CAPSULES - 120 veg. caps Buy 4 bottles, price each	10.95 9.25	8.21 6.94		
01746	CREATINE WHEY GLUTAMINE POWDER - 454 grams (vanilla) Buy 4 jars, price each	30.00 27.00	22.50 20.25		
01429	CR MIMETIC LONGEVITY FORMULA - 60 veg. caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
*33840	CRWAY GREAT GLUCOSE CONTROL CD	98.00	82.00		
**CRWAY	CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE	195.00	195.00		
00407	CURCUMIN® (SUPER BIO) - 400 mg, 60 veg. caps Buy 4 bottles, price each	38.00 35.00	28.50 26.25		
01808	CURCUMIN® w/GINGER & TURMERONES (ADVANCED BIO)-30 softgels Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01804	CYTOKINE SUPPRESS™ w/EGCG - 30 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
D					
00658	7-KETO® DHEA METABOLITE - 25 mg, 100 caps Buy 4 bottles, price each	\$28.00 24.00	\$21.00 18.00		
01479	7-KETO® DHEA METABOLITE - 100 mg, 60 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		

SUB-TOTAL OF COLUMN 6

No.		Retail Each	Member Each	Qty	Total
01640	DHA (VEGETARIAN SOURCED) - 200 mg, 30 veg. softgels Buy 4 bottles, price each	\$20.00 18.00	\$15.00 13.50		
00607	DHEA - 25 mg, 100 tablets (dissolve in mouth) Buy 4 bottles, price each	14.00 11.75	10.50 8.81		
01478	DHEA COMPLETE - 60 veg. caps Buy 4 bottles, price each	48.00 43.20	36.00 32.40		
00335	DHEA - 25 mg, 100 caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
00454	DHEA - 15 mg, 100 caps Buy 4 bottles, price each	14.00 12.00	10.50 9.00		
00882	DHEA - 50 mg, 60 caps Buy 4 bottles, price each	19.00 17.00	14.25 12.75		
01689	DHEA - 100 mg, 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01358	DIGEST RC - 30 tablets Buy 4 boxes, price each	19.95 17.00	14.96 12.75		
01272	DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
01671	D,L-PHENYLALANINE CAPSULES - 500 mg, 100 veg. caps Buy 4 bottles, price each	18.75 16.00	14.06 12.00		
01540	DMAE BITARTRATE - 150 mg, 200 veg. caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
00059	DMG - 125 mg, 60 tablets Buy 4 boxes, price each	22.80 21.00	17.10 15.75		
01570	DNA PROTECTION FORMULA - 60 veg. caps Buy 4 bottles, price each	34.00 32.00	25.50 24.00		
00544	DOG MIX - 100 grams powder Buy 4 jars, price each	19.50 16.00	14.63 12.00		
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 oz Buy 4 bottles, price each	39.95 32.00	29.96 24.00		
00320	DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 oz Buy 4 bottles, price each	24.95 22.00	18.71 16.50		
00899	DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 oz Buy 4 jars, price each	39.95 38.95	29.96 29.21		
E					
01528	ECHINACEA EXTRACT - 250 mg, 60 veg. caps Buy 4 bottles, price each	\$14.35 12.50	\$10.76 9.38		
01498	ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each	56.00 52.00	42.00 39.00		
00997	ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each	54.00 48.00	40.50 36.00		
00625	EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
01737	ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01042	EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01706	EXTRAORDINARY ENZYMES - 60 caps Buy 4 bottles, price each	26.00 24.00	19.50 18.00		
01514	EYE PRESSURE SUPPORT w/MIRTOGENOL® - 30 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		

