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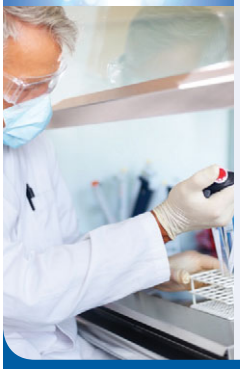
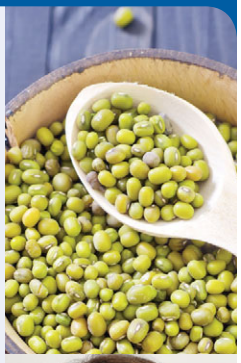
LIFE EXTENSION FILLS VOID IN GOVERNMENT FUNDING

Due to deep budget cuts, research scientists are finding it increasingly difficult to obtain **federal funding**. Rather than see vital projects fall by the wayside, the ***Life Extension Foundation***® has stepped in to provide new grants to scientists involved in promising fields of biomedical research. Seven of our recent grant recipients describe their work and its enormous potential for medical advancement.

DEPARTMENTS





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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]

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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.

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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 during **Super Sale**, the price is reduced to **$18.90** per bottle. If **10 bottles** are purchased during **Super Sale**, the cost is **$16.81** 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** [std. to 6.5% polyphenols (39 mg), 1.73% hydroxytyrosol/tyrosol (10.4 mg), 0.5% verbascoside/oleuropein (3 mg)]	**600 mg**
Sesame Seed Lignan Extract	**20 mg**

Item #01482

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

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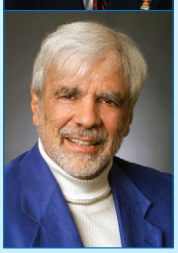

Jonathan V. Wright, MD, is medical director of the Tahoma Clinic in Renton, WA. He received his MD from the University of Michigan and has taught natural biochemical medical treatments since 1983. Dr. Wright pioneered the use of bioidentical estrogens and DHEA in daily medical practice. He has authored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

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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.

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The suggested dose of one capsule a day provides:	
Trans-Resveratrol	250 mg
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Quercetin	60 mg
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Fisetin	10 mg

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Outwitting Our Aging Brain

BY WILLIAM FALOON

We are zeroing in on a prime culprit behind **Alzheimer's**, **stroke**, and age-related **cognitive impairment**.

The term for this ***reversible*** disorder is "**hypoperfusion**." It means an inadequate supply of blood to a body part.

Hypoperfusion of the **brain** occurs in response to reduced **blood flow**. The result of **hypoperfusion** is a series of harmful changes that severely diminish ***neurological*** function.

We have long known about ***structural*** changes that adversely impact the aging brain. Preceding this structural deterioration, however, is a decline in microvascular **blood flow**.

What researchers are increasingly recognizing is that most aging humans suffer from ***obstructions*** to **cerebral blood flow** that result in chronic **hypoperfusion**.[1] This sets in motion a cascade of neuronal injuries that can manifest as **memory loss**,[2] **depression**,[3-6] and **cognitive dysfunction**.[7-9] The long-term impact of **hypoperfusion** is a higher risk of **stroke**,[10,11] **vascular dementia**,[12,13] and **Alzheimer's disease**.[14-16]

Life Extension® members will find comfort that their healthy lifestyle choices have been **proven** to help protect against **hypoperfusion**. We must never underestimate, however, the ***fragile*** nature of our aging **circulatory systems**.

This article represents a compilation of new findings that will profoundly change how ***neurodegenerative disease*** is viewed. It provides a rational basis to prevent and ***reverse*** the **circulatory deficits** that cripple and destroy our aging brains.

Don't Let Your Brain Shrink!

Normal aging is associated with diminished **blood flow** to the **brain**. This pathology is known as **hypoperfusion** and causes cell injury and death.[17]

Hypertension (high blood pressure) accelerates **brain atrophy** in humans.[18] It does this by damaging the **cerebral circulatory system** to the point that it cannot adequately transport blood.[19,20]

Blood vessels damaged by **hypertension** (and other factors) lose their ability to nourish cells, which can result in chronic **hypoperfusion** and loss of **brain function**.[20]

The combination of **hypertension** and **hypoperfusion** is associated with smaller **brain volume.**[18]

Once the cerebral vasculature is damaged, lowering blood pressure will not reverse ***brain shrinkage***, and shrinkage may continue despite successful blood pressure control.[20] The reason is that deformed and dysfunctional cerebral arteries may require ***higher*** blood pressure to avoid **hypoperfusion**.[19] In other words, in some people with cerebrovascular damage, higher blood pressure may be needed to "squeeze" blood into their brain. This "squeezing" process results in additional blood vessel damage and increased **stroke** risk.[19]

While **hypertension** is a significant cause of ***arterial damage*** and ***hypoperfusion***, aging humans have to do more than lower their blood pressure to reverse **hypoperfusion**.

Role Of Hypoperfusion In Alzheimer's Disease

Hypoperfusion is no longer a controversial aspect of **Alzheimer's disease**.[15,21]

Disrupted blood flow (**hypoperfusion**) is evident when Alzheimer's manifests in its initial stage as **mild cognitive impairment** all the way to full-blown **dementia**.[7,14-16,21]

Hypoperfusion is also evident in cognitively healthy persons at high-risk for developing Alzheimer's due to family history or genetic factors.[21]

Through the advent of advanced imaging technologies, it is now known that Alzheimer's disease is associated with both global and regional **cerebral hypoperfusion**.[21,22] Scientists have discovered that ***perfusion deficits*** in regions of the brain observed in Alzheimer's disease patients are also present in people at increased risk for Alzheimer's.[21]

While there is still debate as to whether decreased blood flow in Alzheimer's is a cause or consequence of the disease, **hypoperfusion** is definitively associated with both structural and functional changes in the Alzheimer's brain.[21]

Aging humans now have documented opportunities to aggressively explore treatments to prevent, or at least slow the progression of diseases like Alzheimer's and stroke by guarding against **hypoperfusion**, also known as **cerebrovascular insufficiency**.

Hypoperfusion Associated With Reduced Memory Function

Metabolic syndrome is a cluster of cardiovascular risk factors that is *also* associated with cognitive decline and dementia.[2]

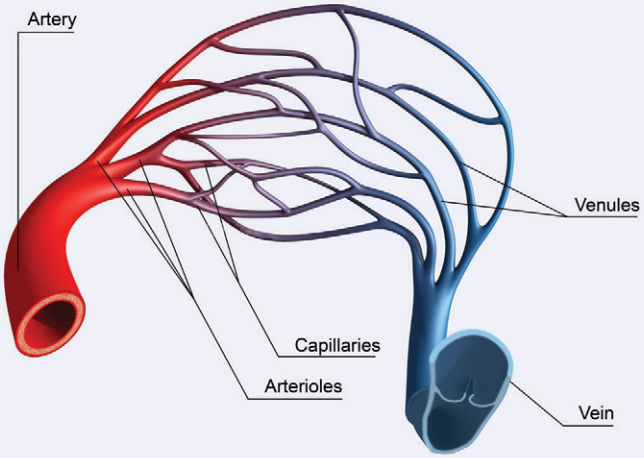
Common characteristics of **metabolic syndrome** include elevated **glucose**,[23] high **triglycerides**,[23] **insulin resistance**,[24] **abdominal obesity**,[23,24] **low testosterone** (in men),[25,26] and **hypertension**.[24]

A study of late middle-aged adults showed that mean **cerebral blood flow** was **15%** lower in those with metabolic syndrome compared to age-matched controls. The metabolic syndrome group also had lower immediate **memory** function. In this study, **abdominal obesity** and elevated **triglycerides** were most strongly associated with lower **cerebral blood flow** (hypoperfusion).[2]

Hypoperfusion Associated With Weakened Heart Function

A group of 211 men aged **68** went through a battery of tests to assess cognitive and cardiac function. These same men were tested **14 years** later.[44] Those with weakened hearts as measured on an echocardiogram and abnormal EKG patterns at baseline scored lower on verbal and speed-performance neurological tests. The doctors who conducted this study concluded that heart deficiencies in the study subjects were ***"associated with lower cognitive test results and may predict cognitive decline and silent cerebral perfusion abnormalities 14 years later."***[44]

Our "Tiny" Capillaries



With each heartbeat, blood is thrust into **arteries** that branch into smaller **arterioles** that branch further into **capillaries** where they deliver **oxygen** and **nutrients** to cells.[27] Even medically-educated individuals forget just how ***tiny*** capillaries that oxygenate our neurons really are.

A typical red blood cell is **6-10** micrometers, but capillary diameter is only **8-10** micrometers on average.[27,28] Capillaries are so narrow that red blood cells often have to ***bend their shape*** to squeeze through them.[29]

Platelets are usually **2-4** micrometers,[30] but anything that causes abnormal platelet clumping (thrombosis) creates a mass that cannot fit through thread-like capillaries.[31] This helps explain how ***precarious*** our aging cerebral vascular system is and how readily **hypoperfusion** develops via disrupted capillary beds.

Not only are capillaries tiny, but they are also extremely delicate. Instead of the tough layers that make up arteries, capillaries consist only of a single layer of **endothelial** cells lying on a basement membrane.[29,32] **Hypertension** destroys fragile capillaries leaving in its wake hypoperfused regions of the brain, often described as ***cerebral perfusion deficits***.[33]

Capillaries surround neurons and diffuse oxygen and nutrients into them.[33] Any interruption to capillary blood flow has the potential to injure or kill neurons.[33] This is why **hypoperfusion** must be **prevented** or **reversed** if we are to preserve our cognitive integrity.

Abnormal ***platelet aggregation*** increases as humans age, which explains why ***thrombosis*** is an increasing threat with aging.[34,35] Any blood particle larger than **5-10** micrometers can clog capillaries, and if enough capillaries become occluded in the brain, an ***ischemic stroke*** can occur.[33]

Risk factors in the blood that cause brain vasculature to become blocked include excess **homocysteine**,[36] **fibrinogen**,[37] **C-reactive protein**,[38] and **triglycerides**.[39] **Homocysteine** creates more havoc at the capillary level than it does in large blood vessels.[40] **Fibrinogen** promotes occlusive thrombosis.[41] **Inflammation**[42] damages the delicate endothelium, and **triglycerides** clog capillary beds.[43]

Maintaining capillary **integrity** is ***essential*** to prevent **hypoperfusion** and the **neurodegeneration** that invariably accompanies it. Most ***Life Extension*** members already take steps to guard their overall health, which confers tremendous benefits in sustaining capillary blood flow, thus protecting against **hypoperfusion**.

Another study found reduced **cerebral perfusion** in elderly men with abnormal EKGs and nighttime blood pressure dipping. The doctors who conducted this study concluded:

"Silent myocardial ischemia may contribute to cerebrovascular disease in non-demented elderly men. Cerebral perfusion seems to be most vulnerable to myocardial ischemia in elderly with nocturnal blood pressure dipping."[45]

These and other studies show that circulatory interruptions caused by even relatively mild cardiac disturbances deprive the brain of blood flow and result in cognitive impairments. So taking supplements like **coenzyme Q10**,[46] **lipoic acid**,[47] **carnitine**[48,49] and **PQQ**[50-53] not only help boost **cardiac output** to the brain, but also protect the brain and enhance mitochondrial energy production within **brain cells** (neurons).

Visualizing The Aging Brain

Advanced ***neuroimaging*** methods are enabling doctors to observe structural, functional, and biochemical changes in the brain, thus allowing earlier diagnosis of neurodegenerative diseases.[54]

A review of studies using enhanced neuroimaging techniques showed significant individual differences in the rate of **cerebral aging** (such as a decay of brain volume and reduction of blood flow) that accompanies loss of **cognitive function**.[54]

One neuroimaging study looked at degeneration in regions of the brain (frontal and temporal lobes) and their relationship with **hypoperfusion**. The researchers found worsening of frontal-temporal degeneration in response to lower **cerebral blood flow**. More severe **hypoperfusion** related to greater **functional deficit**.[55]

Preventing Progression To Senility

Mild cognitive impairment is considered an early stage of dementia. A group of researchers conducted a 3-year test and found the conversion rate from **mild cognitive impairment** to **dementia** was **11.65%** each year.[56]

They found that **cognitive decline** and **hypoperfusion** were related to diabetes, carotid stenosis, and changes in the white matter area of the brain. The researchers conducting this study concluded:

"... our findings could imply that controlling blood glucose, removing carotid stenosis, and improving cerebral perfusion could be effective measures to delay cognitive decline in patients with mild cognitive impairment and prevent conversion from mild cognitive impairment to dementia."[56]

Another study looked at structural alterations (such as amyloid beta deposition) and vascular organization in brains of aged monkeys and human Alzheimer's brain tissue. The findings suggest that ***amyloid plaque*** brain formation relates to multiple underlying pathologies that occur in partnership with **vascular** or **metabolic** deficit.[57] This data provides a mechanistic explanation for why senile plaques (as seen in Alzheimer's) are present preferentially near the cerebral vasculature, and the importance of guarding against **hypoperfusion**.

Tying This All Together

A review published in **2011** titled "***Cerebral microvascular pathology and neurodegeneration***" provided a meticulous description as to how ***cerebro-***

vascular dysfunction precedes and accompanies **cognitive impairment** and **senility**.[58] What made this report stand out was that it utilized a novel micropathology technique to permit viewing the cerebral vasculature in a 3-diminsional setting.

This **2011** review detailed how perilous our ***cerebral blood supply*** becomes with aging, describing tortuous arterioles that barely transport blood, obliterated capillary beds that no longer nourish neurons, and thickened veins that impede blood flow. It went on to describe how **hypoperfusion** occurs early in **Alzheimer's** and other degenerative brain disorders.[58]

Of interest was the demonstration of a decline in cerebral ***angiogenesis*** that precludes natural repair of vascular deficits—and the dangers of particles in the blood (such as circulating clots) that destroy capillary beds, all of which contribute to the ***hypoperfusion*** and other vascular deficits that underlie neurodegenerative disease.[58] This review is available in full text for members to read at www.lef.org/neuro.

An enormous volume of accumulated research reveals why virtually all aging humans suffer **cognitive impairment**, and why there are so many cases of crippling **stroke** and **dementia**.[58]

Aggressive intervention is clearly needed to protect our memories and very identities against the ***microvascular pathologies*** that have been accepted far too long as a hallmark of "normal" aging.

The encouraging news is that **nutrients, hormones**, and certain **drugs** that ***Life Extension*** members ***already*** take are proving more than ever to protect against ***cerebral circulatory deficits*** that occur in the aging brain.

Reversing Brain Damage In Former NFL Players

Brain injuries are common in professional **football players** and severe cases sometimes make headline news stories.[59-62]

A clinical trial was conducted on 30 retired NFL players who demonstrated brain damage and cognitive impairment. They underwent baseline testing of **cognitive function** and **brain perfusion** as measured by **SPECT** imaging.[63]

Participants were encouraged to lose weight (if appropriate) and take the following supplements for six months:

Fish oil[64-66]	**1,720 mg EPA** **1,160 mg DHA**
Vinpocetine[67-72]	**15 mg**
Ginkgo extract[73-78]	**120 mg**
Alpha Lipoic Acid[79-82]	**300 mg**
Acetyl L-Carnitine[80,83-85]	**1,000 mg**
Huperzine A[86-88]	**150 mcg**
N-acetyl-cysteine[89-93]	**600 mg**
High-potency multivitamin[94,95]	

The rationale behind using these nutrients was that they were individually shown to enhance blood flow, protect against free radicals, enhance brain cell membrane structure, boost acetylcholine, enhance neuronal metabolic activity, and reduce chronic inflammatory markers.

After six months, the tests were repeated. There were statistically significant increases in scores of attention, memory, reasoning, information processing speed, and accuracy in these retired NFL players. The SPECT scan showed increased **perfusion** in areas throughout much of the brain. The researchers who conducted this trial concluded:

"This study demonstrates that cognitive and cerebral blood flow improvements are possible in this group with multiple interventions."[63]

Neurological trauma during football events accelerates brain aging. ***Life Extension*** members should be gratified to know that they have been taking most, if not all of the nutrients shown in this study to reverse **brain damage** in retired NFL players. This brain damage clearly linked **hypoperfusion** with **cognitive impairment**.

Vinpocetine Reverses Cerebral Hypoperfusion

European doctors prescribe a periwinkle-originated drug called **vinpocetine** to patients suffering from cognitive problems ranging from short-term memory loss to Alzheimer's dementia.

Vinpocetine exerts several anti-aging mechanisms, but its most profound effect may be its ability to interfere with processes associated with **chronic cerebral hypoperfusion**.[103] The diverse mechanisms of **vinpocetine** explain its beneficial effects on clinical signs and symptoms of **cerebrovascular insufficiency**.

Life Extension has long been familiar with **vinpocetine** and has recommended it since the **1980s**. The **FDA** tried to shut down our organization and incarcerate me for doing this. The FDA's rationale was that vinpocetine was not an approved medicinal in the United States, even though it was safely and effectively being prescribed in Europe.

Fortunately, **vinpocetine** is now sold as a **dietary supplement** at a fraction of the price it would cost as an FDA-approved prescription drug. ***Life Extension*** members have obtained optimal daily doses of **vinpocetine** for the past three decades in a popular brain boosting formula they take.

Exercise Reverses Brain Decay

Several human studies show that *aerobic exercise* increases the size of the cognitive centers of the brain and improves memory.[104,105]

One study showed that 1-2 years of aerobic exercise increased hippocampal volume

Hypoperfusion Facilitates Alzheimer's Disease

For years, neuroscientists have attributed **Alzheimer's disease** to ***structural*** malformations observed in the brains of Alzheimer's patients.[96] Terms used to describe these Alzheimer's alterations include ***beta-amyloid plaque*** and ***neurofibrillary tangles***.

Newer findings, however, link **hypoperfusion** to the formation and progression of these Alzheimer's malformations. One recent human study found cerebral blood flow to be **20%** lower in Alzheimer's patients compared to a similar aged group with normal cognitive function.[97] This correlates with other research showing that cerebral blood flow is decreased in Alzheimer's patients.[14-16]

Mild cognitive impairment is the transitional clinical stage between loss of cognition in normal aging and severe dementia. Both Alzheimer's disease and mild cognitive impairment have been linked to abnormalities in **brain perfusion**.[98]

A study evaluated brain perfusion in patients with mild Alzheimer's dementia and patients with mild cognitive impairment, and compared them to cognitively healthy elderly controls. The researchers found lower ***cerebral perfusion*** throughout many regions of the brain in patients with **mild cognitive impairment** and **Alzheimer's** and suggested that evaluating ***cerebral perfusion*** might better diagnose those with serious neurological impairment.[99]

In an intriguing study that shatters conventional wisdom, researchers identified elderly people that had significant amounts of ***beta-amyloid plaque*** and ***neurofibrillary tangles***, but were not demented. The researchers compared these non-demented individuals to Alzheimer's patients. The difference was the amount of ***amyloid plaque*** found in the **vasculature** was almost **2-fold higher** in the Alzheimer's patients. This led the scientists to conclude that in addition to Alzheimer's structural abnormalities, "***vascular integrity must play an important role in cognitive failure***."[100]

Another study performed mental tests and brain perfusion tests (SPECT scans) on **normal** elderly individuals, those with **mild cognitive impairment**, and those with **Alzheimer's** patients. Over a two-year period, there was a worsening of the mental test scores in the two cognitively dysfunctional groups. In the **mild cognitive impairment** and **Alzheimer's** groups, ***cerebral perfusion*** fell in the left ***postsubicular*** area of the brain.[101] The postsubicular region is necessary for the recognition of familiar environments, and is required for the formation of new object–place associations that support recognition memory.[102]

This study showed that **Alzheimer's** patients had extensive **cerebral perfusion** reductions. Worsening of mental test scores was related to decreased **perfusion** in multiple regions of the brain (bilateral middle, posterior cingulate, left frontal, temporal and parietal areas, and postsubicular area).[101]

This corroborates other studies that correlate **cerebral hypoperfusion** with diagnosis of **Alzheimer's disease**.

by **2%**, which was accompanied by improved memory function.[104] Considering hippocampal volume often shrinks with aging, this improvement in size should be viewed as substantial.

A review of several studies showed better physical fitness to be associated with improved cognitive functioning. This review showed that beneficial mechanisms behind the effect of exercise on cognitive health were *"**increases in brain perfusion and the ability of cerebral blood vessels to respond to demand**."*[105]

Green Tea Inhibits Hypoperfusion Damage

Cerebral **hypoperfusion** results in **oxidative stress** that leads to neurodegenerative disease.

Health conscious people today take ***antioxidant*** supplements to protect against free radicals and the oxidative damage they inflict.

A study was done on rats where experimental cerebral **hypoperfusion** was induced and the effects of **green tea extract** evaluated.[106] The scientists wanted to see if two different doses of green tea polyphenols over a 4-8 week time period could prevent cognitive deficits and the oxidative brain cell damage that occurs in response to **hypoperfusion**.

High-dose **green tea extract** was found to scavenge oxygen free radicals, enhance antioxidant potential, decrease lipid peroxide production, and reduce oxidative DNA damage. The high-dose group had better spatial learning and memory than saline-treated rats. These beneficial effects, however, were not found in the lower-dose group.[106]

The human equivalent amount of **green tea extract** in the **high-dose** group would be about **4,800 mg/day**. The low dose human equivalent amount would be **1,200 mg** of **green tea extract** daily.

The first supplement I take upon wakening is a **725 mg green tea extract** capsule. There's no particular reason for this, but since I don't drink coffee or tea regularly, it seems to make sense to swallow a tea extract capsule when my day starts. To emulate this rat study, I would have to swallow six of these green tea extract capsules.

I do not believe, however, that I or most of our members need to take anywhere near this high dose of green tea. That's because we take so many other antioxidants like **gamma tocopherol**,[107] **astaxanthin**,[108,109] **benfotiamine**,[110] **PQQ**,[53,111] **lipoic acid,**[112,113] and **carnosine**[114,115] that are proven to guard against oxidative stress in the brain.