SUB-TOTAL OF COLUMN 7

No.		Retail Each	Member Each	Qty	Total
F					
01054	FACE MASTER® PLATINUM	\$199.00	\$199.00		
00965	FAST-ACTING JOINT FORMULA - 30 caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
01717	FAST-C® w/DIHYDROQUERCETIN - 120 veg. tabs Buy 4 bottles, price each	26.00 24.00	19.50 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 Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
01670	FIBER FOOD CAPS - 200 veg. caps Buy 4 bottles, price each Buy 10 bottles, price each	16.00 14.00 13.00	12.00 10.50 9.75		
00718	FIBRINOGEN RESIST™ - 30 veg. caps Buy 4 bottles, price each	49.00 44.00	36.75 33.00		
01749	FLAX SEED (ORGANIC GOLDEN GROUND) - 14 oz.	11.67	8.75		
01806	FLORASSIST™ PROBIOTIC - 30 liquid veg. caps Buy 4 boxes, price each	33.00 30.00	24.75 22.50		
01439	FOLATE (OPTIMIZED) (L-METHYLFOLATE) 1,000 mcg - 100 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01641	FOLIC ACID + B12 CAPSULES - 200 veg. caps Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
01544	FORSKOLIN - 10 mg, 60 veg. caps Buy 4 bottles, price each	16.00 14.00	12.00 10.50		
01513	FUCOIDAN w/MARITECH® 926 (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	36.00 33.00	27.00 24.75		
00993	FUCOXANTHIN-SLIM™ - 90 softgels Buy 4 bottles, price each	44.00 39.00	33.00 29.25		
G					
00559	GAMMA E TOCOPHEROL/TOCOTRIENOLS - 60 softgels Buy 4 bottles, price each	\$42.00 37.00	\$31.50 27.75		
00759	GAMMA E TOCOPHEROL w/SESAME LIGNANS - 60 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01394	(OPTIMIZED) GARLIC - 200 veg. caps Buy 4 bottles, price each	24.95 21.00	18.71 15.75		
01301	GH PITUITARY SUPPORT DAY FORMULA - 120 tabs Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01302	GH PITUITARY SUPPORT NIGHT FORMULA - 120 veg. caps Buy 4 bottles, price each	25.00 22.50	18.75 16.88		
**01228	GINGER FORCE - 60 softgels	31.95	23.96		
01658	GINKGO BILOBA CERTIFIED EXTRACT™ - 120 mg, 365 veg. caps Buy 2 bottles, price each	46.00 43.50	34.50 32.63		
01648	GINKGO EXTRACT 28/7 (SUPER) - 120 mg, 100 veg. caps Buy 4 bottles, price each	29.00 26.50	21.75 19.88		
00756	GLA WITH SESAME LIGNANS (MEGA) - 60 softgels Buy 4 bottles, price each	19.50 18.00	14.63 13.50		
00345	(L) GLUTAMINE CAPSULES - 500 mg, 100 caps Buy 4 bottles, price each	14.95 13.50	11.21 10.13		
00141	(L)-GLUTAMINE POWDER - 100 grams Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
00522	GLUCOSAMINE/CHONDROITIN CAPSULES - 100 caps Buy 4 bottles, price each	38.00 32.00	28.50 24.00		

SUB-TOTAL OF COLUMN 8

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
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™ TRANSGLUCCOSIDASE - 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	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01604	GREEN COFFEE EXTRACT COFFEENIC® - 200 mg, 90 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01620	GREEN COFFEE EXTRACT COFFEENIC® - 400 mg, 90 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
00953	GREEN TEA EXTRACT (MEGA) - lightly caffeinated - 100 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
00954	GREEN TEA EXTRACT (MEGA) - decaffeinated - 100 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
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		

H					
01074	5 HTP - 100 mg, 60 caps	\$27.95	\$20.96		
01738	HCA (GARCINIA) - 90 veg. caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01393	HEPATOPRO - 900 mg, 60 softgels	50.00	37.50		
	Buy 4 bottles, price each	46.00	34.50		
01435	HOMOCYSTEINE RESIST - 100 caps	24.00	18.00		
	Buy 4 bottles, price each	21.60	16.20		
01527	HUPERZINE A - 200 mcg, 60 veg caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00661	HYDRODERM® - 1 oz	79.95	59.96		
	Buy 2 bottles, price each	65.33	49.00		

I					
*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		
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		
	Buy 4 bottles, price each	24.00	18.00		
01002	IODORAL® - 180 tabs	50.00	37.50		
01677	IRON PROTEIN PLUS - 300 mg, 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
01492	IRVINGIA W/PHASE 3™ - 120 veg. caps	56.00	42.00		
	CALORIE CONTROL COMPLEX (OPTIMIZED AFRICAN MANGO)				
	Buy 4 bottles, price each	48.00	36.00		

SUB-TOTAL OF COLUMN 9

No.		Retail Each	Member Each	Qty	Total
J, K					
00056	JARRO-DOPHILUS EPS™ - 60 veg. caps	\$22.95	\$17.21		
01759	JARRO-DOPHILUS EPS™ - 25 Billion - 30 caps	39.95	29.96		
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		
	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		
00214	KYOLIC® GARLIC FORMULA 105 - 200 caps	27.45	20.59		
00789	KYOLIC® RESERVE - 600 mg, 120 caps	27.95	20.96		

L					
01681	LACTOFERRIN (APOLACTOFERRIN) CAPS - 60 caps	\$48.00	\$36.00		
	Buy 4 bottles, price each	44.00	33.00		
00020	LECITHIN - 16 oz. granules	15.00	11.25		
	Buy 4 jars, price each	12.50	9.38		
01855	LIFE EXTENSION MIX™ - 315 tablets	98.00	73.50		
	Buy 4 bottles, price each	86.00	64.50		
	Buy 10 bottles, price each	69.50	52.13		
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		
	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		
	Buy 4 bottles, price each	16.00	12.00		
01639	5-LOX INHIBITOR W/APRESFLEX® - 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01678	L-LYSINE - 620 mg, 100 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
01470	LURALEAN® CAPS SPECIAL PROPOLMANNAN PARTICLE SIZE - 120 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
00455	LYCOPENE EXTRACT (MEGA) - 15 mg, 90 softgels	35.00	26.25		
	Buy 4 bottles, price each	30.00	22.50		

SUB-TOTAL OF COLUMN 10

No.		Retail Each	Member Each	Qty	Total
M					
01885	MACUGUARD™ OCULAR SUPPORT - 60 softgels	\$22.00	\$16.50		
	Buy 4 bottles, price each	19.80	14.85		
01886	MACUGUARD™ OCULAR SUPPORT w/ASTAXANTHIN - 60 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01459	MAGNESIUM CAPS - 500 mg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.00	7.50		
01682	MAGNESIUM CITRATE - 160 mg, 100 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	7.50	5.63		
01668	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		
	Buy 4 bottles, price each	11.00	8.25		
00331	MELATONIN - 10 mg, 60 caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
00332	MELATONIN - 3 mg, 60 veg. lozenges	8.00	6.00		
	Buy 4 bottles, price each	6.88	5.16		
01734	MELATONIN (Fast Acting Liquid) - 3 mg (Natural Citrus-Van)	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
01787	MELATONIN TIME RELEASE - 300 mcg, 100 veg. tabs	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
01788	MELATONIN TIME RELEASE - 750 mcg, 60 veg. tablets	8.00	6.00		
	Buy 4 bottles, price each	7.00	5.25		
01536	METHYLCOBALAMIN - 1 mg, 60 lozenges (vanilla)	9.95	7.46		
	Buy 4 bottles, price each	8.00	6.00		
01537	METHYLCOBALAMIN - 5 mg, 60 lozenges (vanilla)	32.00	24.00		
	Buy 4 bottles, price each	25.00	18.75		
	Buy 10 bottles, price each	23.00	17.25		
00709	MIGRA-EEZE™ (BUTTERBUR) - 60 softgels	29.50	22.13		
	Buy 4 bottles, price each	26.33	19.75		
01800	MIGRA-MAG w/BRAIN SHIELD™ - 90 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01522	MILK THISTLE (CERTIFIED EUROPEAN) - 750 mg, 60 veg caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
01822	MILK THISTLE (EUROPEAN) - 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01817	MILK THISTLE (EUROPEAN) - 120 softgels	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01698	MIRAFORTE w/STANDARDIZED LIGNANS (SUPER) - 120 caps	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
01769	MITOCHONDRIAL BASICS w/BIOPQQ® - 30 caps	52.00	39.00		
	Buy 4 bottles, price each	46.00	34.50		
01768	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ® - 120 caps	94.00	70.50		
	Buy 4 bottles, price each	84.00	63.00		
00065	MK-7 - 90 mcg, 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		