So I will continue my one green tea extract capsule each morning and rely on the many other **antioxidants** I take to suppress the free radicals that are inevitably generated in my 59-year-old brain.

New Way To Protect Against Brain Aging

Proven methods exist to help reverse **hypoperfusion** and better oxygenate our brain.[63] That alone, however, will not fully restore youthful cerebral functions. Additional pathologic mechanisms underlie **age-associated mental impairment**.[54] These damaging factors should all be corrected if we are to achieve meaningful ***improvement*** in our **thinking ability**.

It is refreshing to know that studies are documenting the brain benefits of **fish oil**,[116] **carnitine**,[80] **lipoic acid**,[80,84] **vinpocetine**,[70,103,117-119] and other nutrients Life Extension members have long used.

What's needed now is something to fill "missing gaps" that enable degenerative aging processes to destroy our precious neurons.

A solution has been found in an extract from an Oriental orchid called ***Gastrodia elata***, which is used in **China** to treat neurological disorders,[120] just as **vinpocetine** is prescribed in **Europe** for conditions relating to **hypoperfusion**.[121]

Gastrodia acts as a *"**brain shield**,"* calming neurons and protecting them from oxidant,[122,123] inflammatory,[120,124-127] and excitatory damage[122,128-137] associated with **hypoperfusion** and **stroke**.[122,136-142] As a result, Gastrodia helps prevent cognitive decline and memory loss.[123,125,143-147]

As you'll read, ***Gastrodia*** has even been shown to protect against cognitive impairment inflicted during heart bypass surgery.

Surgery-Induced Hypoperfusion

Each year, hundreds of thousands of Americans undergo heart surgery that requires that they be placed on a heart-lung machine.[148] A tragic side effect to this procedure is that it can cause capillary blockage in the brain that leads to **hypoperfusion** and severe ***cognitive deficits***.[149]

Scientists have recently uncovered a unique reason why this occurs. During heart surgery, blood bleeding from surgical wounds is suctioned up into the cardio-pulmonary circuit of the heart-lung machine and then reintroduced into the patient.[58]

This suctioned blood is laden with **lipids** (fats), especially from the **sternal bone marrow** in the chest that has to be cut through to gain access to the heart. These

lipid globules slip by the normal filters of the heart-lung machine and travel to the **brain** where they become lodged in capillaries as ***microemboli***.[58]

While some of these **microemboli** pass through the brain in a few hours or days, some remain impacted for weeks or longer.[58] These microemboli block capillary blood flow, causing **hypoperfusion** and eventual death to affected brain cells.

A novel method of protecting the brain against this type of **hypoperfusion** is to run suctioned blood through a special device called a *"**cell saver**"* that cleanses blood of lipids as it separates out red cells. This technique has been documented in experimental models to improve surgical outcomes.[58]

Some surgical patients undergo accelerated cognitive declines that can continue **3-5 years** after heart surgeries and can lead to dementia.[58,150] It is thus well worth implementing multiple strategies to protect against the **hypoperfusion** that results when **lipid globules** rapidly release into the bloodstream.

Gastrodia Extract Proven Under Toughest Conditions

A study of 200 cardiac surgery patients was done where prior to surgery, half the group was administered ***Gastrodia extract*** intravenously and the other half a placebo.[151] Five different areas of cognitive function were measured before surgery began.

After the surgery and just prior to being discharged from the hospital, **42%** of the placebo patients had a deficit in at least one area of cognitive measurement, which is about the standard number expected. In the group given ***Gastrodia extract***, however, only **9%** showed any evidence of cognitive impairment.[151]

A three-month follow-up evaluation showed that **31%** of the **placebo** arm still had at least one cognitive deficit, as opposed to only **6%** of patients given ***Gastrodia***.[151] This follow-up reveals how long cognitive deficits persist in patients undergoing heart surgery and the statistically and clinically significant protection conferred by ***Gastrodia extract***.

The kind of brain injury suffered during cardiac surgery is analogous to accelerated aging, though much worse in some ways. That's because the sudden release of ***lipid globules*** is not a natural event that your body has a defense against. The most common natural type of emboli comes from **blood clots** that break lose inside blood vessels. Your body has enzymes that may dissolve these tiny blood clots, but not necessarily the lipid globules released during certain surgeries. While surgery-induced capillary impaction occurs acutely, its effects may persist indefinitely as chronically ***hypoperfused*** areas of the brain slowly die.[58]

The ability of ***Gastrodia*** to protect humans undergoing this massive attack of **lipid** (fat) globules signifies a tremendous ability of this ***orchid extract*** to protect against "normal" pathologies in the aging brain. These include inflammation, excitotoxicity, oxidation, hypoperfusion, and structural changes in neurons.[120,122-137] The science, in fact, shows that ***Gastrodia*** provides a virtual "shield" against the most common causes of brain aging.

Gastrodia extract has been added to the most popular formula ***Life Extension*** members take to protect and enhance their neurological functions. It's also available as a stand-alone supplement.

Our "Fragile" Aging Brains

The most important organ in our body is also the most ***fragile***.

Stroke is a leading cause of death in the United States.[152] **Alzheimer's** incidence is spiraling upwards.[153] Both are related to **hypoperfusion**, as is the ***mental slowdown*** that aging people encounter.

We will soon be publishing an article on a disease that virtually none of you knew existed. This disease (leukoaraiosis) involves deleterious changes in the brain's vital white matter where transmission of nerve impulses enables one part of the brain to communicate with other parts of the brain.[154] Enhanced imaging technologies are enabling doctors to identify this cognitive-robbing disorder in huge numbers of aging individuals.[154,155] It shouldn't surprise you to learn that an underlying culprit behind this white matter disorder is **hypoperfusion**.[154] This means all the good steps you are taking to protect against known brain disorders may also shield you against this new one.

We're also going to discuss the science behind keeping one's overall neurological function in the most youthful condition possible, such as ***exercising your brain*** by reading articles like this that inundate you with new information.

An achievable New Year's resolution is to take ***assertive*** steps to improve your cognitive function while slashing your risk of neurodegenerative disease. This article has provided practical steps that can be initiated immediately, including adding ***Gastrodia*** to one's daily supplement program.

Time Of Year To Stock Up On Life-Saving Supplements

Once a year, we **discount** all of our cutting-edge formulas so that our members can stock up at **extra-low prices**.

We hope you'll take advantage of this year's **Super Sale** to obtain premium-grade supplements to protect your health today, while helping to support **biomedical research** aimed at achieving unprecedented life span extensions.

In **2012**, Life Extension spent a record **$14.6 million** on some of the world's most ambitious projects to halt aging and eliminate premature death. In this issue, we describe recent grants made to pioneering young scientists. These aggressive research programs are only made possible through the generous support of our many members.

I cannot tell you how much your support through product purchases is needed and appreciated to battle inept bureaucrats who would prefer our non-profit research foundation cease to exist.

Until **February 3, 2014**, members take advantage of **Super Sale** discounts to stock up on cutting-edge formulas designed to circumvent aging processes (including **loss of neurological function**) that used to be considered inevitable consequences of living too long!

For longer life,

William Faloon

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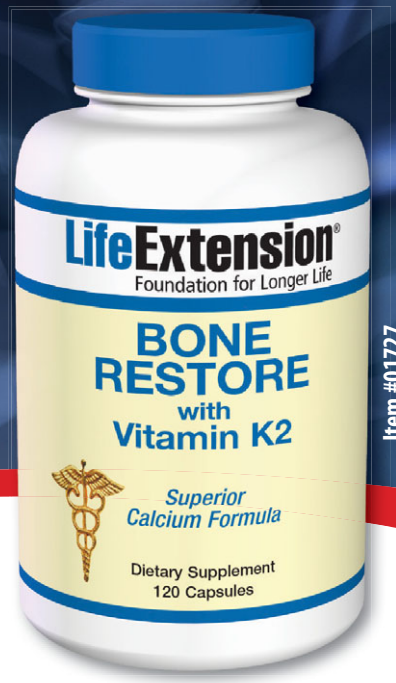
BONE RESTORE

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).

Bone Restore now contains **300 mg** of **magnesium**.

The retail price for 120 capsules of **Bone Restore** is $24. If a member buys four bottles during **Super Sale**, the price is reduced to **$14.85** 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 during **Super Sale**, the price is reduced to **$12.83** 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**.

Fruitex B® and OsteoBoron® are registered trademarks of VDF Futureceuticals, Inc. U.S. patent #5,962,049.

DimaCal® and TRAACS® are registered trademarks of Albion Laboratories, Inc. Malate is covered by U.S. Patent 6,706,904 and patents pending.

To order Bone Restore, call 1-800-544-4440 or visit www.LifeExtension.com

THE NEW...

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The Ultimate Protection for your Brain–

now with Gastrodin/Brain Shield™

Brain decline affects all aging humans. Scientific studies demonstrate more ***youthful*** cognition and memory in response to the proper nutrients. **Cognitex®** provides the following **brain boosting** ingredients in one advanced formula:

Gastrodin acts as a "brain shield," calming brain cells and helping to protect against oxidant, inflammatory, and excitatory damage. **Gastrodin's** multiple modes of action work together with other nutrients to improve circulation and shield the brain from age-related insults.

Alpha-glyceryl phosphoryl choline boosts levels of ***acetylcholine***; a neurotransmitter that enables brain cells to communicate. **Acetylcholine** is intimately involved in memory and learning. Acetylcholine levels markedly decline as humans age past 30.

Vinpocetine enhances circulation, oxygenation, electrical conductivity of brain cells, and helps support healthy blood flow.

Pregnenolone is a hormone involved in synchronization of brain cells that declines in normal aging brains.

Hops and **rosemary** have all been shown to help suppress inflammatory cytokines.

ITEM # 01897

Wild blueberry extract has been shown to inhibit oxidative and inflammatory changes in brain cells believed to be involved in memory decline.

The ability of **phosphatidylserine** (PS) to improve cognitive skills has been extensively studied. PS exerts significant benefit for cognition, especially those functions that tend to decline with age, including memory, learning, vocabulary skills, and concentration.

Ashwagandha inhibits an enzyme (*acetylcholinesterase)* that breaks down ***acetylcholine*** in the brain.

Grape seed extract improves blood vessel tone and elasticity, thus boosting cerebral oxygen flow.

Uridine-5'–monophosphate is a compound naturally found in the milk of nursing mothers and is essential to humans when brains are the youngest. UMP also supports superior cognitive function in aging adults.

MOST ADVANCED NEUROLOGICAL FORMULA AT NEW LOWER PRICES

The ingredients in **Cognitex®** sell for a small fortune in **Europe** where they are commonly prescribed. You can obtain them all at a fraction of this cost in the comprehensive **Cognitex®** nutrient formula for the brain.

A wide range of **gastrodin** doses have shown protective and supportive effects on neurovascular function, in particular in the context of neurovascular inflammation. One pre-clinical study using a well-validated model showed improved memory consolidation and retrieval in chemically impaired rats using a human equivalent dose of **50 mg** daily. This **50 mg** dose, when combined with nutrients that function via some of the same mechanisms as **gastrodin** may be sufficient to derive results in aging humans.* **Gastrodin** is also available in **300 mg** capsules.

The retail price for 90 softgels of **Cognitex® with Brain Shield™** is $62 **(Item# 01897)**. If a member buys four bottles during **Super Sale**, the price per bottle is **$35.78**. If eight bottles are purchased during **Super Sale**, the cost per bottle drops to **$33.75**. Cognitex® is also available without pregnenolone at a slightly lower price. **Contains soy.**

**J Ethnopharmacol.* 1997;56:45-54.
References for most can be found at: http://www.lef.org/magazine/mag2007/feb2007_report_cognitex_03.htm

Just three softgels of Cognitex® provide the following nutrients:

Alpha-Glyceryl Phosphoryl Choline (A-GPC)	600 mg
Phosphatidylserine (from Sharp-PS®)	100 mg
Brain Shield™ (Gastrodin)	50 mg
Vinpocetine	20 mg
Grape Seed Extract	150 mg
Wild Blueberry Extract *(Vaccinium angustifolium)*	150 mg
Sensoril® Ashwagandha Extract *(Withania somnifera)*	125 mg
Uridine-5'-Monophosphate (disodium)	50 mg
Proprietary NeuroProtection Complex Blend Perluxan® Hops Extract *(Humulus lupulus)* Rosemary *(Rosmarinus officinalis)* Extract	125 mg
Pregnenolone	50 mg

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

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 prostaglandin 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]

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 (Boswellia serrata) **extract** (gum resin) [providing 14 mg AKBA1]	**70 mg**
Proprietary Enterolactone Precursors Blend [HMRlignan™ Norway spruce (Picea abies) (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-ß-boswellic acid

A bottle of 60 softgels of **Ultra Natural Prostate** retails for **$38**. If a member buys four bottles during **Super Sale**, the price is reduced to **$23.63** per bottle. **Contains soybeans.**

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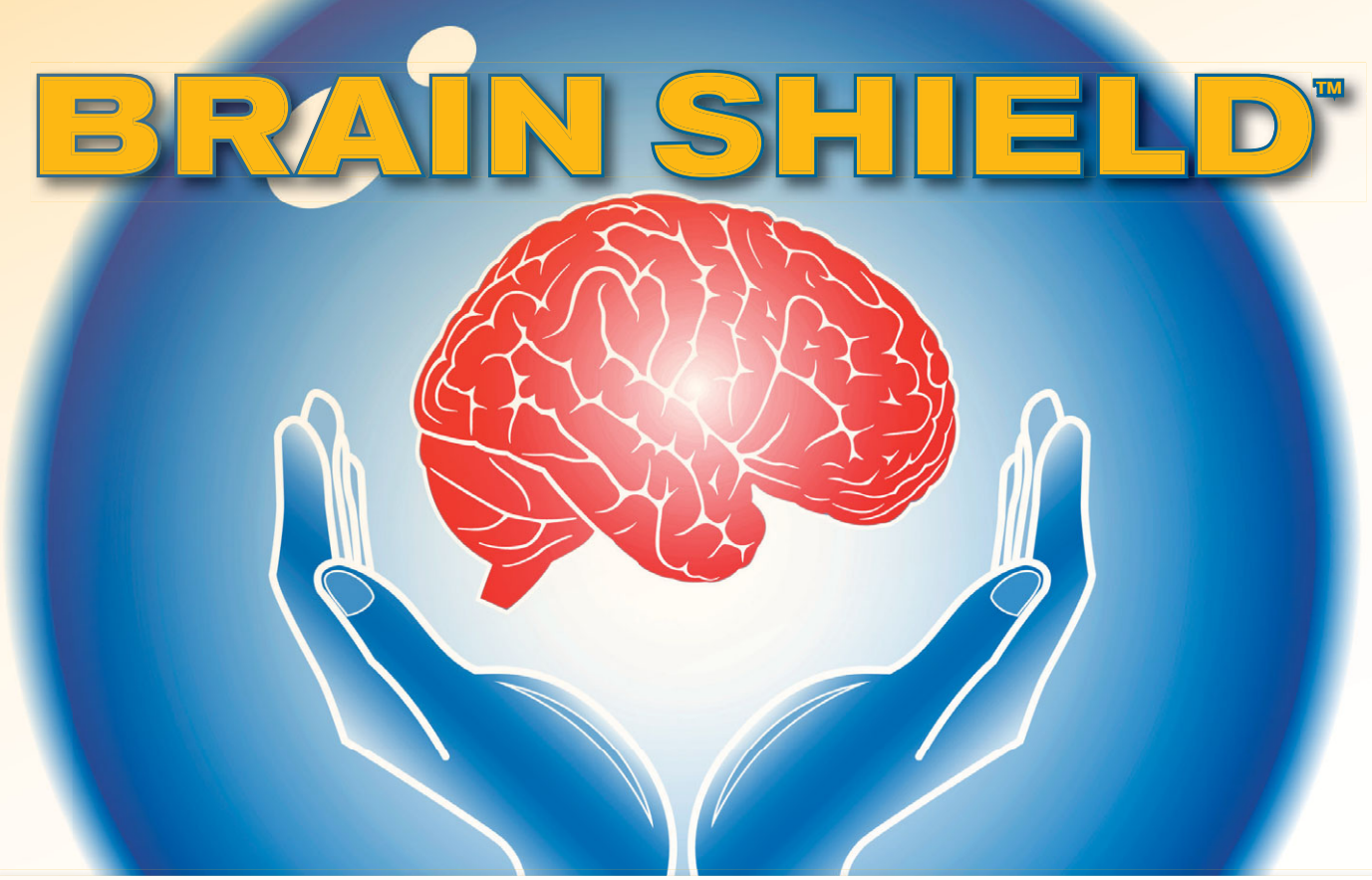
To order Ultra Natural Prostate, call 1-800-544-4440 or visit www.LifeExtension.com

BRAIN SHIELD™



SUPPORT for COGNITIVE FUNCTION with AGING

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

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

Scientists in China and Singapore have found that **gastrodin**, a compound typically derived from a traditional Chinese orchid (*Gastrodia elata*), provides powerful support for the brain's normal defenses and regenerative mechanisms.[4-7]

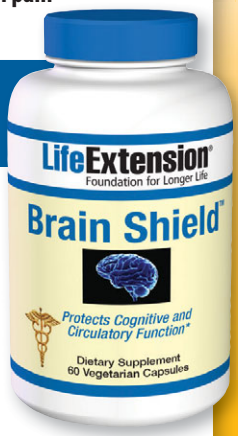
To make these benefits available to members, **Life Extension**® introduces **Brain Shield**™, providing **300 mg** of **gastrodin** in each capsule for *maximum* brain support.

MULTI-FACTORIAL BENEFITS!

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

- To retain normal function, the aging brain relies on adequate **blood flow** to get sufficient oxygen and fuel.[8] It has been repeatedly shown that formulas containing **gastrodin** beneficially support normal, healthy levels of brain blood flow in both animals and in humans.[6,7]
- The body maintains a delicate balance of **neurotransmitters,** such as GABA, which is of tremendous importance to healthy brain function. Studies show that alone or in combination the active compounds in **gastrodin** help maintain healthy levels of vital neurotransmitters in those whose levels are already within the normal range.[9-11]
- With aging, short-term **memory** function is often impaired. Studies show that **gastrodin** and its active constituents help support the healthy body's normal defenses against the mild memory problems associated with aging.[12]
- Scientists have shown that the breakdown metabolites of **gastrodin** help provide support against the normal stress and tension of daily life.[13,14]
- And **Brain Shield**™ helps alleviate the occasional **cranial pain** associated with daily life.[15]

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



Item # 01802

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

A bottle of 60 **300 mg** vegetarian capsules of **Brain Shield**™ retails for $33. If a member buys four bottles during **Super Sale**, the price is reduced to **$20.25** per bottle.

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To order **Life Extension® Brain Shield™**, call **1-800-544-4440** or visit **www.LifeExtension.com**

NEW Winter Wellness™

Primes Immune Response at Super LOW Cost

Every **winter**, human immune systems are overworked as they provide essential defense against **seasonal** challenges—*especially the immune systems of the elderly and very young*.[1-4]

A crucial part of this protection comes from the immune system's production of new antibodies when the ***new*** winter season's pathogens are first introduced, which boosts the body's preparedness for upcoming challenges during peak winter outbreaks.[5]

In a remarkable discovery, the amino acids in **Winter Wellness™** have been shown to *work together* to **prime** the immune system to optimize immune responsiveness.[4,6-8]

Taken daily, they support the host immune system's primary defenders by enhancing the function of key immune cells to generate antibodies and naturally *prime* readiness—especially when taken at least **two weeks prior** to the first pre-season exposure to the winter's new antigen challenges.[4,6,7]

Optimized Immune Responsiveness to New Winter Challenges

L-theanine is a distinctive amino acid typically found almost exclusively in tea leaves.[8] **L-cystine** is an amino acid synthesized by the body from the cysteine molecules found in many plant and animal food sources.[9] Scientists have found that L-theanine and L-cystine have potent, complementary effects on immune responsiveness.[6,7]

Now combined in the next-generation, immune-supporting product **Winter Wellness™**, L-theanine and L-cystine promote the natural enhancement in responsiveness that follows pre-season **antigen-exposure** by:

- Helping to enhance *gamma delta T cells*, ensuring an optimum state of readiness to respond through secretion of *interleukin-2*—a powerful immune regulator.[6]
- Supporting the release of immune system proteins that coordinate interactions between *T cells* and *antibodies*—further promoting immune responsiveness.[10]
- Contributing to the synthesis of *glutathione*—a potent endogenous antioxidant—that has a marked effect on immune function.[4,11]

Scientific data supports that when these potent amino acids are used **together**, they support an enhanced post-exposure immune response.[4,6-8]

Clinically Validated Antibody Support

A double-blind, placebo-controlled clinical trial on humans found that the two amino acids in **Winter Wellness™** significantly promoted antigen responsiveness.[6]

A group of nursing home residents over age 65 were co-administered **280 milligrams** of *L-theanine* and **700 milligrams** of *L-cystine* once daily for 14 days. After controlled exposure to several new winter antigens on the 15th day, the scientists found that for certain groups, supplementation resulted in an increased rate of ***seroconversion***—the point at which the immune system first develops **antibody protection** against a microorganism as a *result* of new antigen exposure.[6]

Winter Wellness™ powerfully *primes* the immune system against seasonal winter challenges.

The suggested daily dosage of two capsules of **Life Extension® Winter Wellness™**, or as recommended by a healthcare practitioner, provides:

L-Cystine	**700 mg**
L-Theanine	**280 mg**

Item# 01739

Low-Cost Ingredients

A bottle of 60 capsules of **Life Extension® Winter Wellness™** retails for $15. If a member buys four bottles during **Super Sale**, the price is reduced to **$8.78** per bottle.

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To order Life Extension® Winter Wellness™, call 1-800-544-4440 or visit www.LifeExtension.com

IN THE NEWS

Elevated Glucose Levels Risk Factor For Dementia

A recent study in the *New England Journal of Medicine* measured glucose and hemoglobin A1c levels from over 2,000 participants without dementia to examine the relationship between glucose and future risk of dementia.*

Participants were from a study that included 839 men and 1,228 women whose mean age at baseline was 76 years; 232 participants had diabetes, and 1,835 did not. During a median follow-up of 6.8 years, dementia developed in 524 participants. Among participants without diabetes, higher average glucose levels within the preceding 5 years were related to an increased risk of dementia. Diabetics with higher average glucose levels were also related to an increased risk of dementia.