SUB-TOTAL OF COLUMN 11

No.		Retail Each	Member Each	Qty	Total
01279	MOUTHWASH W/POMEGRANATE - 16 oz	\$18.50	\$13.88		
	Buy 4 bottles, price each	17.00	12.75		
00451	MSM (METHYLSULFONYLMETHANE) - 1,000 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	11.95	8.96		
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	42.00	31.50		
	Buy 4 bottles, price each	37.80	28.35		
01692	NATURAL ESTROGEN w/POMEGRANATE EXTRACT - 60 caplets	38.00	28.50		
	Buy 4 bottles, price each	33.00	24.75		
01221	NATURAL FEMALE SUPPORT - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01471	NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01626	NATURAL SEX FOR WOMEN® 50+ (ADVANCED) - 90 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	45.33	34.00		
01444	NATURAL SLEEP® - 60 veg. caps	13.00	9.75		
	Buy 4 bottles, price each	10.00	7.50		
01551	NATURAL SLEEP® w/ MELATONIN (ENHANCED) - 30 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01511	NATURAL SLEEP® w/o MELATONIN (ENHANCED) - 30 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
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 225 grams - Lemon flavor	40.00	30.00		
	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		
O					
01623	OLIVE LEAF VASCULAR SUPPORT - 500 mg, 60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
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 & OLIVE FRUIT EXTRACT (SUPER) - 120 enteric coated softgels	34.00	25.50		
	Buy 4 bottles, price each	31.00	23.25		
	Buy 10 bottles, price each	28.00	21.00		

SUB-TOTAL OF COLUMN 12

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
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 & OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL) - 240 softgels	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01632	OMEGA-3 LEMON WHIRL - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01633	OMEGA-3 TROPICAL WHIRL - 16 oz bottle	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01801	ONE-PER-DAY - 60 tablets	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01328	ONLY TRACE MINERALS - 90 caps	15.00	11.25		
	Buy 4 bottles, price each	12.50	9.38		
P					
01789	PALMETTOGUARD™ SAW PALMETTO w/BETA SITOSTEROL -30 softgels	\$15.00	\$11.25		
	Buy 12 bottles, price each	12.00	9.00		
00073	PANCREATIN - 500 mg, 50 caps	13.22	9.92		
01323	PEAK ATP® WITH GLYCO-CARN® - 60 veg. caps	54.00	40.50		
	Buy 4 bottles, price each	50.00	37.50		
00342	PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder	109.95	82.46		
01080	PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps	79.95	59.96		
01811	PEONY IMMUNE - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00673	PGX™ PLUS MULBERRY (WELLBETX®) -180 caps	34.95	26.21		
00865	PHARMAGABA® - 60 chewable tablets	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
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 6 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		
	Buy 4 bottles, price each	17.55	13.16		
00957	POMEGRANATE JUICE CONCENTRATE - 16 oz. liquid	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
01797	POMI-T® - 60 veg. caps	33.33	25.00		
	Buy 4 bottles, price each	30.00	22.50		
00577	POTASSIUM IODIDE - 1 box, 14 tablets	6.95	5.21		
	Buy 4 boxes, price each	5.25	3.94		
01500	PQQ CAPS W/BIOPQQ® - 10 mg, 30 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01647	PQQ CAPS W/BIOPQQ® - 20 mg, 30 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00302	PREGNENOLONE - 50 mg, 100 caps	26.00	19.50		
	Buy 4 bottles, price each	22.00	16.50		
00700	PREGNENOLONE - 100 mg, 100 caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
***01373	PRELOX® NATURAL SEX FOR MEN® - 60 tablets	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		

SUB-TOTAL OF COLUMN 13

No.		Retail Each	Member Each	Qty	Total
00525	PROBOOST THYMIC PROTEIN A™ - 4 mcg, 30 packets	\$59.95	\$44.96		
01441	PROGESTACARE FOR WOMEN - 4 oz cream	35.00	26.25		
	Buy 4 bottles, price each	32.00	24.00		
01895	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		
01742	PROTEIN-ISOLATE (WHEY) VANILLA - 1 lb. powder	30.00	22.50		
	Buy 4 jars, price each	27.00	20.25		
01743	PROTEIN-ISOLATE (WHEY) CHOCOLATE - 1 lb. powder	30.00	22.50		
	Buy 4 jars, price each	27.00	20.25		
01770	PROTEIN CONCENTRATE (New Zealand Whey) Vanilla - 520 gr	30.00	22.50		
	Buy 4 bottles, price each	26.60	19.95		
01771	PROTEIN CONCENTRATE (New Zealand Whey) Chocolate - 660 gr	30.00	22.50		
	Buy 4 bottles, price each	26.60	19.95		
01812	PROVINAL® PURIFIED OMEGA-7 - 30 softgels	27.00	20.25		
	Buy 4 bottles, price each	24.00	18.00		
01508	PTEROPURE™ - 50 mg Pterostilbene 60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	30.00	22.50		
01587	PURE PLANT PROTEIN - Veg. Vanilla 540 grams powder	38.00	28.50		
	Buy 4 jars, price each	35.00	26.25		
01637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT -100 mg, 60 veg. caps	64.00	48.00		
	Buy 4 bottles, price each	60.00	45.00		
01217	PYRIDOXAL 5'-PHOSPHATE - 100 mg, 60 veg. caps	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
Q, R					
01309	QUERCETIN (OPTIMIZED) - 250 mg, 60 veg. caps	\$22.00	\$16.50		
	Buy 4 bottles, price each	20.00	15.00		
01030	RED YEAST RICE (Bluebonnet)- 600 mg, 60 veg. caps	16.95	13.56		
00605	REGIMINT - 60 enteric-coated caps	19.95	14.96		
	Buy 4 bottles, price each	18.67	14.00		
01708	REISHI EXTRACT MUSHROOM COMPLEX - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01448	REJUVENEX® BODY LOTION - 6 oz	24.00	18.00		
	Buy 4 tubes, price each	19.80	14.85		
	Buy 8 tubes, price each	17.00	12.75		
01621	REJUVENEX® FACTOR FIRMING SERUM - 1.7 oz	65.00	48.75		
	Buy 2 bottles, price each	50.66	38.00		
	Buy 6 bottles, price each	38.52	28.89		
01220	REJUVENEX® (ULTRA) - 2 oz	52.00	39.00		
	Buy 2 jars, price each	48.00	36.00		
	Buy 4 jars, price each	44.00	33.00		
	Buy 8 jars, price each	39.93	29.95		
00676	REJUVENIGHT® (ULTRA) - 2 oz	39.95	29.96		
	Buy 4 jars, price each	36.00	27.00		
01413	RESVERATROL W/PTEROSTILBENE - 20 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01410	RESVERATROL W/PTEROSTILBENE - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01430	RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED) - 250 mg, 60 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	41.33	31.00		
00889	RHODIOLA EXTRACT - 250 mg, 60 veg. caps	11.75	8.81		
	Buy 4 bottles, price each	10.58	7.94		

SUB-TOTAL OF COLUMN 14

No.		Retail Each	Member Each	Qty	Total
00972	(D) RIBOSE POWDER - 150 grams Buy 4 jars, price each	\$27.50 24.75	\$20.63 18.56		
01473	(D) RIBOSE TABLETS - 100 veg. tabs Buy 4 bottles, price each	32.00 28.00	24.00 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 Natural Vanilla	15.00	11.25		
01730	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag Natural Mocha	15.00	11.25		
01610	RICH REWARDS® DECAFFEINATED ROAST GROUND COFFEE - 12 oz. bag	14.00	10.50		
01809	RICH REWARDS™ DARK CHOCOLATE - 15 piece bag Buy 4 bags, price each	15.00 12.96	11.25 9.72		
01712	RICH REWARDS™ BLACK BEAN VEGETABLE SOUP - 32 oz. bottle Buy 6 bottles, price each	13.00 12.25	9.75 9.19		
01530	RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle Buy 6 bottles, price each	11.95 11.25	8.96 8.44		
01531	RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle Buy 6 bottles, price each	11.95 11.25	8.96 8.44		
01705	RICH REWARDS™ LENTIL VEGETABLE SOUP - 32 oz. bottle Buy 6 bottles, price each	13.00 12.25	9.75 9.19		
01810	RICH REWARDS™ MUNG BEAN SOUP W/TURMERIC - 32 oz. bottle Buy 6 bottles, price each	13.00 12.25	9.75 9.19		
01208	R-LIPOIC ACID (SUPER) - 300 mg, 60 veg. caps Buy 4 bottles, price each	49.00 45.00	36.75 33.75		
00070	RNA CAPSULES - 500 mg, 100 caps Buy 4 bottles, price each	17.95 16.16	13.46 12.12		
S					
01432	SAFFRON w/SATIAREAL (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	\$36.00 32.00	\$27.00 24.00		
00358	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets Buy 8 boxes, price each	16.00 14.00	12.00 10.50		
00453	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00557	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets Buy 6 boxes, price each	28.00 24.00	21.00 18.00		
01055	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01740	SEA-IODINE™ - 1,000 mcg, 60 veg. caps Buy 4 bottles, price each	8.00 7.20	6.00 5.40		
00046	SELENIUM - 2 oz dropper bottle	11.95	8.96		
01679	SE-METHYL L-SELENOCYSTEINE - 200 mcg, 100 veg. caps Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
00318	SERRAFLAZYME - 100 tablets Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00284	SHARK LIVER OIL (NORWEGIAN) - 1,000 mg, 30 softgels Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01684	SILYMARIN - 100 mg, 50 veg. caps Buy 4 bottles, price each	9.25 8.25	6.94 6.19		
01596	SKIN RESTORING PHYTCERAMIDES w/LIPOWHEAT® - 30 veg. liquid caps Buy 4 bottles, price each	25.00 23.00	18.75 17.25		
00961	SODZYME® w/GLISODIN® AND WOLFERRY - 90 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		