The study, funded by the National Institutes of Health, concluded that, ***"Higher glucose levels may be a risk factor for dementia, even among persons without diabetes."***

—M. Richmond

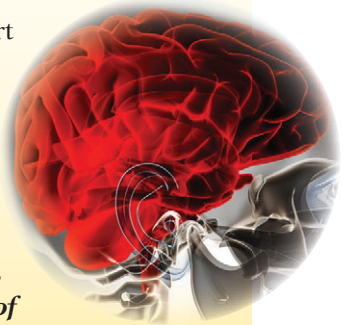
* *N Engl J Med.* 2013;369:540-8.

Healthy Brains Associated With High Levels Of Omega-3s

A recent issue of the *Journal of the American Heart Association* features a report by Finnish researchers that associates higher omega-3 fatty acid levels with healthier brains. The background of the study, performed at the University of Eastern Finland, is that the consumption of tuna or other broiled or baked fish, but not fried fish, is linked to fewer subclinical brain abnormalities on magnetic resonance imaging (MRI).*

The team investigated the association between plasma phospholipid omega-3 fatty acids, objective biomarkers of exposure, and subclinical brain abnormalities on MRI.

In the community-based Cardiovascular Health Study, 3,660 participants aged 65 or younger underwent brain MRI in 1992-1994, and 2,313 were rescanned 5 years later.



The conclusion of the report stated that, ***"Among older adults, higher phospholipid long-chain omega-3 PUFA content was associated with lower prevalence of subclinical infarcts and better white matter grade on MRI. Our results support the beneficial effects of fish consumption, the major source of long-chain omega-3 PUFAs, on brain health in later life."***

—M. Richmond

* Available at: http://jaha.ahajournals.org/content/2/5/e000305.full Accessed October 25, 2013.

Vitamin D Therapy Associated With Lower Risk Of Mortality Among Kidney Disease Patients

BMC Nephrology published the results of a meta-analysis of kidney disease patients, which found an association between supplementation with active forms of vitamin D and a lower risk of dying over follow-up.*

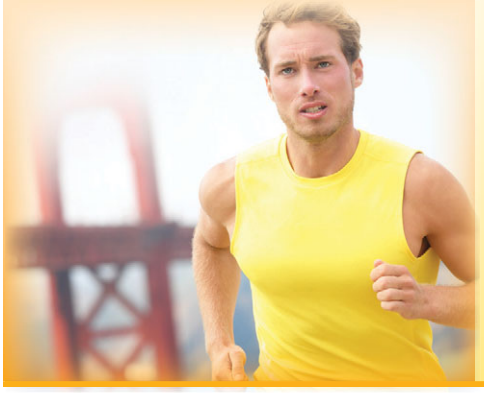
For their analysis, researchers selected 17 studies involving a total of 489,254 end stage renal disease patients receiving dialysis and three studies that included 2,603 chronic kidney patients not on dialysis. Subjects were treated with active vitamin D sterols that included alfacalcidol, doxercalciferol, calcitriol, maxacalcitol, falecalcitriol, or paricalcitol. Follow-up periods ranged from 12 to 140 months.

In comparison with no treatment, subjects who received active vitamin D compounds had an up to **39%** lower risk of dying from all causes over follow-up. Pooled analysis of dialysis patients associated active vitamin D therapy with a **20%** lower adjusted risk of dying, and among those not on dialysis, the risk was **41%** lower.

Editor's Note: When cardiovascular mortality was examined, active vitamin D was associated with a **41%** lower adjusted risk of death over follow-up.

—D. Dye

* *BMC Nephrol*. 2013 Sep 25;14(1):199.



Brain Plaque Associated With Hardened Arteries In Elderly Individuals

In an online issue of *Neurology,* the medical journal of the *American Academy of Neurology*, a study was recently published indicating that aging individuals with hardened arteries are more likely to have brain plaques associated with Alzheimer's disease—even if the person does not have any signs of dementia.*

The study involved 91 people with an average age of 87 who did not have dementia. Researchers took scans of the participants' brains to measure any plaques in the brain. The amount of stiffness in the participants' arteries was measured about two years later. Half of all participants had beta-amyloid plaques. People with beta-amyloid plaques were more likely to have high systolic blood pressure, higher average blood pressure, and higher arterial stiffness as measured with the brachial-ankle method.

"This study adds to growing evidence that hardening of the arteries is associated with cerebrovascular disease that does not show symptoms. Now we can add Alzheimer's type lesions to the list," study author Timothy M. Hughes, PhD, of the University of Pittsburgh, said.

—M. Richmond

* Available at: http://www.aan.com/PressRoom/Home/PressRelease/1214. Accessed October 25, 2013

Higher Magnesium Intake Associated With Reduced Risk Of Metabolic Impairment

In the journal *Diabetes Care*, researchers report an association between greater magnesium intake and a lower risk of developing diabetes over a 6.9 year average period.*

The study included 2,582 men and women enrolled in the Framingham Heart Study Offspring cohort. Between 1991 and 1995, the subjects participated in examinations that included glucose tolerance testing and dietary assessment, and were followed through 1998 to 2001, when they were re-examined.

Thirty-six percent of the participants were classified as having metabolic impairment, defined as impaired fasting glucose, impaired glucose tolerance, insulin resistance or hyperinsulinemia, at the time of the 1991-1995 examinations. Among those without the condition, **18%** developed metabolic impairment by the end of follow-up. Those without metabolic impairment whose magnesium intake from food and supplements was among the top one-fifth of participants had a **37%** lower risk of becoming impaired over follow-up compared with those whose intake was among the lowest fifth.

Editor's Note: In those classified as metabolically impaired at baseline, **16.6%** became diabetic by the end of follow-up. Having a magnesium intake that was among the highest fifth lowered the risk of developing diabetes in this group by **32%** in comparison with an intake that was lowest. When the entire study population was considered, those whose magnesium intake was highest had approximately **half the risk** of becoming diabetic over follow-up than subjects whose intake was lowest.

—D. Dye

* *Diabetes Care*. 2013 Oct 2.

Higher Vitamin D Levels Correlated With Improved Breast Cancer Prognosis

An article published in *Breast Cancer Research and Treatment* reports the results of a meta-analysis which found an association between higher serum levels of vitamin D and better prognosis for women with early stage breast cancer.*

For their analysis, Pamela J. Goodwin of the University of Toronto and her colleagues selected eight studies involving a total of 5,691 women diagnosed with breast cancer. Blood samples were collected, on average, within 90 days of diagnosis or shortly before treatment. Deficient levels of vitamin D were uncovered in **36.8%** of the subjects. When the lowest versus highest categories of serum vitamin D were compared in a pooled analysis, women whose levels were low had a risk of recurrence that was more than double that of subjects whose levels were high and a risk of death that was **76%** higher.

Editor's Note: The authors remark that vitamin D, when activated, can alter the transcription and expression of specific genes, resulting in growth arrest, apoptosis, aromatase suppression, decreased inflammation, and inhibition of angiogenesis, invasion and metastasis, all of which help combat cancer.

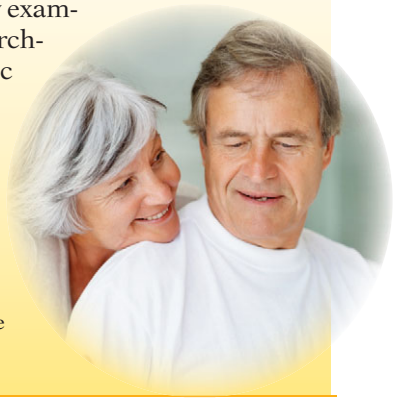
—D. Dye

* *Breast Cancer Res Treat*. 2013 Oct; 141(3):331-9.

Folic Acid Associated With Lower Heart Disease Risk In Kidney Disease Patients

In the journal *Clinical Nutrition*, researchers report the findings of a meta-analysis of randomized trials of folic acid supplementation in men and women with kidney disease, which concluded that treatment with the vitamin may help reduce the risk of cardiovascular disease, which is increased in this population.*

Xiaobin Wang and colleagues selected nine randomized trials for their analysis that examined the relationship between folic acid therapy and cardiovascular disease. Pooled analysis of the 8,234 subjects found a **10%** lower risk of cardiovascular disease among those who received the vitamin in comparison with those who did not receive it. When trials involving patients who did not consume grains fortified with folic acid were separately examined, the risk was further reduced. The researchers also uncovered a greater benefit for folic acid supplementation in trials involving patients with advanced or end-stage disease, or which had a lower percentage of diabetics upon enrollment.



Editor's Note: Folic acid is a B vitamin that helps reduce homocysteine which, when elevated, increases cardiovascular disease risk. Those with renal impairment suffer higher homocysteine levels.

—D. Dye

* *Clin Nutr*. 2013 Oct;32(5):722-7.

Delaying Aging Predicted To Increase Years Spent In Good Health

The journal *Health Affairs* published a study by researchers at the University of Southern California, Harvard University, and other institutions, which concluded that delaying aging would be a better way to reduce disability than focusing on specific disease therapies.*

By employing a microsimulation of the future health and spending of older men and women, Dana Goldman and colleagues compared disease-specific scenarios with a delayed aging scenario. The team determined that delayed aging could add 2.2 years spent primarily in good health to average life expectancy, while addressing separate diseases would result in lesser improvements in health and longevity.

"In the last half-century, major life expectancy gains were driven by finding ways to reduce mortality from fatal diseases," Dr. Goldman stated. ***"If we can age more slowly, we can delay the onset and progression of many disabling diseases simultaneously."***

Editor's Note: "Even a marginal success in slowing aging is going to have a huge impact on health and quality of life," added coauthor Jay S. Olshansky. "This is a fundamentally new approach to public health that would attack the underlying risk factors for all fatal and disabling diseases. We need to begin the research now."

—D. Dye

* *Health Aff (Millwood)*. 2013 Oct;32(10):1698-705.

Higher Vitamin K Levels Associated With Improved Verbal Episodic Memory

The journal *Neurobiology of Aging* describes a study conducted by researchers at the University of Montréal which uncovered an association between higher serum phylloquinone (vitamin K1) levels and better verbal episodic memory in older adults.*

The current investigation utilized data from 320 subjects between the ages of 70 to 85 years who were free of cognitive impairment upon enrollment in the Québec Longitudinal Study on Nutrition and Successful Aging, which recruited 1,793 men and women from 2003 to 2005. Follow-up interviews were conducted yearly for up to three years following enrollment. The current study's subjects underwent cognitive evaluation between 2006 and 2008, and blood samples collected at this time period were analyzed for phylloquinone and other factors.

An association was found between higher vitamin K levels and the scores of three immediate free recall trials and 20 minute delayed free recall, which evaluated verbal episodic memory.

Editor's Note: Episodic memory refers to the memory of events with their space-time context.

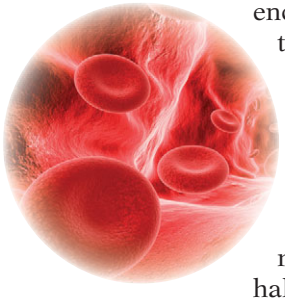
—D. Dye

* *Neurobiol Aging*. 2013 Dec;34(12): 2777-83.

Active Form Of Vitamin D Shows Promise In Animal Model Of Multiple Sclerosis

The *Journal of Neuroimmunology* published an article which reveals a benefit for calcitriol, the active form of vitamin D, in a mouse model of multiple sclerosis (MS).

Coleen E. Hayes and her associates tested the effect of calcitriol and vitamin D3 in mice with experimental autoimmune encephalitis, a disease in which demyelination of the nerves occurs as in MS. While vitamin D3 alone was not effective, the combination of calcitriol followed by supplementation with the vitamin resulted in improvement.*



"All of the animals just got better and better, and the longer we watched them, the more neurological function they regained," Dr. Hayes reported. "The treatment shows potential to help halt the disease's progress in humans, for whom currently available therapies have limited effectiveness. And in the long term they don't halt the disease process that relentlessly eats away at the neurons. So there's an unmet need for better treatments."

Editor's Note: The experimental treatment was more effective than methylprednisone, which is used to treat neurological problems experienced by MS patients.

—D. Dye

* *J Neuroimmunol*. 2013 Aug 6.

Bioequivalent Estradiol May Be Safer Than Conjugated Equine Estrogens

JAMA Internal Medicine published an article which reported a lower risk of venous blood clots in association with the use of orally administered bioequivalent estradiol in comparison with conjugated equine (horse urine derived) estrogens for the treatment of menopausal symptoms.*

The investigation included 384 postmenopausal women who were enrolled in the Heart and Vascular Health Study, a case-control study of cardiovascular events involving subjects between the ages of 30 to 79 years. Subjects in the current study used oral horse urine derived estrogens or estradiol from 2003 to 2009. Sixty-eight women who had experienced venous thrombosis (deep vein thrombosis or pulmonary embolism), 67 women who had undergone a heart attack, and 48 subjects who had an ischemic stroke were matched for age and other factors with 201 control subjects. Among women who used horse urine derived estrogens, the risk of experiencing venous thrombosis was more than double that of subjects who used estradiol.

Editor's Note: Analysis of plasma samples from 140 control subjects also indicated stronger propensity for blood clotting among those who used conjugated equine (horse urine derived) estrogens.

—D. Dye

* *JAMA Int Med*. 2013 Sep 30.

High Potency FAT-SOLUBLE NUTRIENTS in ONE Softgel

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

Just one ***SUPER BOOSTER*** provides:

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

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

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

Item # 01680

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

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

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

JUST *ONE* SOFTGEL OF SUPER BOOSTER SUPPLIES:

Vitamin K2 (as menaquinone-7)	200 mcg	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 during **Super Sale**, the price is reduced to **$25.65** per bottle.

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

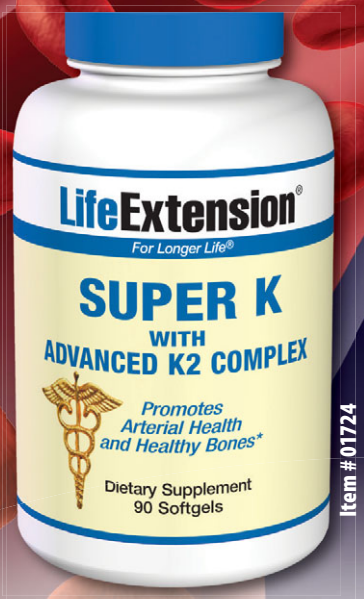
To order Super Booster, call 1-800-544-4440 or visit www.LifeExtension.com

Contains soybeans.

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

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

COMPREHENSIVE VITAMIN K FORMULA



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

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

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

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

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

Super K formula provides in just one daily softgel:

Vitamin K2 (MK-7)	**200 mcg**
Vitamin K2 (MK-4)	**1000 mcg**
Vitamin K1	**1000 mcg**

The retail price for a bottle containing **90 softgels** is $30. If a member buys four bottles during **Super Sale**, the price is reduced to **$18.23 per bottle**. Since each bottle lasts for three months, members pay as little as **$6.08** a month for this high-potency blend of all three active forms of vitamin K during the Super Sale.

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

Warning to Coumadin® (warfarin) Drug Users

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

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ASTAXANTHIN Formula
with *Increased* Bio-availability

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

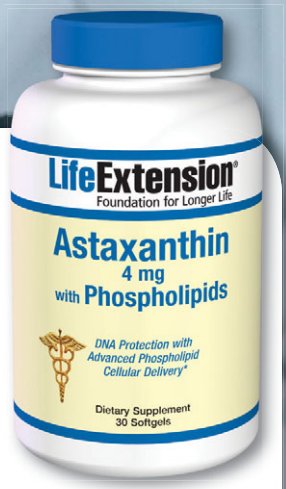
Astaxanthin 4 mg with Phospholipids combines **4 milligrams** of natural astaxanthin with a *proprietary blend* of ***phospholipids***.

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

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

ASTAXANTHIN

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



A bottle of 30 softgels of **Astaxanthin 4 mg with Phospholipids** retails for $16. If a member buys four bottles during **Super Sale**, the price is reduced to **$9.45** per bottle.

Contains soybeans.

Item #01720

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To order Astaxanthin 4 mg with Phospholipids, call 1-800-544-4440 or visit www.LifeExtension.com

BY JOHN CANNELL, MD

AUTISM and VITAMIN D

I (John Cannell, MD) recently learned that I have the **Broad Autism Phenotype**, or what some people call *mild autism*. Learning about this was like "coming out of the closet." It explains so much of myself to me, especially my tendency to get obsessed with things. For the last 11 years, I have been obsessed with **vitamin D** and for the last four years, I have been obsessed with **vitamin D and autism**.

I first became interested in vitamin D when I learned it is not a vitamin. Instead, it is the only known substrate of a *seco-steroid neurohormone* that functions, like all steroids, by turning genes "on" and "off". That means it has as many different mechanisms of action as it does genes it regulates. Moreover, vitamin D regulates hundreds, if not thousands, of the 21,000 identified coding genes of the human genome.[1-3]

Over the past few years, evidence has been mounting that vitamin D is involved in the autism epidemic.

In 2008, I first published[4] and later extended[5] epidemiological and animal data connecting vitamin D deficiency with autism. My second article is open access, discusses some of the autism/vitamin D evidence, and can be fully accessed at: www.lef.org/autism.

In 2009, *Life Extension® Magazine* published a detailed description of the theory.[6]

In 2009, Emily Deans, MD, wrote an extensive piece in *Psychology Today* outlining the theory of the connection between autism and vitamin D.[7]

In 2009, *Scientific American* asked, "What if vitamin D deficiency is a cause of autism?"[8]

In 2010, Kinney and colleagues at Harvard endorsed the vitamin D connection to autism.[9]

In 2012, Kočovská and colleagues, with senior author Professor Christopher Gillberg of the Gillberg Neuropsychiatric Institute in Sweden, reviewed the evidence supporting the vitamin D connection to autism and called for "urgent research" into the connection.[10]

For the last year, I have been helping parents of autistic children correct their child's vitamin D deficiency. My very preliminary and unscientific impressions are that if the child takes enough vitamin D (as long as they take enough cofactors with the vitamin D), about **25%** of the parents report *dramatic* improvements in their child's autistic symptoms, about **50%** of parents report *significant* improvements, and **25%** of parents report no change.

How could vitamin D help autism, a condition that is highly genetic? Research has demonstrated that vitamin D has multiple mechanisms of action, many of which have been demonstrated to play a role in autism. Let's take a look at four:

Anti-Inflammatory Actions

Some believe that autism is a disease of neuro-inflammation.[11,12] According to scientific research vitamin D has profound anti-inflammatory actions.[13] Experimental models show both direct and indirect anti-inflammatory effects of vitamin D involving both arms of the immune system (innate immunity and adaptive immunity).[14,15]

Recent research reveals that activated vitamin D exhibits multiple anti-inflammatory effects.[16] For example, vitamin D inhibits the synthesis and biological actions of pro-inflammatory prostaglandins, which are elevated in autism.[16-18] Vitamin D also exerts anti-inflammatory activity through the inhibition of *nuclear factor-kappa B*, which is involved in abnormal signaling in autistic brains.[19,20]

Could vitamin D help autistic children by reducing inflammation?

Autoimmune Actions

There are at least 80 recognized human autoimmune diseases with new diseases frequently added to the list.[21] A number of autoantibodies to the brain have been identified in autistic children, causing some to believe that many cases of autism are autoimmune.[22,23] Furthermore, the levels of such antibodies are directly associated with the severity of autism.[24,25]

A recent study found that the level of one anti-neural autoantibody (anti-MAG) was elevated in **70%** of patients with autism.[26] The study found that higher levels of anti-Mag were associated with significantly lower levels of vitamin D.[26] In the same study, low serum levels of *25-hydroxyvitamin D* were significantly associated with higher scores on an autism diagnostic assessment known as the **Childhood Autism Rating Scale**, indicating increasing severity of autism symptoms.[26]

Could vitamin D help autistic children by reducing the blood levels of autoantibodies in autistic children?

Neurotrophins

Neurotrophins are the family of proteins that induce the development, function, and survival of nerve and brain cells. Vitamin D upregulates neurotrophins, such as NGF (nerve growth factor) and GDNF (glial-derived neurotropic factor), up to five-fold.[27-29]

Could vitamin D help autistic children by increasing neurotrophins and thus help a damaged brain develop properly?

Antioxidants

Several research groups report that vitamin D upregulates the antioxidant glutathione in the brain.[30,31] Glutathione is involved in the brain detoxification process because it participates in the scavenging of oxidative byproducts and the chelation (capture and excretion) of heavy metals.[31-33] Glutathione protects nerve cells and nerve conduction critical to mental processing, especially from toxins such as mercury.[33]

Other research teams have reported that recent gene profiling has revealed several more antioxidants whose genes are directly upregulated by vitamin D.[34] This includes thioredoxin reductase 1 and superoxide dismutase, both of which function as antioxidants and detoxification agents.

Could vitamin D help autistic children by upregulating numerous antioxidants?

Theoretical Only

It's clear that various reasonable mechanisms exist for how vitamin D could help children with autism. Be it via anti-inflammatory actions, anti-autoimmune activities, upregulation of *neurotrophins*, or stimulation of antioxidant pathways, adequate doses of

vitamin D (enough to obtain natural blood levels of **50-80 ng/mL** of 25-hyroxyvitamin D) may be a potential treatment for some cases of autism.

However, such a claim is entirely theoretical. There are no randomized controlled trials, no open label trials, no case series, and not even one published case report of vitamin D helping autism.

Even though there are no studies proving the benefits of vitamin D in autism specifically, the proven safety and benefits of vitamin D, added together with the fact that vitamin D has been shown to have a beneficial effect on many of the mechanisms of action that underlie autism, make vitamin D a smart option for children with autism.

Parents who want to try it should thoroughly understand that no evidence, other than theoretical, exists for such an effect.