SUB-TOTAL OF COLUMN 15

No.		Retail Each	Member Each	Qty	Total
00657	SOLARSHIELD SUNGLASSES - 1 pair smoke color Buy 2 pairs, price each	\$12.99 11.50	\$9.74 8.63		
01097	SOY EXTRACT (ULTRA) - 150 veg. caps Buy 4 bottles, price each	87.00 78.00	65.25 58.50		
00432	STEVIA™ EXTRACT (BETTER) - 100 packets, 1 gram each	9.95	7.46		
00438	STEVIA™ ORGANIC LIQUID EXTRACT (BETTER) - 2 oz liquid	11.00	8.25		
01396	ST. JOHN'S WORT EXTRACT - 300 mg, 60 veg. caps Buy 4 bottles, price each	10.98 10.00	8.24 7.50		
01476	STRONTIUM - 750 mg, 90 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01649	SUPER ABSORBABLE SOY ISOFLAVONES - 60 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01790	SUPER SAW PALMETTO/NETTLE ROOT w/BETA-SITOSTEROL - 60 softgels Buy 4 bottles, price each	28.00 26.00	21.00 19.50		
	Buy 12 bottles, price each	24.00	18.00		
01778	SUPER SELENIUM COMPLEX - 200 mcg, 100 veg. caps Buy 4 bottles, price each	14.00 12.00	10.50 9.00		
	Buy 12 bottles, price each	11.00	8.25		
T					
01723	TART CHERRY EXTRACT w/STANDARDIZED CHERRYPURE® - 60 veg. caps Buy 4 bottles, price each	\$22.00 20.00	\$16.50 15.00		
00199	TAURINE - 1,000 mg, 50 caps Buy 4 bottles, price each	8.95 8.00	6.71 6.00		
00133	TAURINE POWDER - 300 grams Buy 4 bottles, price each	20.00 16.88	15.00 12.66		
01304	THEAFLAVIN STANDARDIZED EXTRACT - 30 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01683	(L) THEANINE - 100 mg, 60 veg. caps Buy 4 bottles, price each	24.00 20.50	18.00 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 Buy 4 bottles, price each	14.00 11.00	10.50 8.25		
01859	TMG - 1,000 mg, 60 veg. liquid caps Buy 4 bottles, price each	13.00 12.00	9.75 9.00		
00781	TOCOTRIENOLS WITH SESAME LIGNANS - 60 softgels Buy 4 bottles, price each	38.00 36.00	28.50 27.00		
01400	TOCOTRIENOLS (SUPER-ABSORBABLE) - 60 softgels Buy 4 bottles, price each	30.00 28.00	22.50 21.00		
01278	TOOTH PASTE - 4 oz (Mint) Buy 4 tubes, price each	9.50 8.67	7.13 6.50		
01468	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01469	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT w/RESVERATROL - 60 veg. caps Buy 4 bottles, price each	32.00 29.60	24.00 22.20		
01803	TRI SUGAR SHIELD™ - 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01386	TRUFIBER® - 180 grams	32.95	24.71		
01389	TRUFLORA PROBIOTICS - 32 veg. caps	42.95	32.21		
01722	L-TRYPTOPHAN - 500 mg, 90 veg. caps Buy 4 bottles, price each	33.00 30.00	24.75 22.50		
01721	TRYPTOPHAN PLUS (OPTIMIZED) - 90 veg. caps Buy 4 bottles, price each	32.00 29.00	24.00 21.75		