How To Start Your Child On Vitamin D

For parents who want to proceed on their own, the key to success is obtaining high physiological 25-hydroxyvitamin D blood levels around **80 ng/mL** (the same levels that are obtained by lifeguards in August).

As all studies show that autistic children are low in vitamin D, getting a *25-hydroxyvitamin D* blood test to start is usually unnecessary.

The first step is simply to give your child **50 IU** of vitamin D3 per pound of body weight per day. Liquid vitamin D is available from several sources.

So a 25-pound child would be started on **1,250 IU** each day of D3, a 50-pound child on **2,500 IU** each day, etc. This dose will usually result in mid-range physiological 25-hydroxyvitamin D levels (**40-60 ng/mL**), although some children may obtain higher physiological levels (**60-70 ng/mL**) on this dose.

The child should also be started on vitamin D's cofactors, such as vitamin K2 (**3 mcg** per pound of body weight) and nutrients in a multi-nutrient powder formula. If Life Extension Mix™ powder is used, ½ a scoop for every 25 pounds of body weight can be blended in juice or a smoothie. The roughly **700 IU** of vitamin D3 in one scoop of powder will help raise vitamin D levels.

After three months on the initial vitamin D dose, obtain another *25-hydroxyvitamin D* blood test. If the 25-hydroxyvitamin D level is by any chance over **80 ng/mL**, then the child's dose is adequate and nothing else needs to be done but to hopefully watch for improvements in core symptoms.

If 25-hydroxyvitamin D levels remain below **80 ng/mL**, then a proportional dose increase of **25 IU** vitamin D3 per pound of body weight is indicated.

What You Need to Know

Role Of Vitamin D In Autism

- **Vitamin D inhibits the synthesis and biological actions of pro-inflammatory prostaglandins, which are elevated in autism.**
- **A number of autoantibodies to the brain have been identified in autistic children, causing some to believe that many cases of autism are autoimmune.**
- **Research has shown that high levels of certain brain-antibodies are associated with low vitamin D status.**
- **Vitamin D upregulates neurotrophins, the family of proteins that induce the development, function, and survival of nerve and brain cells, up to 5-fold.**
- **Vitamin D stimulates production of glutathione and several other antioxidant and detoxification enzymes.**
- **Even though there are no studies proving the benefits of vitamin D in autism specifically, the proven safety and benefits of vitamin D, added together with the fact that vitamin D has been shown to have a beneficial effect on many of the mechanisms of action that underlie autism, make vitamin D a smart option for children with autism.**

For example, a 25-pound child on **1,250 IU** a day would increase to **1,875 IU** a day, and a 50 pound child on **2,500 IU** a day would increase to **3,750 IU** a day.

In three more months, obtain another 25-hydroxyvitamin D test and adjust doses accordingly. If 25-hydroxyvitamin D levels exceed **100 ng/mL**, simply reduce the dose by **10%** for every **10 ng/mL** the test is above **100 ng/mL**.

Levels above **100 ng/mL** do not mean "toxicity" as "toxicity" (asymptomatic hypercalcemia) is rare with 25-hydroxyvitamin D levels below **200 ng/mL**, and **200 ng/mL** is very difficult to obtain.[35] If these high doses make you nervous, have your child's blood calcium level checked, and you will see your child's calcium level is not high (**over 10.5 mg/dL**).

Keep adjusting the dose every three months based on vitamin D levels. It is important that you test for serum *25-hydroxyvitamin D* and not 1,25-dihydroxyvitamin D. For children who do not tolerate venipuncture, an accurate blood spot test requiring only a finger prick is available at www.vitamindcouncil.org.

For optimal absorption, give your child vitamin D during the meal of the day that contains the most fats. This may produce the optimal 25-hydroxyvitamin D levels suggested at the beginning of this section without having to resort to higher dosing.

As I said above, my very rough estimation is that around **75%** of autistic children seem to respond at least somewhat to higher doses of vitamin D after levels are around **80 ng/mL**.

Response Rates

To date, I have noticed that children who fall in one of the following categories tend to respond positively to vitamin D:

1. Children with reported seasonality of autistic symptoms (such as those with summer access to a swimming pool or similar extensive outdoor activities, in which the child is much better in late summer than he or she is in late winter) usually respond better.
2. Children who had a period of early normal development (as opposed to those who seem affected even as infants) seem to respond better.
3. Children with mild or moderate autism seem to respond better.
4. Children under the age of eight seem to respond better than older children do.

However, none of these, except perhaps a very distinct seasonality of symptoms, clearly predicts a response to vitamin D. In the same vein, some parents tell me that children with infantile onset of symptoms, children with more severe autism, or children older than eight have responded.

Unfortunately, my experience is that the **10-20%** of children with known genetic causes of autism (such

as Rett syndrome, fragile X syndrome, tuberous sclerosis, clear mitochondrial defects, submicroscopic deletions or duplications in DNA sequences, or deletions or duplications of chromosome regions) do not respond to vitamin D.

Parents who want me to participate in the diagnosis and treatment of their autistic child should contact my office in San Luis Obispo, California, for an appointment. There I will fully assess your child and give treatment recommendations to the parents. I will also be available for a limited number of tele-educational sessions via Skype, in which I will educate parents about vitamin D and its cofactors.

Summary

Over the past few years evidence has been mounting that vitamin D is involved in the autism epidemic. Research has demonstrated that vitamin D has multiple mechanisms of action, many of which have been demonstrated to play a role in autism. Scientific data have made it clear that various reasonable mechanisms exist for how vitamin D could help children with autism. Be it via anti-inflammatory actions, anti-autoimmune activities, upregulation of neurotrophins, or stimulation of antioxidant pathways, adequate doses of vitamin D (enough to obtain natural levels of **50-80 ng/mL**) may be a potential treatment for some cases of autism. ●

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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autisminfo@sloim.com
http://sloim.com/autism/

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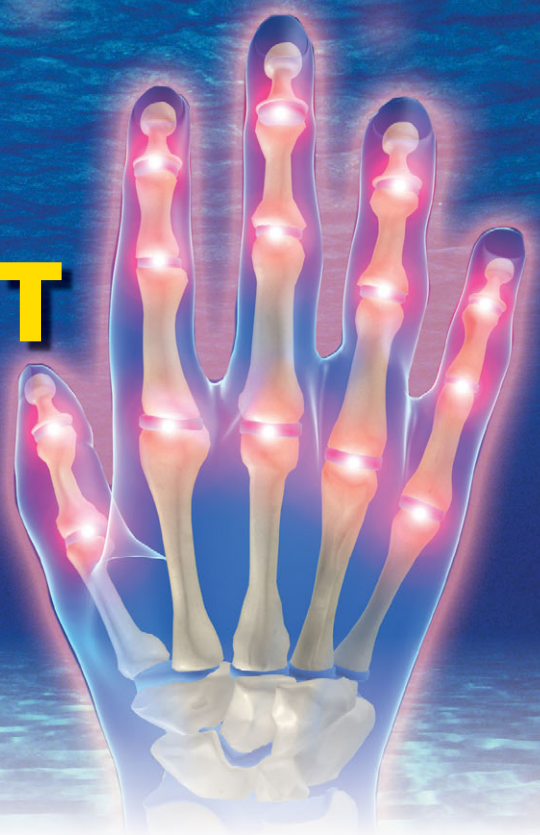
KRILL HEALTHY JOINT FORMULA

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.

Most commercially available krill oils do not contain significant amounts of astaxanthin because it is nearly eliminated during processing. **Krill Healthy Joint Formula** is *fortified* with astaxanthin, for maximum stability and superior benefit.

JUST ONE SOFTGEL DAILY

The suggested daily serving of one **Krill Healthy Joint Formula** softgel daily supplies **353 mg** of this proprietary blend.

A bottle containing **30** softgels of **Krill Healthy Joint Formula** retails for $32. If a member buys four bottles during **Super Sale**, the price is reduced to **$19.58** per bottle. Just one softgel a day of **Krill Healthy Joint Formula** duplicates a successful human clinical trial.

Item # 01600

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

Contains crustacean shellfish (krill).

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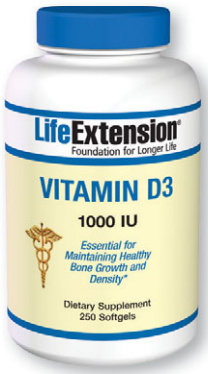
VITAMIN D3 SOFTGELS

FOR SUPERIOR ABSORPTION

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

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

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

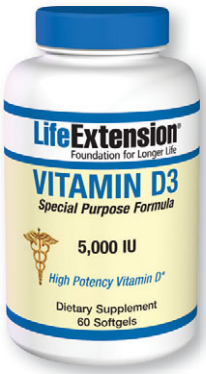


VITAMIN D3 1,000 IU
250 softgels

Retail: $12.50

Four-bottle Member Price during Super Sale: $7.59 ea.

Commercial companies offered only **400 IU** vitamin D products when Life Extension long ago introduced a **1,000 IU** version. For most people, this **1,000 IU** potency is *insufficient* to attain optimal vitamin D blood levels. For smaller individuals who obtain **2,000-3,000 IU** in their multi-nutrient formulas (and children), this potency of vitamin D may be suitable. **Item # 01751**

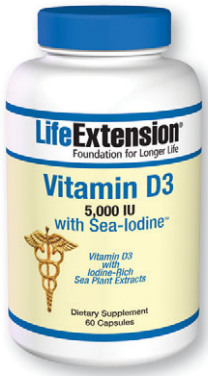


VITAMIN D3 5,000 IU
60 softgels

Retail: $11

Four-bottle Member Price during Super Sale: $6.68 ea.

For those already obtaining **1,000-3,000 IU** of vitamin D in their multi-nutrient formulas, this **5,000 IU** potency is what many need to *achieve* optimal vitamin D blood levels. **Item # 01713**

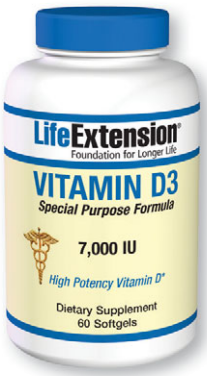


VITAMIN D3 5,000 IU WITH SEA-IODINE™*
60 capsules (non-softgel)

Retail: $14

Four-bottle Member Price during Super Sale: $8.44 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 # 01573**



VITAMIN D3 7,000 IU
60 softgels

Retail: $14

Four-bottle Member Price during Super Sale: $8.51 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 during Super Sale: $16.88 ea.

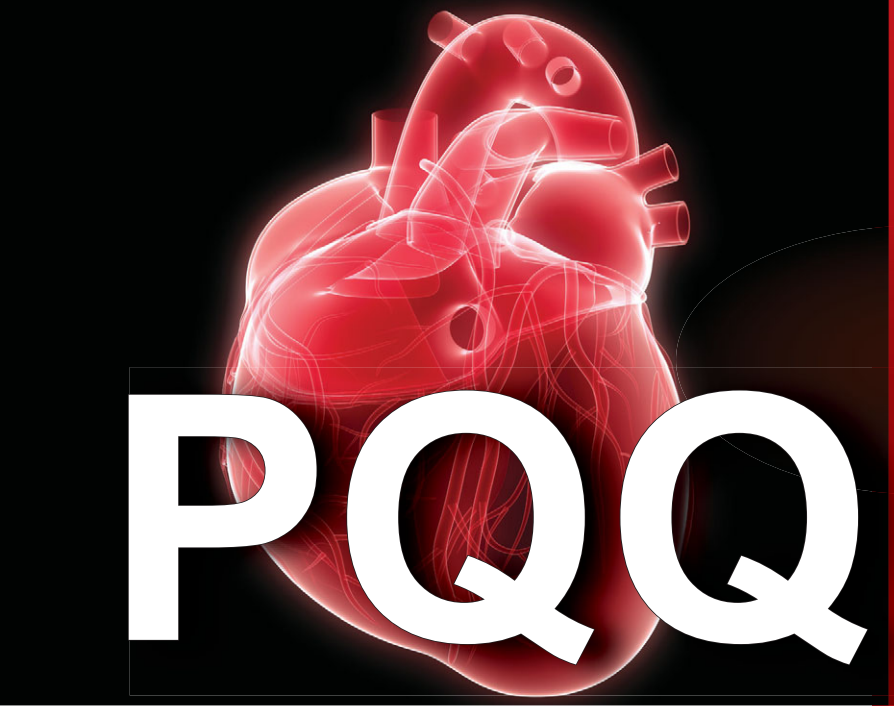
For those rare individuals who have difficulty absorbing enough vitamin D3 from softgels, this liquid of vitamin D can be used. **Item # 01732**

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.**



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]

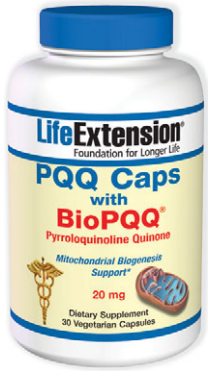
When taken in combination with **CoQ10**, just **20 mg per day** of **PQQ** has been shown to promote **memory**, **attention**, **and cognition** in maturing individuals.[18]

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 during **Super Sale**, the price is reduced to **$24.30** per bottle.

The recommended daily dose for **PQQ** is **20 mg**. Those taking **Mitochondrial Energy Optimizer** or **Mitochondria Basics** only require an additional **10 mg** of **PQQ** since these formulas already provide **10 mg** of **PQQ**. The retail price for **30 10 mg PQQ** caps is $24. If a member buys four bottles during **Super Sale**, the price is reduced to only **$14.85** per bottle. **(Item #01500)**



Item #01647

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

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To order PQQ Caps with BioPQQ® standalone or any other PQQ-containing formula call 1-800-544-4440 or visit www.LifeExtension.com

BY BEN BEST

SCIENTIFIC RESEARCH

Funding Research to Help Fill the Government Void

The **National Institutes of Health** is the world's largest supporter of biomedical research.

Due to deep budget cuts, scientists who may be on the cusp of significant advances are finding it difficult to obtain federal funding.[1]

Rather than see vital projects fall by the wayside, the ***Life Extension Foundation***® has stepped up to provide grants to scientists involved in promising fields of research.

While Life Extension Foundation® support of multi-million dollar research programs remains intact, we report here on seven individual scientists who are efficiently working in biomedical arenas overlooked by the mainstream. What's remarkable is how much these talented individuals can do with so few dollars.

To put these small grants in context, we looked at the early career of **Jonas Salk**, the discoverer of the **polio vaccine**. Polio was the most frightening public health problem in the United States in the early 1950s.[2,3]

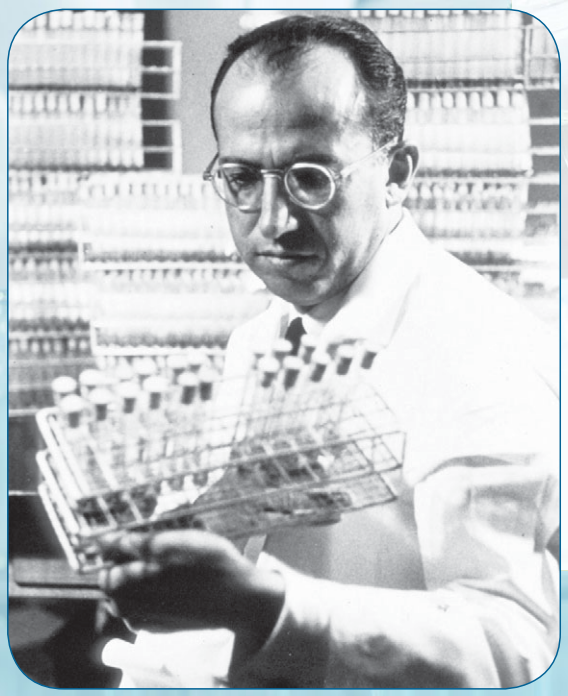
Jonas Salk graduated from medical school, but his interest went beyond practicing medicine.[3] Dr. Salk applied for research positions at universities, but found these were closed to him because of the "***Jewish quotas***" that prevailed in much of the medical establishment at the time.[4]

Dr. Salk was relegated to a cramped, unequipped quarters in the basement of an old municipal hospital. As time went on, however, Salk was able to secure **private grants** to build a working virology laboratory, where he helped develop flu vaccines.

Jonas Salk's talents were eventually recognized, and he was later asked by the **National Foundation for Infantile Paralysis** to participate in the foundation's polio project.[3]

On April 12, 1955, the results of a huge human trial of Salk's polio vaccine were announced: It was safe and effective.[3] In the two years before the vaccine was widely available, the average number of polio cases in the U.S. was more than **45,000**. By 1962, that number had dropped to **910**.[2]

Salk never patented the vaccine, nor did he earn any money from his discovery, preferring to see it distributed as widely as possible.[3]



Jonas Salk, MD
His pioneering research spared hundreds of thousands from paralysis and premature death.

It is impossible to know if the small grants Life Extension Foundation® is making to these young scientists will result in medical breakthroughs, but there are interesting parallels to the cramped laboratory that Dr. Salk was initially relegated to and what some of these individuals did with their own limited funds to advance cancer and aging research.

The scientists that Life Extension Foundation® have recently funded describe their work here, along with their stories about having been unable to obtain funding from **government** sources. We want to warn that some of the following research descriptions are technical in nature and may not be fully comprehendible to all our readers.

John Schloendorn, PhD
Independent Stem Cell Researcher
(PhD in Molecular Biology)

I study human embryonic stem cells as a means to develop meaningful life-extending rejuvenation therapies. Federal government funding of stem cell research is still far too restrictive, even under President Obama. State and private funding are generally more interested in pedigree and reputation, rather than risk-taking and innovation. My grant applications to mainstream funding agencies were virtually always declined with words like "unproven" or "too speculative." However, my view is that if we are to create tomorrow's life extension medicine, then a certain amount of "unproven" and "speculative" work is going to be required. Therefore, I left my academic position and set out to do this work on my own. Fortunately, my skills and accomplishments are better appreciated in the life extension community.

In 2010, I was able to raise a small amount of venture capital for my first startup company, ImmunePath, Inc. At ImmunePath, we derived immune cells from mouse progenitor cells, and were able to use those cells to save the lives of mice that had been administered what would have otherwise have been fatal infectious pathogens. There were no immune system incompatibilities, and no immunological matching was required. The next step for ImmunePath would have been human clinical trials. But this would have required $15 million, a sum of money we ultimately failed to raise.


John Schloendorn, PhD

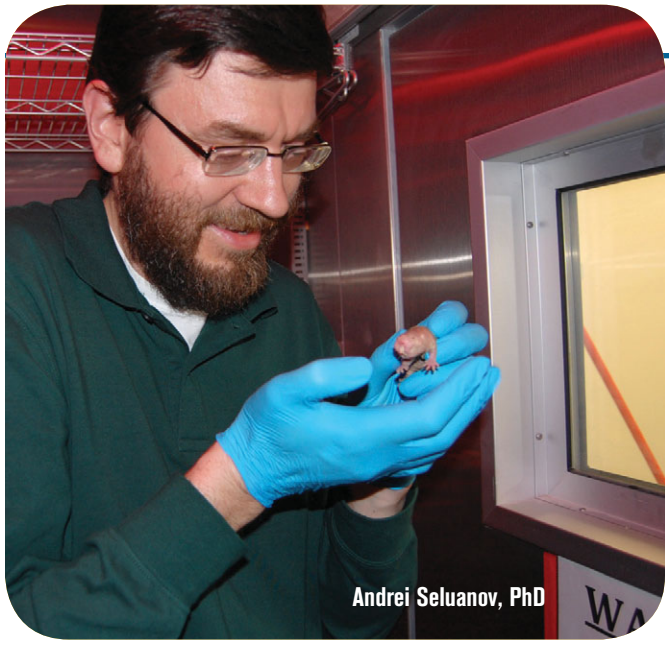
After ImmunePath failed, I have re-built my stem cell laboratory. I had to learn to obtain used laboratory equipment from failing biotechnology companies for cents on the dollar, or even for free. Nonetheless, I had to spend most of my personal savings to re-build my stem cell laboratory in this way. I am able to keep my lab operational by renting out access to my equipment, doing contract research for others, or producing biological components for universities involved in stem cell research. But it's still difficult to make the economics work and takes a lot of my time. The $50,000 grant Life Extension Foundation® provided will be sufficient to put my laboratory on a self-sustaining path. Thus I would become free to focus entirely on my "unproven" stem cell research, where I can potentially make a very large impact on extending our healthy life span.

I am therefore very grateful to the Life Extension Foundation® for granting me $50,000. I believe that with that seed money I can fairly rapidly develop self-sustaining infrastructure that will give me the means to concentrate on regenerative medicine. My goal is to substantially extend human life and health. I am hopeful that I can soon concentrate on research that will achieve these ends. Citations to some of my scientific research papers, along with papers of my colleagues appear at the end of this article.[5-11]

Andrei Seluanov, PhD
Assistant Professor at the University of Rochester, Rochester, New York

Because of my research into the molecular mechanisms of aging and cancer, I maintain the second largest colony of naked mole rats in the world. Naked mole rats are the size of mice, but they live about ten times longer than mice. In protected environments mice normally can live up to three years, usually dying of cancer. Naked mole rats have never been observed to develop cancer. Nor do they show much sign of aging or aging-associated disease. Understanding the reasons for the exceptional longevity of naked mole rats, and the means by which they avoid cancer, has been the focus of my recent research.

In 2009 I published an article in the ***Proceedings of the National Academy of Sciences of the United***


Andrei Seluanov, PhD

States of America in which I demonstrated that naked mole rats avoid cancer through contact inhibition.[12] In some species, cancer cells can multiply without restraint, ultimately becoming big masses of tumor cells that crowd-out normal functioning cells. **Contact inhibition** is the impediment of excessive growth of cells by neighboring cells.[12] The National Academy of Sciences also awarded me the Cozzarelli prize for having the most exceptionally excellent paper on the subject of biomedical sciences for the year 2009.[13]

After further research I determined that the contact inhibition and cancer resistance in naked mole rats is due to high levels of a molecule called **hyaluronan** between the cells.[14] A similar, although less potent compound, has already been applied in the clinic and as a food supplement. I have been wanting to determine the molecular mechanisms by which hyaluronan prevents contact inhibition, establish whether hylauronan also plays a role in extending life by means other than contact inhibition, and explore the potential for making the benefits of hyaluronan available to humans through research on mice.

But when I applied to the Federal Government (the National Institutes of Health) for funding, my grant application was declined. One of the reviewers advocating the decline argued that there is no need for further research with naked mole rats because that animal's genome has been sequenced. Without grant money I would be unable to continue my research. I turned to the Life Extension Foundation® for support. I am greatly pleased that the Life Extension Foundation® is giving me $50,000 every six months, with progress reports required before each new six-month grant. These grants will enable me to look for ways to extend human life and health.

Robert Shmookler Reis, PhD
Professor at the University of Arkansas for Medical Sciences, Little Rock, Arkansas.

My research career has been focused on the influence of genetics on longevity and the diseases of aging. Although we have known for the better part of a century that calorie restriction slows aging in rodents[15] and that life span is largely under genetic control in many or all species,[16,17] it is only in the last two decades that the genes and pathways regulating life span have been discovered. A mutation in the *age-1* gene was shown to increase the average life span of nematode worms by **40–65%**[18] and *daf-2* mutations double their life span.[19] These genes were later found to lie in the same genetic pathway, which when manipulated in mice can stretch their life span by half.[20]

Two decades after the first long-lived mutant in *age-1* was characterized,[18] I found that more thorough elimination of this gene's PI3K gene product can actually extend nematode life span tenfold.[21] I believe that this benefit can extend far beyond worms. Suppression of PI3K in mouse heart muscle slows many measures of heart aging and improves their overall survival.[22] Crippling just one of the normal two copies of PI3K in all tissues of the mouse is bad for juvenile mice but improves fitness, metabolism, and survival after maturity.[23] Humans who live past age 100 show an inherent genetic bias that produces the same effects.[24]

My goal is to identify the molecules that are directly affected by the most beneficial genetic modification, and to find drugs that can knock out **PI3K** and mimic the life-extending benefits observed in previous studies. Nematode worms are an ideal biochemical laboratory for life span studies of this nature, but I also expect to experiment with human cells and mice, with which I have many years of experience.


Robert Shmookler Reis, PhD

Several applications to the Federal Government for support to conduct this and related research have not been successful. The Summaries of Discussion indicated that reviewers were sharply divided, which inevitably results in a score that is not fundable even though two of the three critiques were positive. Just a single comment can be fatal, even an obviously biased one such as that little new could be added by this study "in light of the fact that the *age-1* pathway has been extensively characterized by a number of groups."

Another reviewer required that I show evidence of the effectiveness of the drugs I am seeking before I can be funded to look for them. Fortunately, the people at the Life Extension Foundation® have a remarkably positive attitude to supporting research that can make a significant difference to human longevity. Life Extension Foundation® is giving me $50,000 every six months for at least two years as long as progress reports (before each new six-month period) indicate that my research is productive. This open-ended funding arrangement benefits everyone, because Life Extension Foundation® is assured that their money is put to good use, while the grant recipient knows that funding can continue as long as the results warrant it.

Vera Gorbunova, PhD
Professor in the Department of Biology at the University of Rochester, Rochester, New York.

My research is concerned with how DNA damage and repair contribute to aging and cancer. DNA damage often leads to mutation and cancer, but DNA damage may also contribute to aging.[25] I am hopeful that what I can learn about what causes DNA damage and what I can learn about facilitating repair of DNA damage can lead to a reduction of aging and cancer in humans.

There has been much interest among life extensionists in resveratrol, a substance found on the skin of red grapes which some scientists believe has been shown to extend the life span of nematode worms.[26,27] It was proposed that the ability of resveratrol to activate sirtuin activity is the basis of the benefits of resveratrol.[28]

There are seven sirtuins in mammals, numbered SIRT1 to SIRT7. The sirtuin in mammals that is activated by resveratrol is SIRT1.[29] Resveratrol has been shown to protect obese mice from diabetes.[30] SIRT6, on the other hand, is able to protect normal mice from DNA damage,[31] and SIRT6 promotes repair of DNA damage. SIRT6 activity increases the DNA repair mechanisms for double-strand breaks.

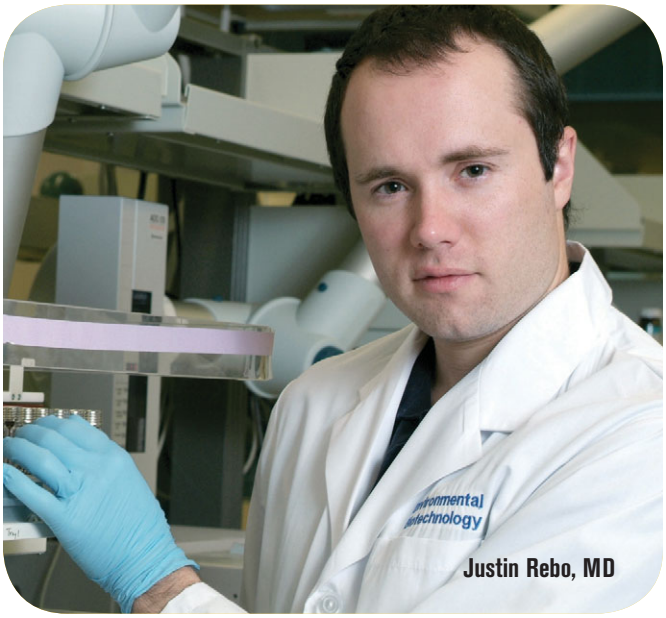
DNA double-strand breaks are dangerous. DNA lesions that can cause cell death or genomic rearrangements are frequently found in aged and cancerous cells. Activation of the SIRT6 gene in mice has been shown to extend their life span.[32] Some rodents have a more effective SIRT6 gene than other rodents, so I am seeking to understand the difference.

I would like to find a chemical that activates SIRT6 much as resveratrol is thought to activate SIRT1. I would like to understand what makes some SIRT6 genes better than others in order to get the best effect. Our laboratory has developed assays of SIRT6 biochemical activity, which we will optimize to be able to screen large numbers of chemicals including natural compounds and identify those that activate SIRT6.

Although program officers at the National Institute on Aging are supportive of my work, the budgets are shrinking, and outside reviewers can have divergent opinions. My application for funding was declined because the reviewers believed that SIRT6 may not be the only means by which DNA repair may be better or worse between species.

Fortunately, the Life Extension Foundation® has granted me the research money I need to learn how SIRT6 can best be utilized to protect against DNA damage. Life Extension Foundation® is giving me $50,000 every six months, with progress reports required before each new six-month grant. Life Extension Foundation® appreciates that if I can find one means of protecting against aging and cancer today, that will not stop me from finding another means tomorrow.


Vera Gorbunova, PhD



Justin Rebo, MD
Research Scientist, SENS Foundation

My goal has always been to help people live longer, healthier, lives. To that end after I received my MD I moved to Silicon Valley and co-founded a regenerative medicine startup. We made blood cells from embryonic stem cells and used them successfully in a preclinical model, and I developed methods to induce total immune system tolerance of transplanted tissue mismatched on all MHC loci (Major Histocompatibility Complex) using simple blood stem cell transplants. The expertise I've developed through the research I've accomplished so far is linked in that it all uses the blood system as a means of promoting or allowing some kind of rejuvenation. This work is exactly what Life Extension Foundation® is helping me to continue.

Blood, the fluid that transports nutrients, gases, immune cells, and a host of other factors throughout our bodies, declines in function with age. For example, hematopoietic stem cells (HSCs) from older mice, which give rise to the cellular component of blood, have multiple functional defects, including lineage changes, reduced self-renewal, homing efficiency, and a delayed proliferative response.[33] The acellular component of blood, plasma, also declines in function; young mice injected intravenously with plasma from old mice exhibit decreased neurogenesis.[34]Blood's decline exacerbates the age-related functional decline of all other human organs and systems, since these are exposed to and depend on blood. For example, CCL11, a normal eosinophil associated chemokine, increases in plasma with age and when administered to young mice reduces neurogenesis.[34] Heterochronic parabiosis, the joining of the circulatory systems of two animals of different ages, has been used for decades to study the effects of circulating factors both on the young parabiont and the old.[35] The exposure of young blood to old animals has been found to rejuvenate aged muscle, and restore hepatocyte proliferation to levels seen in young animals.[36] This indicates that the restoration of a young systemic environment can at least partially rejuvenate old tissues and stem cells.

It follows that any intervention that can functionally rejuvenate blood may also have some rejuvenating effect on the rest of the body's systems.

With Life Extension Foundation® funding, I will test the effects of replacing old components in blood with young ones so the tissues can exist in a young systemic environment. This can mean the cellular or acellular components of blood, or some combination. Similar technologies have already been successfully applied in humans for treating several diseases, but no one has yet extended these methods to treat the pathological effects of aging.

In particular, I will study the rejuvenating effects of plasma exchange. This means transfusing the plasma of young animals into tissue-typed older animals. Further I will directly remove specific aged factors from plasma including those factors already known and also those elucidated during the course of this study using high throughput proteomics of young vs. aged plasma.

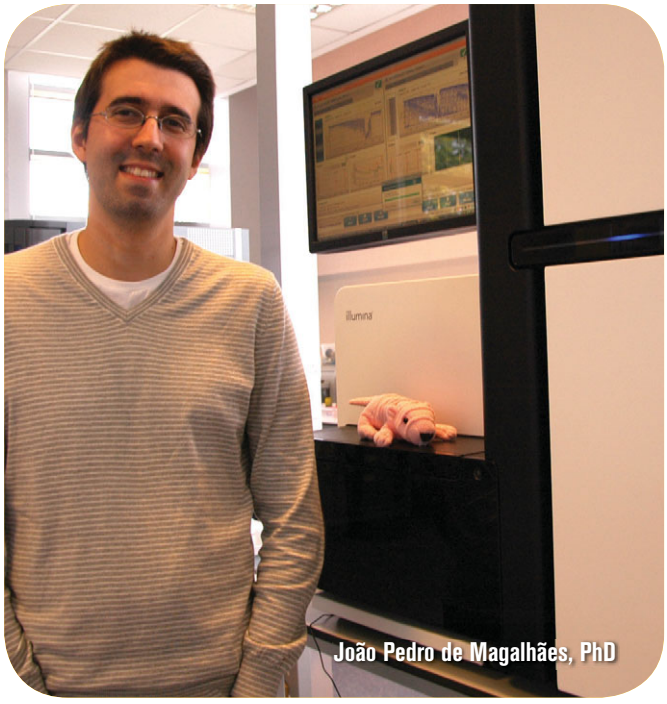
After as little as two years the goal is to begin human clinical development.

This research has thus far remained completely un-fundable through traditional funding sources, which is why it's so important that Life Extension Foundation® is stepping forward to fill the gap to help bring these potentially lifesaving therapies to the clinic. Life Extension is funding $130,000 towards my research.

João Pedro de Magalhães, PhD
Senior Lecturer (equivalent to an Associate Professor in the US) at the University of Liverpool, Liverpool, United Kingdom.

My *Integrative Genomics of Ageing Group* broadly aims to help understand the genetic, cellular, and molecular mechanisms of ageing. Although our research integrates different strategies, its focal point is developing and applying experimental and computational methods that help bridge the gap between genotype and phenotype, a key challenge of the post-genome era, and help decipher the human genome and how it regulates ageing and longevity. In the long-term, I would like our work to contribute to the development of interventions that preserve health and combat disease by manipulating the ageing process.

Biomedical research, including most research on human diseases, is usually based on animal models that develop the disease under study at a higher incidence and rate than normal. An unexplored paradigm in biomedical research, however, is the use of disease-resistant organisms to identify genes, mechanisms, and processes that protect against (rather than cause) disease. While disease models may be useful to develop treatments, models of resistance to disease may prove valuable for human disease prevention. In this context, we are interested in studying the unique genetics, physiology, and cell biology of long-lived animals. For example, we have employed next-generation sequencing platforms to study the long-lived naked mole-rat.[37]



João Pedro de Magalhães, PhD

The bowhead whale (*Balaena mysticetus*) has not only been estimated to live over 200 years, making it the longest-lived mammal, but clearly these animals remain disease-free until much more advanced ages than humans can.[38] The mechanisms for the longevity and resistance to aging-related diseases of bowhead whales are unknown, but it is clear they must possess aging prevention mechanisms. In particular in the context of cancer, bowhead whales must have anti-tumour mechanisms, because given their large size and longevity their cells must have a massively lower chance of developing into cancer when compared to human cells.[39]

In this project supported by the Life Extension Foundation®, we are sequencing the genome of the bowhead whale. We are also performing analyses to identify promising candidate genes for further study and identify possible mechanisms that may explain the long life span and resistance to age-related diseases of bowhead whales. Overall, this project will provide a key resource for studying the bowhead whale's exceptional longevity and resistance to diseases. Studying a species so long-lived and with such an extraordinary resistance to age-related diseases will help elucidate mechanisms and genes conferring longevity and disease resistance in mammals that in the future may be applied to improve human health.

This is the sort of high-risk, high-reward project that is rarely supported by government funding bodies, and indeed my grant applications to study long-lived organisms have been invariably rejected (including by the National Institutes of Health and NHGRI, in spite of widespread support from the research community[40]) for being too risky and often labelled as "overambitious." I am therefore very grateful to the Life Extension Foundation® for contributing $23,000 for this project. All data and results from this project will be made available to the scientific community to encourage research using data from long-lived species.

Maximus Peto
Independent Protein Manufacturer (BBA Finance, MBA, Undergraduate Biochemistry)

Most stem cell research requires the use of ***recombinant cytokines*** in the stem cell growth media. But current retail prices are very high, which markedly inhibits the advance of stem cell therapies that could save human lives.

I currently work at developing very low-cost recombinant cytokines (a specialized type of protein), because these proteins are used ubiquitously in stem cell research.

I first learned how to successfully produce recombinant proteins in my work at the SENS Foundation. "SENS" stands for "***Strategies of Engineered Negligible Senescence***" and is headed by **Dr. Aubrey de Grey**.

At SENS Foundation, I worked on making enzymes for their LysoSENS program for two years. Prior to joining SENS Foundation in 2010, I published a peer-reviewed research paper on iron and aluminium accumulation in humans with age, and how to remove these metals.[41] During my time at SENS Foundation, I also experimented with producing recombinant cytokines in my personal lab, which I invested several thousand dollars of my own funds into building. After some initial successes on a small scale using techniques I developed, I was very surprised at how inexpensively these proteins can be synthesized. However, with my cheap, small-scale equipment, I was unsuccessful in making and purifying enough cytokines for distribution to scientists in need. I discovered that a large proportion of the budget (**10-50%**) of many stem cell labs is spent on these recombinant cytokines. Upon the realization that the high cost of these cytokines was hampering life saving research, I decided that it would be greatly beneficial in accelerating stem cell research if I made these proteins inexpensively on a larger scale. I currently intend to lower the retail cost of recombinant cytokines by **50-90%**, and plan to give away cytokines to avant garde stem cell researchers working directly in the fields of life-extending research.

I approached the Life Extension Foundation® for funding my development processes. I am thankful and excited Life Extension has understood the far-reaching implications of my work for advancing stem cell research. After about five months of discussions, Life Extension Foundation® has committed $100,000 of funding to this project that I envision will help lead to technologies that will slow and reverse human aging processes. ●

How Life Extension Foundation Awards Grants

To obtain funding from Life Extension Foundation®, researchers are directed to a website page containing a form which they are instructed to complete. The applications are discussed by the Life Extension Foundation® research funding committee, which either politely declines the request or asks for more information, sending a more detailed application form. The more detailed forms are then discussed by the Life Extension Foundation® research funding committee. Pointed questions are asked of the researchers if more information is still needed. The funding committee then makes recommendations concerning whether proposals are to be funded or not. Large research grants must be approved by the Life Extension Foundation® Board of Directors. For large research grants, the Life Extension Foundation® typically only gives six months of funding, pending submission of acceptable progress reports by the researchers.

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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Enhanced Night Vision!

EYE PROTECTION FORMULA

Maintain Macular Density

The **macular pigment** is composed of lutein, zeaxanthin, and meso-zeaxanthin. The *density* of the macula is essential to proper vision. Macular density declines naturally over time.

Eating lots of lutein- and zeaxanthin-containing vegetables can help maintain the structural integrity of the macula. However, since **meso-zeaxanthin** is not part of the typical diet, it cannot be easily replaced. Young people convert lutein into meso-zeaxanthin inside their macula. Some aging people, however, lose their ability to convert lutein into **meso-zeaxanthin**.

The **Super Zeaxanthin** formula provides **zeaxanthin**, **lutein** and **meso-zeaxanthin** to help maintain macular density.

Falling down is responsible for 70% of accidental deaths in older people.[1] Poor lighting conditions are often the culprit.

Fortunately, **C3G** derived from **black currant extract** supports eyesight in **dark** conditions by promoting the healthy function of delicate structures within the retina that support **night vision**.[2]

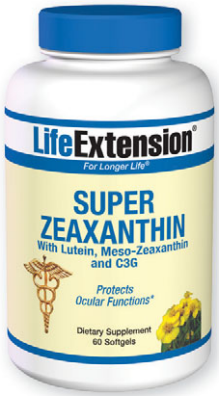
Super Zeaxanthin contains a potent dose of **C3G** to nourish cells throughout the body.

Comprehensive Ocular Protection in One Daily Softgel

The **Super Zeaxanthin** formula provides ingredients that have been shown to promote healthy eyesight. Just one softgel of **Super Zeaxanthin with Lutein, Meso-Zeaxanthin and C3G** provides:

OptiLut®, Lutein Plus® and MZ®	**38 mg**
Marigold *(Tagetes erecta)* extract (flower) [free lutein equivalent 10 mg]	
Zeaxanthin & Meso-zeaxanthin blend	**3.75 mg**
[Paprika *(capsicum annuum)* extract (fruit), **OptiLut®**, **Lutein Plus®** and **MZ®** Marigold Extract (flower)]	
C3G (Cyanidin-3-glucoside)	**2.2 mg**
[from European black currant *(Ribes nigrum)* extract (fruit)]	

The retail price for a bottle containing 60 softgels of **Super Zeaxanthin with Lutein, Meso-Zeaxanthin and C3G** is $22. If a member buys four bottles during **Super Sale**, the price is reduced to **$13.37** per bottle.



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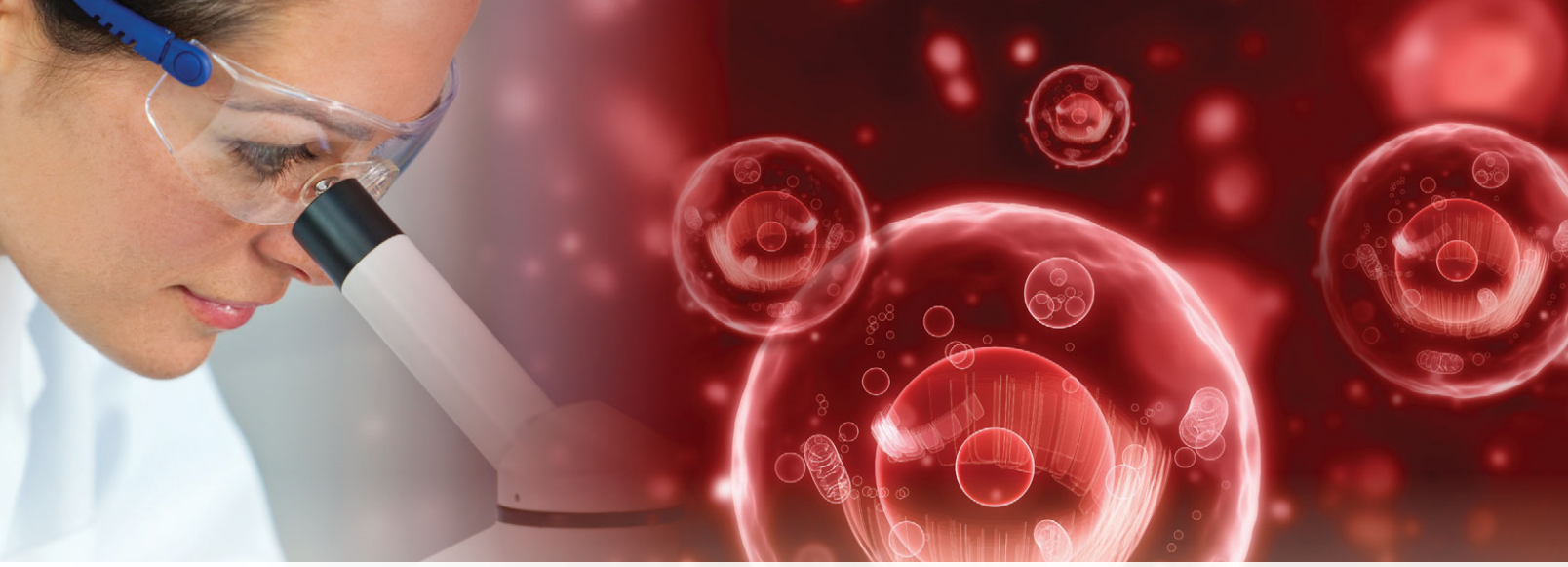


FIGHT BACK AGAINST AGING!

Aging is Characterized by Inflammation, Glycation, and Mitochondrial Decay

The loss of cellular vitality is caused by a number of factors, including mitochondrial problems, glycation, and free-radical reactions. Life Extension® members have access to a state-of-the-art nutritional formula called MITOCHONDRIAL ENERGY OPTIMIZER WITH BioPQQ® that helps protect delicate cellular structures and enables cells to perform life-sustaining metabolic processes.