SUB-TOTAL OF COLUMN 16

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No.		Retail Each	Member Each	Qty	Total
T CONTINUED					
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 tablets	\$15.00	\$11.25		
	Buy 4 bottles, price each	12.50	9.38		
00408	VENOTONE - 60 caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01327	VINPOCETINE - 10 mg, 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
01526	VITAMIN B3 NIACIN - 1,000 mg, 100 veg. caps	12.75	9.56		
	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 tablets	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
00927	VITAMIN C w/ DIHYDROQUERCETIN - 1,000 mg, 250 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		
	Buy 4 bottles, price each	9.90	7.43		
01718	VITAMIN D3 - 7,000 IU, 60 softgels	14.00	10.50		
	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		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	26.00	19.50		
01225	VITAMIN K2 (LOW-DOSE) - 45 mcg, 90 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		

SUB-TOTAL OF COLUMN 17

No.		Retail Each	Member Each	Qty	Total
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 - 75 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

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SUB-TOTAL COLUMN	1	
SUB-TOTAL COLUMN	2	
SUB-TOTAL COLUMN	3	
SUB-TOTAL COLUMN	4	
SUB-TOTAL COLUMN	5	
SUB-TOTAL COLUMN	6	
SUB-TOTAL COLUMN	7	
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SUB-TOTAL COLUMN	15	
SUB-TOTAL COLUMN	16	
SUB-TOTAL COLUMN	17	
SUB-TOTAL COLUMN	18	

ORDER TOTALS

Sub-Total A (Sub-total of Columns 1 through 18)	
Postage And Handling (Any size order, continental U.S.)	\$5.50
C.O.D.s (Add \$7 for C.O.D. orders)	
Shipping	
GRAND TOTAL (Must be in U.S. dollars)	

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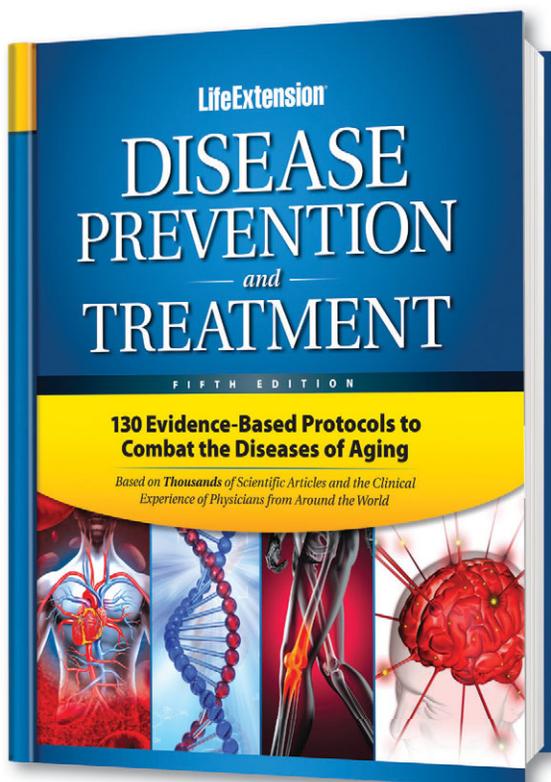
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Powerful Pair.

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- + Bio-Replenishing® Action
- + Colonizes the intestinal lining in the large and small intestines
- + Five clinically proven probiotic strains
- + High Bifido bacteria count to help with colon health



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- + Bio-Cleansing Action
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- + Contains enzymes that help digest problematic yeast cell walls



Bio-Replenishing Probiotic



Bio-Cleansing Probiotic



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Theralac®
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TruFlora®
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Retail: \$42.95

TruFiber®
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Retail: \$32.95

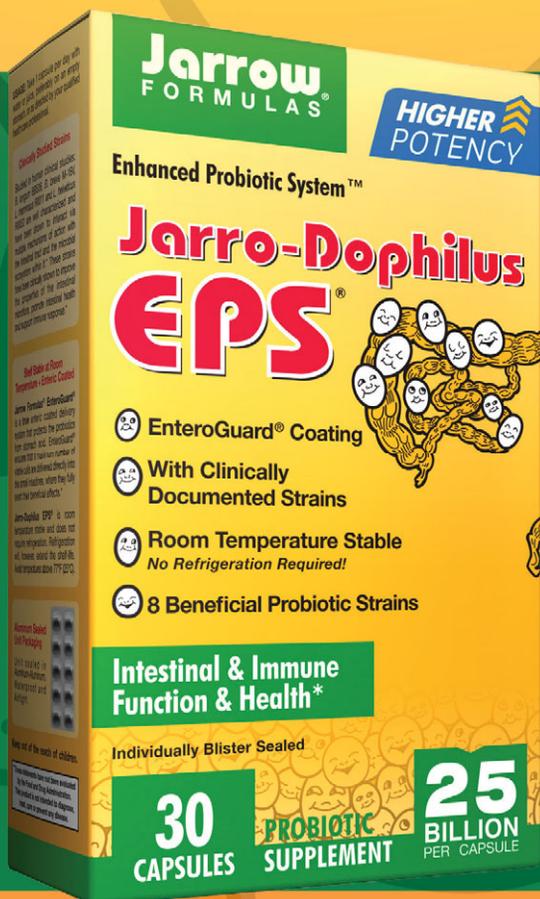
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25
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Whole-Body Health as Nature Intended

Discover *Zyflamend*, the premier herbal supplement for helping to balance and support the body's natural, **healthy inflammation** process.*

What is the Inflammation Response?

Our body's inflammation response is a natural process and part of the body doing its job. We often think of the inflammation response as something we can feel—such as where there are large numbers of sensitive nerve endings. But we can also have a response we can't feel, where sensitive nerves aren't concentrated. Whether we're aware of it or not, this inflammation response can affect the whole body.

Zyflamend® from New Chapter® is an intelligent blend of full-spectrum herbal extracts containing a multitude of naturally occurring compounds. These whole, active phytonutrients work together to support a **healthy inflammation response**.* Perhaps as important as a daily multivitamin, Zyflamend is the patented herbal protocol to help your whole body's natural inflammation process stay balanced.* In addition, whole-food antioxidants, including Ginger, Turmeric, Green Tea, and Rosemary, help quench free radicals and support healthy aging.*

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Zyflamend Whole Body

120 Softgels (Item #01051) Retail \$64.95 **Member Price \$48.71**

Zyflamend's Patented Formula

Many of the herbs in Zyflamend have been used traditionally to **support human health and longevity** in cultures around the world. Chinese Skullcap, Chinese Goldthread, and Barberry are time-honored tonic herbs in the Chinese herbal tradition. Rosemary and Oregano are native to the Mediterranean region. Zyflamend's Hu Zhang is a natural source of resveratrol, a heart-supportive compound in red wine.* Turmeric, Ginger, and Holy Basil are common elements in Asian and Indian wellness regimes. Green Tea is known across this region for its many remarkable properties.

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

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



Item # 01680

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

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

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

JUST ONE SOFTGEL OF SUPER BOOSTER SUPPLIES:

Vitamin K2 (as menaquinone-7)	200 mcg	Gamma Tocopherol	197.45-296.25 mg
Vitamin K2 (as menaquinone-4)	1000 mcg	Lycopene	10 mg
Vitamin K1 (as phytonadione)	1000 mcg	Lutein	2 mg
Ginkgo extract	120 mg	Vitamin B12	300 mcg
Sesame lignans	20 mg	Vitamin C	95 mg
Chlorophyllin	100 mg		

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.

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

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Contains soybeans.

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

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

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.



WHAT'S INSIDE

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LifeExtension® Magazine



7 200,000 AMERICANS DIE NEEDLESSLY EACH YEAR

The **Centers for Disease Control** report that nearly **200,000** needless deaths occur each year from vascular diseases. Life Extension points out that even more lives could be spared with vigilant annual blood testing.



30 WEIGHT LOSS BENEFITS OF LACTOFERRIN

Lactoferrin, with its immune boosting benefits, has been found to help **shed body fat** by inhibiting fat synthesis and stimulating liberation of stored body fat (*lipolysis*).



38 BLOOD TEST THAT MAY SAVE YOUR LIFE

Elevated **CRP** (C-reactive Protein) increases risk of heart attack, cancer, and diabetes. A low-cost blood test identifies those who should initiate steps to lower their CRP level.



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Researchers have discovered that **probiotics** promote not only healthy digestion but also protect against autoimmune disorders and metabolic syndrome, among others.



86 EXCLUSIVE CONFERENCE REPORT

At the **European Congress on Biogerontology**, scientists presented cutting-edge research on aging, such as longevity epigenetics, rejuvenation of the immune system, and calorie restriction.