Mitochondrial Energy Optimizer with BioPQQ® is designed to counteract age-related structural and functional changes by providing the following unique ingredients:

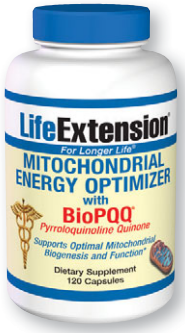
- **CARNOSINE:** As humans age, proteins in their bodies become **irreversibly damaged** by **glycation** reactions. *Glycation* is the cross-linking of proteins and sugar to form **non-functioning** structures called advanced glycation end products in the body, which can lead to alterations of normal cell function. **Carnosine** is not only a powerful **anti-glycating** agent, but it also protects **neurons** against reactive and cytotoxic protein carbonyl species associated with normal aging.[1-5]
- **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 during **Super Sale**, the price is reduced to **$56.70** 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**



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To order Mitochondrial Energy Optimizer with BioPQQ®, call 1-800-544-4440 or visit www.LifeExtension.com

NEW Four-Food Formula

Target PSA!

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® now 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 tissue[3]
- Supports healthy *apoptosis*, your body's system of removing senescent cells when needed[4-6]
- Promotes healthy levels of inflammatory response, inhibits androgen receptor expression, and inhibits abnormal cell migration.[5,7,8]

GREEN TEA

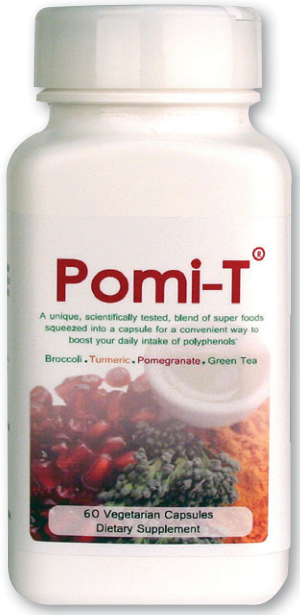
- *EGCG*, a green tea *catechin*, specifically concentrates in prostate tissue where it regulates *PSA* (*prostate specific antigen*) production to maintain healthy PSA levels[9,10]
- Helps modulate genetic expression and activity of *androgen receptors*[11]
- Supports body's natural defenses against 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 harmless[16]
- Helps promote healthy PSA levels[17]
- Supports regulation of cell growth and transcription factors and normal production of apoptosis-inducing proteins[18,19]



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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 **$22.50** per bottle during **Super Sale**.

To order Pomi-T™, call 1-800-544-4440 or visit www.LifeExtension.com

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BY STEPHEN GRANT

Control Underlying Factors Behind MIGRAINES

Migraines are more than just headaches. They are serious disorders that can cause lasting neurological damage and increase the risk of **stroke** as well as **dementia**.[1-5]

Large-scale epidemiological studies reveal that in the US, around **16-22%** of adults reported migraine or severe headache symptoms.[6] Migraines and severe head pain are significant public health concerns with head pain representing the fifth leading cause of emergency room visits each year.[6]

As scientists delve into the biochemistry of the human brain, they are discovering that migraines can cause lasting damage that is similar to the changes seen in **seizures**, **strokes**, and **dementia**.[1,2,7] Physicians are finding that a patient's history of migraines can be a risk factor for some of the most-feared chronic brain disorders.[1-5,7]

Current migraine treatments include **drugs** originally developed for treating epilepsy.[8-10] In the short-term, these drugs are effective because they help reduce the over-excitation in the brain that produces a seizure or a migraine.[9] But as with most pharmaceutical drugs, they are fraught with side effects and fail to address the underlying cause.[8,10]

As scientists searched for treatment alternatives to anti-epileptic drugs, they uncovered two compounds that provide a therapeutic dual action against the changes in the brain that lead to migraines.

Both of these substances, **gastrodin** and **magnesium**, are thought to modulate the sudden changes in neurotransmitters that can set off a crippling migraine as well as support healthy blood flow to the brain. Gastrodin and magnesium work to calm and balance the storm of neurotransmitters that can lead to a migraine while nourishing the brain with **improved blood flow**.[11-14]

This article explains how **gastrodin** and **magnesium** provide relief and protection for sufferers of migraine headaches. >

The Inner Workings Of A Migraine

While we still have much to learn, scientists are discovering that migraines share several basic features with other brain disorders.

Before and during a migraine attack, **blood flow** in specific brain regions begins to drop, causing disturbances in the brain's balance and affecting neurological function.[15-17] A reduction in brain blood flow also occurs during a stroke, and more gradually in the condition known as *vascular dementia*, which reduces your ability to reason and maintain memories.[1,18] In all three cases, the result is increased vulnerability of brain cells to dysfunction, degeneration, and eventually death.[1]

Brain scans show that people with migraines have visible abnormalities that are similar to those seen in stroke victims and in people with dementia.[19,20] And some studies suggest that people with chronic migraines are at an increased risk for strokes and dementia.[3-5]

In addition to problems with **blood flow** to the brain, people with migraines show a harmful imbalance in the brain's *excitatory* and *inhibitory activity*.[2,21,22]

Normally, the brain maintains a healthy balance between excitatory and inhibitory activity by modulating the relative amounts of *neurotransmitters* that brain cells use to communicate across their connections, or synapses.

Sudden and excessive excitation of brain cells, combined with insufficient amounts of input from the calming *GABA* neurotransmitter, produces the electrical "storm" we see as an epileptic seizure.[6] It's now thought that a milder version of this process occurs during a migraine.[7,23] The longer-term effects of this imbalance result in a condition called ***excitotoxicity***, which also occurs in strokes and in the neurodegenerative disorders that produce dementia, such as Alzheimer's disease.[1]

Because the imbalance between excitatory and inhibitory neurotransmitters is common to both migraines and to seizures, neurologists have begun exploring anti-epileptic drugs in the treatment of migraines. Such drugs generally elevate the GABA-related activity in the brain in an attempt to move the brain's balance back to normal.[9,10]

But seizure drugs are extremely powerful medicines with plenty of adverse effects, and physicians and patients alike are understandably reluctant to use them continuously to prevent migraine attacks.[8,10]

Gastrodin: A Powerful, Multi-Targeted Brain Shield

The extract of the root of the orchid *Gastrodia elata* has been used for centuries in traditional Chinese medicine formulas, especially for disorders involving the central nervous system.[24]

Studies show that gastrodin-based formulations improve **brain blood flow**, which is commonly reduced during migraines.[13,15,24] This benefit of gastrodin has been used successfully in China to treat stroke victims, whose decrease in brain **blood flow** is potentially life-threatening.[25-27]

Gastrodin's most exciting mechanism of action stems from its ability to modulate both excitatory and inhibitory neurotransmitters, which makes it particularly beneficial to migraine patients.[12,27-30]

Laboratory studies demonstrate that gastrodin inhibits the enzymes that break down the calming GABA neurotransmitter. By blocking these enzymes, gastrodin helps raise GABA levels back to normal.[12,28]

While increasing the calming GABA, gastrodin also decreases levels of excitatory neurotransmitters in a brain stressed by reduced blood flow.[27,29,30]

Restoring this balance has been shown to be neuroprotective, even against the massive decrease in brain blood flow seen in strokes.[27,29]

The cumulative impact of gastrodin's increase in blood flow and reduction in the excitatory/inhibitory ratio may be behind its impressive success in clinical trials for migraine relief.[31]

In a study of 90 migraine patients, the subjects were given either gastrodin (**50 mg** three times daily) or the prescription drug *flunarizine* (a calcium channel blocker that may enhance blood flow) over a **6-week** period.[31] Both treatments were equally effective at reducing both the duration and total number of migraine attacks. However, gastrodin was more effective than the drug overall, with a higher proportion of people achieving a benefit of **91%** compared with just **76%** in the drug-treated group.[31]

In other studies gastrodin showed a higher overall therapeutic effective rate vs. flunarizine.[32-34]

Clearly, gastrodin's ability to boost brain **blood flow**, shield brain cells from ***excitotoxicity***, and restore the calming inhibitory effects of GABA is effective in migraine headaches as well as in the more immediately-threatening disorders like strokes.[27,29,31] Now let's look at the element **magnesium** to see how it augments **gastrodin** for comprehensive migraine prevention.

Magnesium Complements Gastrodin For Migraines

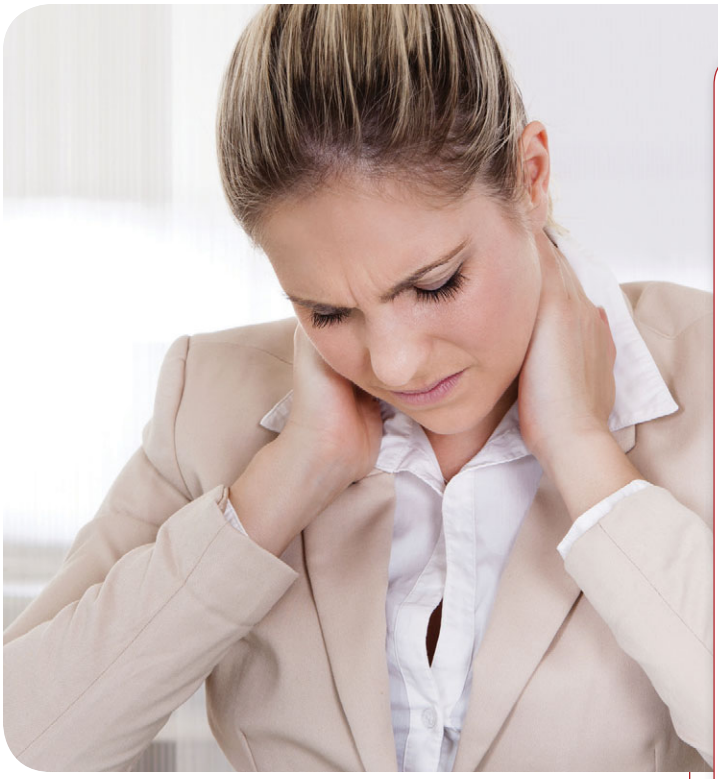
Magnesium is essential in controlling brain electrical activity, especially with regard to brain blood flow and modulating the excitatory-to-inhibitory actions of brain cells.[35] Studies show that up to **50%** of migraine patients are deficient in the amounts of magnesium in their blood during an attack, and that they can have a high ratio of calcium to magnesium.[36-38] This imbalance sets the stage for the contraction of brain blood vessels resulting in a reduction of blood flow. Because of this benefit, magnesium is increasingly indicated for migraine prevention.[14,36-38]

Treatment with magnesium does increase both brain blood flow and its velocity, as shown by researchers using high-tech Doppler ultrasound to look through the skull and measure blood flow velocity in a major brain artery.[39,40]

What You Need to Know

Minimize Migraine Attacks

- **Migraine headaches are common and debilitating.**
- **Mainstream medicine has made little progress at preventing these excruciating episodes, while evidence is accumulating that recurrent migraines place you at risk for strokes and dementia over the long-term.**
- **Mainstream medicine has turned to anti-epileptic drugs that treat seizures because of a strong similarity between the brain chemistry of seizures and migraines, but these drugs are burdened with many side effects.**
- **Two natural substances, gastrodin and magnesium, work on similar biochemical pathways to anti-epileptic drugs to restore the balance of brain neurotransmitters and calm the excited brains of migraine sufferers.**
- **As a bonus, both gastrodin and magnesium boost brain blood flow, which is diminished at the outset of a migraine headache.**
- **Gastrodin and magnesium have proven safe and effective in clinical trials of migraine and many other serious neurological conditions.**
- **Safe, natural migraine prevention is now available in a capsule containing both gastrodin and magnesium.**



What Makes A Headache A Migraine?

Migraine headaches are now ranked in the top 20 on the World Health Organization's list of diseases causing disability worldwide.[55] There are two major subtypes of migraines.

Migraines without auras are the most common type.[57] These headaches have a higher attack frequency and are usually more disabling than migraines with auras.[58]

A typical migraine without aura lasts as little as 4 hours and as long as 72, with classic symptoms of a single-sided headache, pulsating pain of moderate or severe intensity, along with nausea (and often vomiting) and an aversion to light or sounds.[55] These headaches are aggravated by routine physical activity.[57]

Migraines with auras involve recurrent episodes of localized neurological symptoms (weakness, tingling, ringing in the ears, etc.) that develop over 5 to 20 minutes and last usually for less than an hour (the aura itself).[57] A headache like that of a migraine without aura usually, but not always, follows the aura symptoms.

"Premonitory" symptoms, or warning signs of a migraine, can occur hours to a few days prior to a migraine attack; these arise both in people with auras and those without, and these symptoms should not be confused with the presence of an aura. Such symptoms include fatigue, concentration difficulty, and muscle stiffness particularly in the neck.[59]

Like gastrodin, magnesium also has beneficial effects on the balance of excitatory to inhibitory neurotransmitter signaling in the brain. Magnesium is a natural blocker of an excitatory receptor on brain cells, so when ample magnesium is available, those receptors don't trigger the excitatory electrical impulse.[41-43] This allows the brain to move into its more balanced, calm mode. In addition to blocking excitatory receptors, magnesium also supports brain GABA activity, helping to induce a calming environment and further reduce the excessive brain electrical activity associated with migraines and seizures.[44]

And magnesium supplementation has now been proven to be effective at preventing migraine headaches.[40,45-49]

One early study evaluated women with migraine during their menstrual cycles, a common time for attacks to increase.[45] Using **360 mg** of magnesium daily vs. placebo, researchers showed that the number of days with headache was reduced *only* in the magnesium group. Magnesium also improved premenstrual complaints.

A broader study of migraine patients demonstrated a significant reduction in the incidence of **migraine** headaches using a dose of **600 mg/day** of *trimagnesium dicitrate*.[46] Another, similar study showed that irritation of facial and neck muscles, common in migraines, was also reduced by magnesium supplementation.[47] The frequency of migraine attacks was reduced by nearly **42%** in a group treated with *trimagnesium dicitrate* **600 mg/day**, compared with around **15%** of placebo-treated subjects.[48]

Several dramatic studies have now appeared in which complete elimination of migraine pain was accomplished using intravenous *magnesium citrate*. One study revealed an **80%** rate of pain resolution within 15 minutes of the injection, along with complete elimination of hypersensitivity to light or sound, common migraine features.[50] Another study found response to treatment in **100%** of those given the IV magnesium (**7%** in placebo), with complete disappearance of pain in **87%** (**0%** of placebo); all patients receiving IV magnesium had resolution of accompanying symptoms.[51]

In total, at least half a dozen good clinical trials have now demonstrated the utility of oral magnesium in the form of *magnesium oxide* and *trimangesium dicitrate* for preventing migraines and reducing their severity.[40,45-48,52,53] Intravenous ***magnesium sulfate*** has proven its effectiveness in hospitals, including emergency room departments, to treat an existing migraine headache.[49-51,54]

Summary

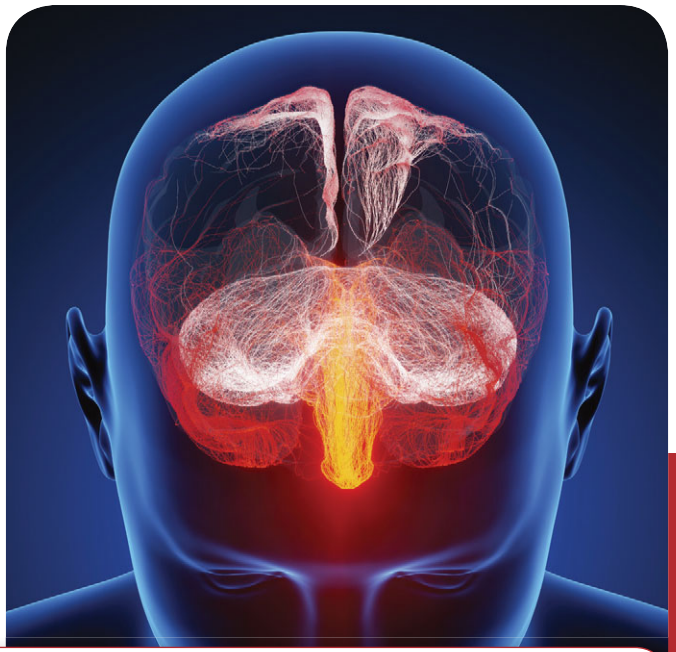
Migraine headaches are common, affecting **18%** of American women and **6%** of men.[55] They rank near the top of disorders that cause debilitation and loss of work or recreational time.[55] And mainstream medicine has yet to find a safe, long-term way to prevent migraines before they begin.[56]

Two natural substances, **gastrodin** and **magnesium**, have shown efficacy in preventing and sometimes treating migraine headaches. Both work to improve brain **blood flow**, which is decreased at the beginning of a migraine attack.[13,24,28,31,37] Both also act in specific (but different) ways to increase brain concentrations of the calming neurotransmitter GABA, while reducing the impact of the excitatory, potentially damaging neurotransmitter glutamate.[11,12,14,27,28,35,37]

These two natural compounds act in similar ways to the desired effects of the anti-epileptic drugs now in widespread use in migraine treatment, and for good reason.[12,14,44] Anti-epileptic drugs lower excitatory glutamate levels while boosting calming GABA levels, similar to gastrodin and magnesium. The downside to these drugs, however, are side effects that decrease their usefulness in the long-term.[8-10]

If you suffer from migraine headaches, gastrodin formulations and magnesium have been shown to calm the brain, reduce dangerous levels of excitotoxicity, and minimize or eliminate migraine headaches.[12,27,28,30,39,40,54-56] This is especially important as we learn how much migraines have in common with debilitating disorders such as strokes and dementia—and how greatly migraines raise your risk for those conditions.[1-5,7]

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



How Anti-Epileptic Drugs Mitigate Migraines

Migraine headaches and epileptic seizures share many clinical and biochemical features.[2,7] They both occur in unpredictable episodes, though the onset of individual attacks may be preceded by a warning aura. Within the brain, both involve an imbalance between neuronal excitation and inhibition, with excitation coming out on top and explaining most of the symptoms.[2]

These similarities have led many physicians to use anti-epileptic drugs "off-label," to attempt to prevent migraine headaches.[8-10,60] Three drugs in particular, valproic acid, gabapentin, and topiramate, are heavily used in this fashion.

All of these drugs act by increasing concentrations of the neurotransmitter GABA, which has a calming, inhibitory effect on the brain. These and other drugs also appear to reduce concentrations of excitatory glutamate, further restoring a normal balance.[9]

But all anti-epileptic drugs have serious side effects that become increasingly likely with long-term use.[8,10] In 2008, the US Food and Drug Administration issued a warning that all anti-epileptic drugs are associated with increased risk of suicidal ideation and behavior.[8]

Fortunately, **gastrodin** and **magnesium**, two natural substances, act on similar biochemical pathways as anti-epileptic drugs to quell excitation and promote brain cell relaxation in migraine sufferers.[11,12,14,27,28,35,37]

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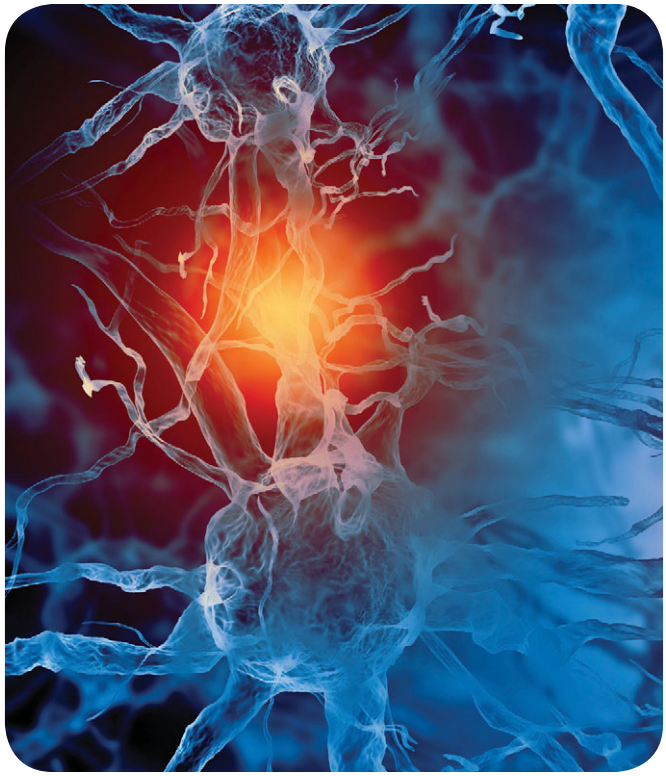

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Magnesium and Brain Health

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 during **Super Sale**, the price is reduced to **$24.30** per unit.

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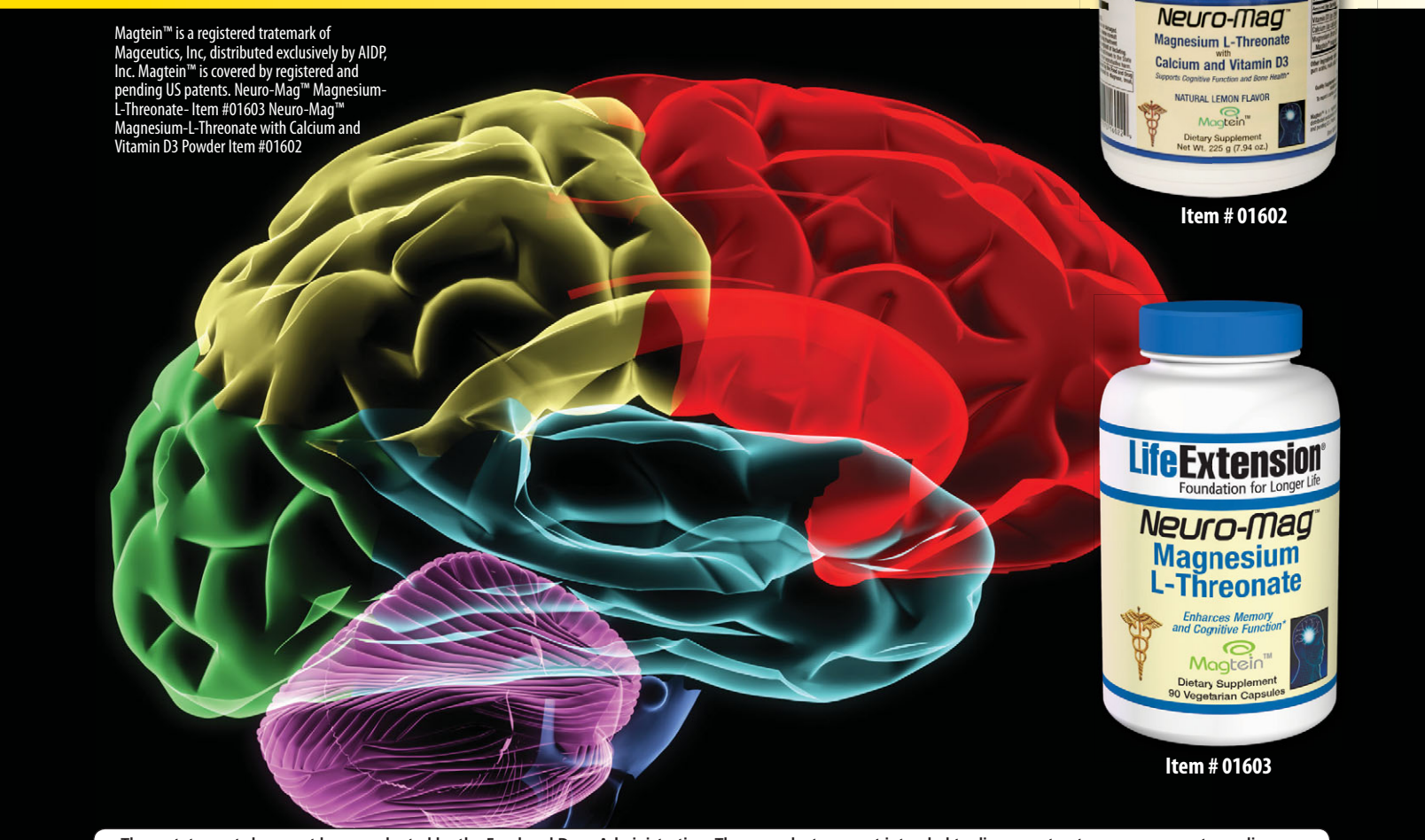
To order Neuro-Mag™ Magnesium L-Threonate Capsules or Powder call 1-800-544-4440 or visit www.LifeExtension.com



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Lessen Cranial Discomfort

Migra-Mag with Brain Shield™

Maintaining balanced neurotransmitter levels along with healthy blood flow to the brain can be an effective strategy to lessen the impact of head discomfort.[1,2]

Research has shown that **magnesium** and **gastrodin** work in unique ways to lessen the distress of cranial discomfort.[3-9]

Scientific studies have confirmed the effectiveness of the ingredients found in the new **Migra-Mag with Brain Shield™** in targeting the key, underlying factors resulting in head-cavity discomfort.[3-9]

Magnesium is the second most-common mineral inside our cells, but many Americans do not obtain adequate amounts of magnesium in their diets.[10] This mineral has been shown to be a major factor in relaxing the smooth muscles within the blood vessels.[11,12] This in turn supports normal blood flow and helps promote head comfort.[9,11,12]

Gastrodin, typically extracted from the root of the Chinese orchid *Gastrodia elata*, has been used for centuries in traditional Chinese medicine formulations.[13] Studies show that gastrodin enhances the presence of the calming neurotransmitter, GABA.[4,5]

Working through *different* yet functionally supportive mechanisms, the individual ingredients in **Migra-Mag with Brain Shield™** have been shown to:

- Support normal relaxation of the constriction of cerebral blood vessels.[6,11,12]
- Help maintain a normal, healthy balance of brain neurotransmitters.[3-5,7,8]
- Help promote normal blood flow to the head cavity.[10,11]
- Help provide support against the normal stress and tension of daily life.[14,15]

To order **Life Extension® Migra-Mag with Brain Shield™**, call 1-800-544-4440 or visit www.LifeExtension.com

Help Promote Head Comfort—with the *dual-action* support of **Life Extension® Migra-Mag with Brain Shield™**.

The suggested three times daily dosage of one vegetarian capsule of **Migra-Mag with Brain Shield™** provides:

Magnesium (as magnesium oxide, trimagnesium dicitrate)	**363 mg**
Brain Shield™ (gastrodin)	**150 mg**

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A bottle of 90 vegetarian capsules of **Life Extension® Migra-Mag with Brain Shield™** retails for $22. If a member buys four bottles during **Super Sale**, the price is reduced to **$13.50** per bottle.

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Looking for **unique gifts** that provide immediate gratification—and health benefits as well?

This holiday season ***Life Extension*** offers an easy way to impress your gift recipients.

For immediate pleasure, you can give a package of guilt- free **Rich Rewards™ Dark Chocolates** high in beneficial **cocoa**—but **100% sucrose/fructose-free!**

Alternatively (or additionally) you can gift the **2014 edition** of ***Disease Prevention and Treatment***, a beautiful reference book that delivers practical guidelines to staying healthy and resolving age-related afflictions.

At these **discount prices**, you can affordably give this dual package of practical gifts that showcases your concern about the *health* of people who are special to you.

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The risks associated with chocolate don't come from its **cocoa** content, but from the **sugar**. A new chocolate is available that has the great taste without the harmful sugar.* **Rich Rewards™ Dark Chocolate** is a unique **70%** dark chocolate that is **100%** sweetened with nature's own sweetener—**xylitol**.

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- **100% Natural**
- **Low glycemic**
- **Vegan**
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- **Lactose free**
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2. Available at: http://www.xylitol.org/questions-about-xylitol. Accessed September 26, 2013.

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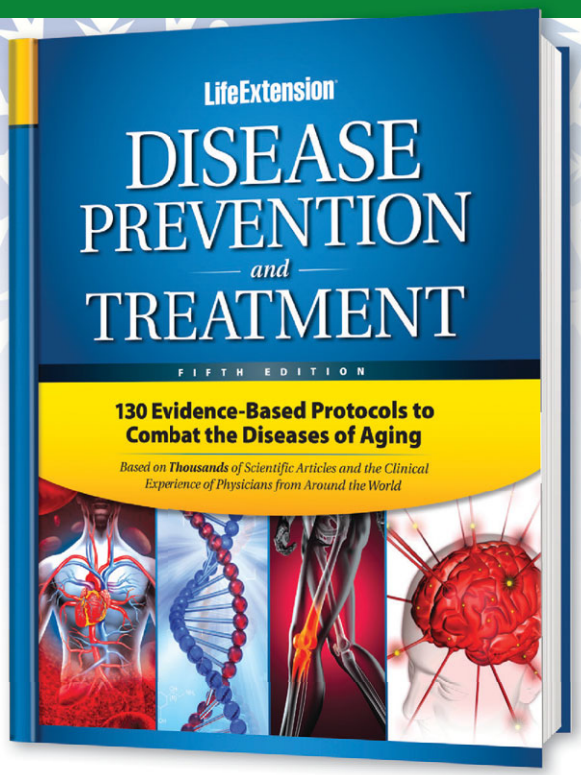
Ingredients: organic cocoa liquor, xylitol, organic cocoa butter, organic soy lecithin, natural vanilla flavor, rice flour. Contains soybeans. Contains no fructose or sucrose.



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BY MORRIS EAGLETON

CYTOKINE

Turn *OFF* the CYTOKINE SWITCH

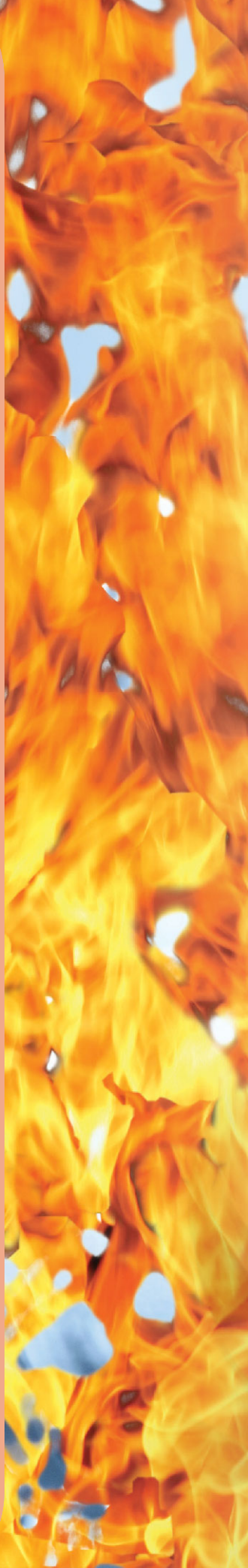
In a remarkable series of discoveries, scientists have uncovered the main biochemical "switch" that turns on many of the chronic diseases of aging.

Known as **HMGB1** (for "High Mobility Group Box-1"), this intriguing protein molecule triggers the release of the ***cytokines***–a collection of chemical signals–that generate **inflammation** in your body.[1]

And as inflammation accumulates, aging accelerates, to the point that most scientists now speak about "inflammaging" as a single entity that underlies disorders that cause premature death, including conditions ranging from diabetes and atherosclerosis to lung disease and cancer, to name just a few.[2-4]

In an exciting new development, the discovery of HMGB1 as the switch that turns "on" accelerated aging has led to the development of a safe and effective means of turning "off" that switch and reducing premature senescence.

Research over the past few years has demonstrated that two natural ingredients can directly control **HMGB1**, switching off the massive cytokine flow that generates age-related inflammation and leads to disease and premature death.



Tested in prestigious hospital research laboratories, two plant extracts, **mung bean seed coat** and **green tea**, extended life spans and increased survival rate caused by inflammation in blood poisoning (sepsis) by up to **82%**.[5,6]

This combination of natural ingredients can reduce total body exposure to the ravages of inflammation. By doing so, maturing individuals can protect themselves from accelerated aging, guard against inflammation-induced chronic disorders, and live a longer and more productive life.

HMGB1: The "Cytokine Switch"

Inflammation is a helpful reaction when your body is under attack by germs, or following an injury. Under those circumstances, inflammation represents the first step in the healing process, bringing in white blood cells to clean up after the invaders have been destroyed and boosting blood supply to the injured or damaged area.

But ongoing, *chronic* inflammation is another matter entirely—it has been linked with many age-related, lifespan-shortening disorders, including heart disease, cancer, chronic obstructive pulmonary disease (COPD), diabetes, and others.[3,4]

Scientists have now discovered that HMGB1 has been implicated in acute inflammation—and that sustained high levels of HMGB1 are responsible for maintaining the chronic inflammation that speeds the aging process.[1]

It turns out that HMGB1 inside your body cells is very much a good thing; it helps regulate the way your genes are expressed, acting as a kind of "general manager" of cellular processes.[7] But when a cell is damaged, its contents of HMGB1 leak out, and trouble begins.[8]

HMGB1 And The "Cytokine Storm"

This released HMGB1 binds to receptor molecules on immune system cells, acting as a "danger signal" that triggers them to release cytokines.[1,7] Cytokines, in turn, are chemical signaling molecules that call in still more white blood cells, which release still more cytokines, in a deadly frenzy of activity.

Taken to the extreme, such activity can result in a "cytokine storm," a massive, body-wide release of cytokines that can shut down your body's entire system.[9-11] During a *cytokine storm*, which can be potentially lethal, over 150 inflammatory mediators are released throughout the body.[12] We dealt with the prospect of a cytokine storm on a large scale during the 2003 outbreak of SARS ("severe acute respiratory syndrome") and more recently in 2009 during the H1N1 outbreak.[13-15]

Fortunately, most of us never have to face a true cytokine storm. Instead, we experience the cumulative effects of lower levels of cytokines, maintaining a steady and rising drumbeat of chronic inflammation that destroys our blood vessels, bones, and joints, promotes cancer development, and lays waste to our brain cells to rob us of memory and cognition.[1,16-45]

Elevated HMGB1 levels have now been found to be associated with many acute and chronic inflammation-related disorders, including:

- Asthma and chronic obstructive pulmonary disease (COPD)[16-19]
- Atherosclerosis, lipid disturbances, and their consequences, coronary artery disease, heart attacks, strokes, and congestive heart failure[20-28]
- Autoimmune disorders, including lupus, multiple sclerosis, rheumatoid arthritis, type I diabetes, and others[29-34]
- Cancer[35,36]
- Diabetes[27,28,31,34,37]
- Inflammatory bowel diseases (Crohn's disease and ulcerative colitis)[38,39]
- Neurodegenerative disorders[21,23,29]
- Obesity[40]
- Surgical procedures, even those without obvious complications[43]
- Trauma, including hemorrhagic shock, traumatic brain injury, acute lung injury and bone fractures[41,42,44,45]
- Viral and other infections[46,47]

Fighting HMGB1 To Reduce Inflammation

Impeding **HMGB1** is turning out to be a powerful means of slowing and reversing inflammatory processes, with laboratory results showing an increase in survival rate in the face of ongoing inflammatory damage.[5,6] Scientists are just now beginning to make strides in the fight against inflammation in asthma, in arthritis, in multiple sclerosis, and in inflammatory bowel diseases (Crohn's disease and ulcerative colitis), using specialized large molecules (antibodies) that bind HMGB1 and prevent its cytokine-mediated effects.[18, 48-55]

Don't expect to see these treatments available from Big Pharma any time soon, though. Therapies employing HMGB1-neutralizing antibodies have shown promise in animal models; however, they have not been tested in clinical trials. Moreover, neutralizing antibody treatments are faced with several challenges, including poor drug response and adverse side effects like acute hypersensitivity reactions.[56]

But there's hope for all of us who recognize the importance of suppressing inflammation in pursuit of a long and healthy life. The anti-HMGB1 properties of **mung bean seed coat** and **EGCG** from **green tea leaf** have now been harnessed to tamp down inflammation and slow the accelerated aging that accompanies chronic inflammatory processes.[5,6]

Since these products are natural and have millenniums of human use to back their safety, you can use them as a daily supplement to gain protection from chronic, inflammation-induced diseases, and slow down certain aging processes in your body.

Both mung bean and green tea are components of traditional Asian cuisine and medicines. Mung bean is an excellent source of protein that, unlike most other beans, is virtually free of flatulence-inducing factors, making it a natural food for the ill.[57] And mung bean soup is credited with having "cooling" properties in traditional Chinese medicine, a prescient idea that accords perfectly with present-day discoveries about the bean's anti-inflammatory properties.[58]

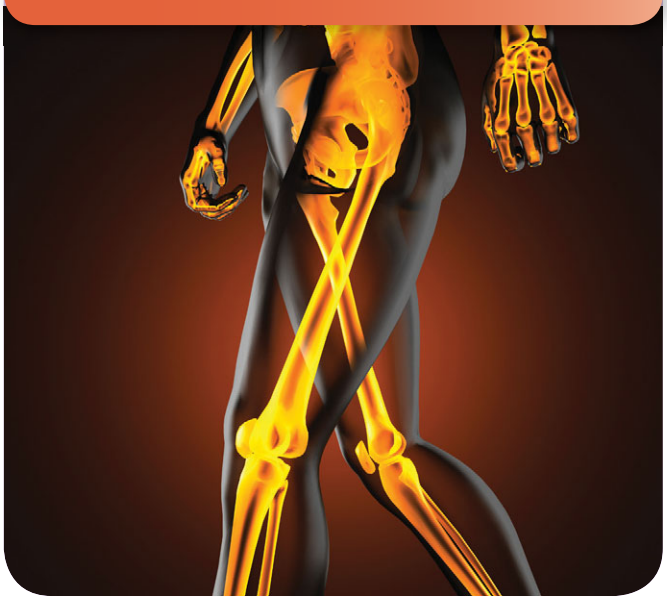
Green tea has been consumed in China for millennia and has been used as a health aid since at least the 12th century for its many beneficial effects. Today, green tea is known to be one of the most prominent sources of plant polyphenols with anti-inflammatory actions.[59]

The sources of the anti-inflammatory properties of these two ancient health-promoting substances are becoming increasingly clear under the scrutiny of modern science. Both of these ingredients have been shown to interfere at several different points in the cascade of events that leads to HMGB1 release from stressed or damaged cells, making them

What You Need to Know

Turn Off Your Cytokine Switch

- **Your body ages more rapidly the more chronic inflammation you have.**
- **Many chronic diseases that cause premature death and disability are accelerated by higher levels of inflammation.**
- **The recent discovery of the "cytokine switch," HMGB1, has allowed scientists for the first time to think about ways to quell chronic inflammation and help promote successful aging by controlling HMGB1 levels in your body.**
- **Drugs that fight HMGB1 are potentially years away from practical use; however, extracts from mung bean seed coat and green tea offer safe, natural anti-HMGB1 therapy—and they are available for oral use now.**
- **Studies show that mung bean seed coat extract and EGCG from green tea prevented death from acute inflammation by counteracting HMGB1, suggesting that their use will be effective in other inflammatory diseases, such as the chronic diseases of aging.**



especially potent in battling inflammation from several causes, infectious and non-infectious, acute and chronic.[5, 6,60-63]

The HMGB1-lowering effect of mung bean is found mainly in the seed coat portion of the bean. Mung bean seed coat extract reduces HMGB1 levels both within and outside of immune cells stimulated by bacterial toxins.[5] Two flavonoid molecules in particular, *vitexin* and *isovitexin*, account for a large part of the anti-HMGB1 activity of the extract. Studies show, however, that these molecules are effective only in crude extracts of the bean; commercially purified versions are much less useful.[5]

Fed to rats both before and after exposure to heat stress (swimming in 104°F water), mung bean seed coat extract reduced blood markers of excessive oxidant stress, while also strengthening the body's natural antioxidant defense system.[58] These findings bear out the traditional view of mung bean as a "cooling" food.

Green tea extract dose-dependently attenuates HMGB1 release from cells exposed to bacterial toxins; this activity was later found to be produced by EGCG, the major beneficial component in green tea.[6] And EGCG drives down HMGB1 release in immune cells even when given **2** to **6** hours *after* exposure of cells to the toxin.[6,62]

Mung bean seed coat extract and EGCG are available in oral form, making their combination an effective HMGB1-blocking therapy.[5,6]

Mung Bean and Green Tea

The most dramatic illustration of how mung bean seed coat and EGCG from green tea leaves can save lives comes from two recent studies at the Department of Emergency Medicine, North Shore University Hospital on Long Island, New York; University School of Medicine, New York; and the Feinstein Institute for Medical Research, Manhasset, New York.[5,6]

Researchers were interested in the therapeutic role of targeting HMGB1 in ***sepsis***. Sepsis, commonly called blood poisoning, kills more than 225,000 Americans (mostly older adults) every year in intensive care units, despite modern antibiotics and life-saving technologies.[64]

It is also a useful model for understanding the role of anti-HMGB1 therapies in the most extreme example of out-of-control inflammation. In sepsis, massive amounts of HMGB1 trigger an outpouring of cytokines. It is this resulting inflammation, and not the infecting germ, that ultimately kills the patient.[65,66] And once those cytokines are on the loose, it's typically too late to fight back with anti-cytokine therapies.[67-69]

Instead of turning to expensive and dangerous anti-HMGB1 antibodies, however, as other researchers had done, researchers at the North Shore University Hospital and Feinstein Institute for Medical Research chose to study **mung bean seed coat** extract and **EGCG** from green tea leaf extract, based on their known anti-HMGB1 activities.

The experiments were simple but dramatic. The researchers first induced sepsis in laboratory mice, dooming them to almost certain death without intervention.[5,6] In half of the mice, however, the researchers did intervene—but not until **24** hours *after* the induction of sepsis.

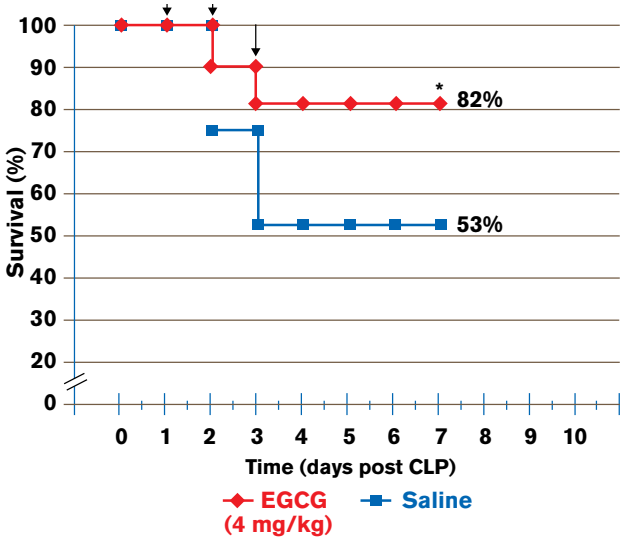
In their first experiment, the scientists gave the mice EGCG from green tea, or a salt-water control, at **24**, **48**, and **72** hours following the onset of sepsis.[6]

There was no other intervention: no antibiotics, no IV fluids, no ICU drugs or equipment.

As described in Figure 1, repeated administration of EGCG conferred protection agaist lethal sepsis by significantly increasing the survival rate of animals from **53%** to **82%**.[6]

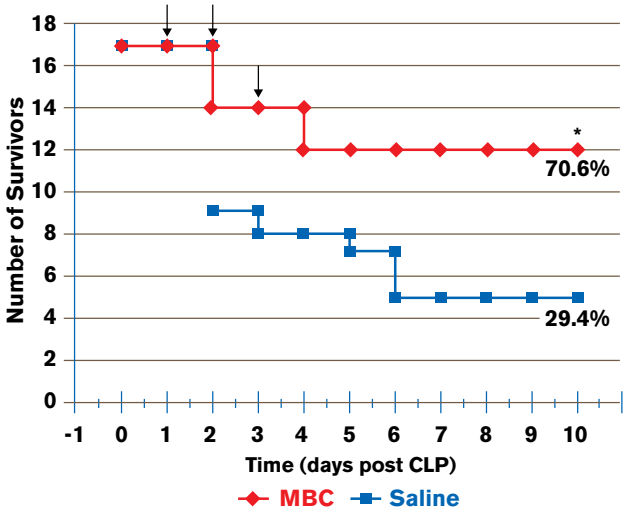
Encouraged by this result, the researchers turned to **mung bean seed coat extract**.[5] You can see this outcome in **Figure 2**; using the same experimental design as in the previous study, the mice were given the extract (or saline control) beginning the day after induction of sepsis. Mung bean seed coat conferred a significant protection against lethal sepsis, increasing animal survival rates from nearly **30%** to just over **70%**.[5]

FIGURE 1: Survival Graph of Septic Mice Supplemented with EGCG



EGCG significantly protects mice against lethal sepsis. Mice were induced with sepsis on day zero, and 24, 48, and 72 hours later, they received EGCG or saline. Survival was then monitored.[6]

FIGURE 2: Survival Graph of Septic Mice Supplemented with Mung Bean Seed Coat Extract



Sepsis was induced in mice on day 0. On days 1, 2, and 3, mice received an oral dose of either mung bean seed coat extract or saline control solution. The red diamonds show the number of survivors on each day in the supplemented group, with blue squares showing surviving control animals.[5]

It's impossible to overstate the significance of these results. In unprecedented research, septic shock was significantly prevented, and animals were rescued from an otherwise likely death, ***using a simple, natural, oral treatment***. The secret to their success was the sharp drop in HMGB1 levels induced by both EGCG and mung bean seed coat extract.[5,6]

How does all this relate to you?

Most of us will, mercifully, never have to deal with sepsis or the out-of-control inflammation that it can produce. The combination of EGCG and mung bean seed coat that contain such potent HMGB1-suppressing activity means that we can all benefit from reduced levels of total-body **chronic inflammation**.

Chronic inflammation has recently been shown to reduce the length of telomeres, the "living fuses" in our chromosomes that shorten with age.[70,71] Thus, reduced chronic inflammation might translate to a longer and

healthier life. This is a very literal demonstration of how chronic inflammation acts as an aging accelerator, fueled by excessively high HMGB1 levels. Mung bean seed coat extract and EGCG might help you to literally slow down your aging processes and prolong your life.

Summary

Chronic inflammation accelerates aging, producing symptoms that we recognize as diseases that cause early death. Scientists have now discovered the accelerator switch, in the form of **HMGB1**, the molecule that ***triggers*** the release of **inflammatory cytokines** under a wide variety of circumstances.

Anti-HMGB1 therapies, therefore, are avidly sought-after by big pharma companies. While producing dramatic results in the laboratory, however, no anti-HMGB1 drug is anywhere near market-ready because treatments to date use large antibody molecules that can't be given orally and that have unacceptable side effects.

But **mung beans** and **green tea**, in use for thousands of years in traditional Chinese medicine, contain safe, powerful HMGB1-fighting substances. Extracts of mung bean seed coat and EGCG from green tea leaf extract can be given orally, and in preclinical studies have proven to be highly effective at shutting down HMGB1-induced inflammation in a life-saving fashion. ●

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

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

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

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

Restore Cellular Energy with...

The retail price for 60 100 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is **$62**. If a member buys four bottles during **Super Sale**, the price is reduced to **$37.80** per bottle.
Item # 01426

The retail price for 100 50 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is **$58**. If a member buys four bottles during **Super Sale**, the price is reduced to **$35.78** per bottle.
Item # 01425

The retail price for 30 200 mg softgels of **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** is **$62**. If a member buys four bottles during **Super Sale**, the price is reduced to **$37.80** per bottle.
Item # 01431

To order Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ call 1-800-544-4440 or visit www.LifeExtension.com

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Ratings based on results of the 2013 ConsumerLab.com Survey of Supplement Users. More information at www.consumerlab.com.

INTRODUCING

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 every day 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]

Also, mung bean seed coat extract has been shown to support the body's natural antioxidant defense system.[7]

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**

Item# 01804

A bottle of 30 vegetarian capsules of **Life Extension® Cytokine Suppress™ with EGCG** retails for **$30**. If a member buys four bottles during **Super Sale**, the price is reduced to **$18.23** per bottle.

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

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Discount Prices For Premium-Quality Products

Life Extension® members are longevity enthusiasts who take extraordinary steps to stave off disease, aging, and death. When members buy products from the **Life Extension Foundation Buyers Club**, they are assured of receiving the highest quality products based on the latest scientific studies that demonstrate benefits.

The **discounts** available to Foundation members enable them to purchase **premium-quality** supplements at prices below those charged by commercial companies.

Here are some examples of **savings** members enjoy during the annual **Super Sale**:

	Our Low Retail Price	SUPER SALE Member-Volume Discount Price Per Bottle
Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract **120 softgels, Item # 01482** Super purified EPA/DHA fish oil plus sesame lignans and potent olive (fruit and leaf) extract to provide critical omega-3 fatty acids and essential components of the Mediterranean diet.	**$32**	**$16.81** (ten-bottle purchase)
Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ **100 mg, 60 softgels, Item # 01426** The superior ubiquinol form of CoQ10 plus a natural compound (shilajit) shown to double mitochondrial CoQ10 levels.	**$62**	**$35.10** (ten-bottle purchase)
Life Extension Mix™ • 315 tablets, Item # 01855 High-potency multi-nutrient formula now with the bioactive methylcobalamin form of B-12 and Wild Maqui extract to provide a boost of powerful delphinidin anthocyanins.	**$98**	**$46.91** (ten-bottle purchase)
Vitamin D3 • 5,000 IU, 60 softgels, Item # 01713 High-potency vitamin D in a softgel to provide greater absorption into the bloodstream.	**$11**	**$6.68** (four-bottle purchase)
Ultra Natural Prostate **60 softgels, Item # 01895** Comprehensive support for an aging prostate gland utilizing botanical extracts plus boron and now with ThymoQ™ Phospholipid Complex for enhanced absorption.	**$38**	**$21.60** (twelve-bottle purchase)
Super Zeaxanthin with Lutein, Meso-Zeaxanthin, and C3G **60 softgels, Item # 01685** Supports night vision and macular density.	**$22**	**$13.37** (four-bottle purchase)
Super K with Advanced K2 Complex • 90 softgels, Item # 01724 More potent formula includes 200 mcg of long-acting MK-7 form of vitamin K2 plus 1,000 mcg of K1 and 1,000 mcg of the MK-4 form of vitamin K2.	**$30**	**$18.23** (four-bottle purchase)
PQQ Caps with BioPQQ® • 10 mg, 30 vegetarian capsules, Item # 01500 Promotes mitochondrial biogenesis (generation of new mitochondria) in aging cells.	**$24**	**$14.85** (four-bottle purchase)
DHEA (Dehydroepiandrosterone) • 25 mg, 100 capsules, Item # 00335 A hormone that declines with aging, benefits overall health .	**$18**	**$10.13** (four-bottle purchase)
Mitochondrial Energy Optimizer with BioPQQ® • 120 capsules, Item # 01768 To maintain healthy cellular function, protein structural integrity, and mitochondrial biogenesis.	**$94**	**$56.70** (four-bottle purchase)
Super Bio-Curcumin® • 400 mg, 60 vegetarian capsules, Item # 00407 Super-absorbable formulation promotes healthy lipids, joint function, and healthy DNA. Absorbs up to seven times greater than conventional curcumin.	**$38**	**$23.63** (four-bottle purchase)
CoffeeGenic® Weight Management™ with Green Coffee Extract **90 capsules, Item # 01707** Green Coffee Extract (350 mg) plus irvingia, chromium, and green tea extract.*	**$48**	**$28.35** (four-bottle purchase)
Optimized Resveratrol with Synergistic Grape-Berry Actives **250 mg, 60 vegetarian capsules, Item # 01430** High potency trans-resveratrol with quercetin, plus trans-pterostilbene and fisetin to support DNA "longevity genes." One per day resveratrol formula.	**$46**	**$27.90** (four-bottle purchase)

To order call toll-free 1-800-544-4440

	Our Low Retail Price	SUPER SALE Member-Volume Discount Price Per Bottle
Bone Restore with Vitamin K2 • **120 capsules, Item # 01727** Highly absorbable forms of calcium plus FruiteX B® OsteoBoron®, magnesium, zinc and K2. Available with or without vitamin K2.	$24	$14.85 (four-bottle purchase)
Cognitex with Brain Shield™ and Pregnenolone • **90 softgels, Item # 01897** Optimal support for the brain. Includes gastrodin, alpha glyceryl-phosphoryl-choline, vinpocetine, phosphatidylserine, uridine 5'-monophosphate, and more. Available with or without pregnenolone.	$62	$35.78 (four-bottle purchase)
Brain Shield™ **600 mg, 60 vegetarian capsules, Item # 01802** Gastrodin provides unparalleled, multi-factorial support for cognitive and circulatory brain function.	$33	$20.25 (four-bottle purchase)
Reishi Extract Mushroom Complex • **60 vegetarian capsules, Item # 01708** Standardized mushroom extract to restore and regulate immune system function.	$30	$18.23 (four-bottle purchase)
Triple Action Cruciferous Vegetable Extract **60 vegetarian capsules, Item # 01468** Comprehensive cruciferous plant extract formulation, with I3C, DIM, apigenin, and other DNA-protecting vegetable concentrates.	$24	$14.85 (four-bottle purchase)
European Milk Thistle • **60 softgels, Item # 01822** High-absorption phospholipid-enhanced formula delivers nearly five times more active components to the bloodstream to support detoxification processes as well as promote liver health and function.	$28	$16.88 (four-bottle purchase)
Super R-Lipoic Acid • **300 mg, 60 vegetarian capsules, Item # 01208** Superior efficacy compared to alpha-lipoic acid—supplies 240 mg of stabilized R-lipoic acid.	$49	$30.38 (four-bottle purchase)
ArthroMax® Advanced with UC-II® and AprèsFlex® • **60 capsules, Item # 01618** Promotes joint health and may promote comfortable joint structure and function.	$36	$21.60 (four-bottle purchase)
FlorAssist™ Probiotic Liquid Vegetarian Capsules **60 liquid vegetarian capsules, Item # 01806** Supports digestive health by utilizing a novel "capsule in a capsule" delivery system to provide 15 billion CFU of six clinically validated strains of beneficial bacteria to all areas of the digestive tract.	$33	$20.25 (four-bottle purchase)
Advanced Bio-Curcumin® with Ginger and Tumerones • **60 softgels, Item # 01808** Triple action formula acting on multiple signaling pathways to deliver broad-spectrum protection against inflammation.	$30	$18.23 (four-bottle purchase)
Natural Stress Relief • **30 vegetarian capsules, Item # 00987** With lemon balm extract to help relieve stress and sleeplessness, and L-theanine to promote relaxation without drowsiness.	$28	$16.20 (four-bottle purchase)
Gamma E Tocopherol with Sesame Lignans • **60 softgels, Item # 00759** Provides the critical gamma tocopherol form of vitamin E plus sesame lignans to enhance the free radical scavenging benefits of alpha and gamma tocopherols.	$32	$19.58 (four-bottle purchase)
Cytokine Suppress™ with EGCG • **30 vegetarian capsules, Item # 01804** Combines mung bean seed coat and EGCG from green tea to modulate a healthy inflammatory response and support immune function.	$30	$18.23 (four-bottle purchase)
Super Booster Softgels with Advanced K2 Complex • **60 softgels, Item # 01680** A convenient one per day softgel that includes optimal potencies of gamma-tocopherol, sesame lignans, lycopene, lutein, ginkgo, chlorophyllin, and both forms of vitamin K2.	$42	$25.65 (four-bottle purchase)
Neuro-Mag™ Magnesium L-Threonate • **90 vegetarian capsules Item# 01603** Optimal form of magnesium to protect synaptic density of neurons.	$40	$24.30 (four-bottle purchase)

Order online at www.LifeExtension.com/SuperSale

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

BY RAEGAN LINTON

Novel Method Boosts MILK THISTLE Liver Concentration 10-Fold!

The **liver** functions to ***cleanse*** our body of pollutants and internally-generated waste products like **ammonia**.[1] It is the largest organ inside your body and has at least **500** life-sustaining functions.[1]

Liver function declines with aging.[2] Left unchecked, toxic overload can lead to conditions ranging from cirrhosis and hepatitis to non-alcoholic fatty liver disease and even cancer.[3-6]

Optimal liver function is critical to all aspects of health.[1] Maintaining robust liver capacity ensures our body will effectively rid itself of heavy metals, pollutants, and other toxins.[1]

Milk thistle has been used to detoxify the liver and even help liver cells regenerate themselves for over 2,000 years.[6,7] Studies confirm that milk thistle can protect liver function, prevent liver damage, and normalize elevated liver enzyme levels.[8-10]

Scientists have discovered a novel way of delivering more of the active constituents in **milk thistle** to your liver–about **ten times more**–which as you'll soon read is great news.[11,12] This new delivery system also resulted in **5-fold greater** concentrations of ***silybin*** in the bloodstream which is important because milk thistle extracts have potent systemic benefits.[13]

Extracts from milk thistle *(Silybum marianum)* have been used for centuries for their preventive and curative properties for liver disease.[7,9] Modern science has identified the specific components in milk thistle extracts responsible for these protective effects,[9] one being *silymarin*.[14,15]

Silymarin is a potent antioxidant and anti-inflammatory, which helps it fight the root causes of liver disease.[6,16-19] Further research has identified a specific molecule, called *silybin*, as the most active component in silymarin.[9,20] >

Why Our Livers Love Milk Thistle

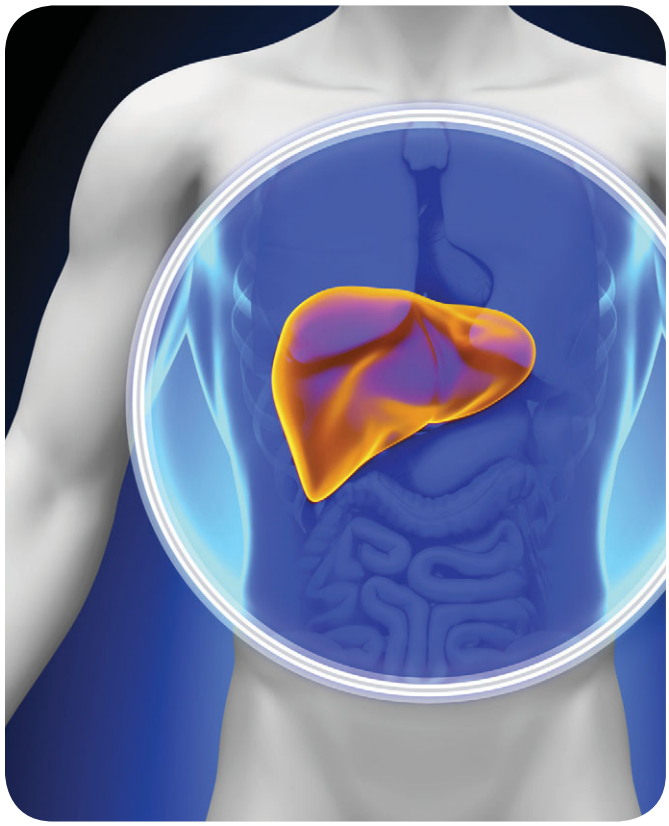
There are many different kinds of liver disease, each with its own set of causes, symptoms, and impact. But virtually all liver disorders come down to a few main causes, namely oxidative stress and inflammation that lead to liver cell damage and loss of function.[3]

While most of us take our liver for granted, this workhouse of the body labors tirelessly to rid the body of accumulated toxins. Fortunately, the liver is well-equipped to deal with those toxins, operating a diverse field of enzyme-driven detoxification systems to neutralize the majority of threats.[2]

But those systems operate at a high cost to the liver itself, generating massive amounts of free radicals that damage liver cell membranes and release inflammatory cytokines.[21]

Over time, all of those insults can damage your liver, impairing its ability to carry out its multiple detoxification tasks, and also its many other functions, such as producing bile to aid digestion, ridding the body of dangerous ammonia, making coagulation factors that help blood clot properly, manufacturing hormones, and a host of other physiological processes essential to life.

That is what makes prevention absolutely essential—and what makes **milk thistle** so vital to maintaining a healthy liver.



Daily Protection For Your Liver

Milk thistle works in various unique ways to protect your liver on a daily basis from the onslaught of toxic materials and oxidative stress. Here are just a few of the ways that milk thistle provides protection for one of your most valuable organs.

- Silymarin's potent **antioxidant** properties help to prevent and even *reverse* the oxidation of fats in liver cell membranes that lead to inflammation and leakage of liver cell contents into the bloodstream.[9,22,23] Silymarin boosts liver cells' levels of natural antioxidant molecules such as *glutathione*, helping cells recover more quickly from oxidative stress.[5,24]
- Silymarin reduces liver **inflammation** by inhibiting enzymes, such as 5-LOX, COX, and NFkB, that produce inflammatory cytokines and other deleterious signaling molecules that contribute to liver damage.[25,26] Even if liver damage has already occurred (as it has in most of us by middle age), silymarin has powerful regenerative properties, boosting liver cells' ability to make new proteins and repair damage before it can spread.[25]
- Silymarin has been shown to **prevent liver fibrosis**, the first step in the last stage of advanced liver disease, by protecting normal liver structural cells and blocking them from turning into fibrous, muscle-like cells.[27,28]
- Silymarin has the ability to block "Phase-I" liver enzymes that can activate toxins we ingest.[25] "Phase-I" liver enzymes convert certain compounds into oxidative substances that are difficult for the body to excrete.[2] In the presence of silymarin, these dangerous molecules can be excreted harmlessly in urine.

Alcoholic Liver Disease

Of all the substances that can damage your liver, one of the best-known is alcohol. While low-level consumption of alcohol (especially wine) has proven health benefits, larger amounts impose extreme oxidative stress on liver tissue.[29] Ultimately, that leads to inflammatory changes and the release of cytokines that damage the liver and other tissues, which creates a vicious cycle and leads to still further oxidative stress.[2,19,30] Animal studies have found that silymarin has the potential to *reverse* alcohol-induced liver damage.[16,19]


Milk Thistle

In animal studies, acute alcohol administration produced prominent accumulations of fat in liver cells, with small areas of dead tissue (necrosis), accompanied by a rise in liver enzymes in the blood (from leaking, dying cells).[16] Alcohol also sharply lowers the liver's content of glutathione (the main intracellular antioxidant), leaving cells vulnerable to further oxidant damage. In addition, excessive alcohol consumption markedly increases levels of the destructive cytokine TNF-alpha. Amazingly, when the animals were supplemented with **silymarin**, all of these adverse alcohol-induced changes were prevented.[19]

A human study of 36 people with chronic alcoholic liver disease revealed similar findings.[31] Patients took either silymarin or placebo every day for six months. At baseline, all patients had elevations of liver enzymes and other markers of liver damage in their blood; they also had biopsy-proven tissue damage.

Following treatment, however, all of the markers of liver damage had normalized in the **silymarin** group, with minimal changes among placebo recipients. Repeated biopsies revealed improvement in the silymarin group, but no changes in the placebo patients. This study was a powerful demonstration of silymarin's liver-protective activity, and its ability to improve liver function in alcoholic patients.[31]

Non-Alcoholic Fatty Liver Disease

Non-alcoholic fatty liver disease (NAFLD) has rapidly become the most common cause of chronic liver disease in industrialized nations.[32] The disease is a direct consequence of our high-fat, high-carbohydrate diets and our sedentary lifestyles.

Mainstream medicine has little to offer for those suffering from non-alcoholic fatty liver disease. Fortunately, silymarin holds out substantial promise.[19] In fact, one study found that silybin was more effective than prescription *rosiglitazone* in certain areas of treatment.[5]

Animal studies have shown that both silymarin and silybin reduce oxidation of liver cell membranes, reduce blood liver enzyme levels, and enhance production of protective **adiponectin**.[5,33]

Human studies have also been very encouraging. Because non-alcoholic fatty liver disease is part of the metabolic syndrome, attempts have been made

What You Need to Know

Benefits of Milk Thistle

- The liver is threatened daily by a constant barrage of toxins, unhealthful dietary components, and infections; it also produces many new toxic, oxidizing molecules as a result of its normal activity.
- Liver disease claims the lives of thousands of Americans each year, and disrupts the health of millions more.
- Mainstream medicine has virtually nothing to offer victims of liver disease, but an age-old remedy, the extract of milk thistle, provides bright new hope.
- Milk thistle extracts are antioxidant and anti-inflammatory; they also boost normal liver regenerative properties and fight specific toxins.
- The most powerful component of milk thistle, silybin, is poorly absorbed on its own, but complexed with phosphatidylcholine, another beneficial nutrient, its bioavailability to the liver is boosted 10-fold.

to treat it with insulin sensitizing drugs like *metformin* and *pioglitazone*, but with only modest success. In a 2012 study, researchers compared both drugs with silymarin (**140 mg/day**).[34] All three treatments produced improvements in fasting blood sugar, lipid profiles, insulin levels, and insulin resistance, along with decreases in blood levels of liver enzymes. But the greatest decrease in the liver enzymes was seen in the **silymarin** group, indicating greater protection against liver damage.[34]

As promising as silybin is on its own, the availability of silybin *in combination with phosphatidylcholine* has proven to be a major step forward in managing non-alcoholic fatty liver disease. One early study of patients with non-alcoholic fatty liver disease, with or without the complication of hepatitis C infection, showed significant reductions in plasma markers of liver fibrosis (the first step towards deadly non-alcoholic steatohepatitis know as NASH), and significant improvements in insulin resistance, using a combination of silybin, vitamin E, and phospholipids.[35]

A more recent, larger trial of a unique combination of silybin with phosphatidylcholine and vitamin E demonstrated significant improvements in liver enzymes, insulin resistance, and the appearance of liver tissue on biopsy, none of which were seen in placebo recipients.[27] In addition, body mass index was completely normalized in **15%** of supplemented patients, compared with just **2%** of controls. And in patients with hepatitis C infection, the supplement improved markers of liver fibrosis.

Non-Alcoholic Steatohepatitis

In about **10%** of cases, non-alcoholic fatty liver disease progresses to *non-alcoholic steatohepatitis* (NASH), a dangerous condition that ultimately produces liver fibrosis, cirrhosis, and even cancer.[33,34] Milk thistle shows promise for this extremely serious form of liver disease as well.

In experimental *non-alcoholic steatohepatitis*, even a crude milk thistle extract reduced severity, lowered blood levels of liver enzymes, and dramatically reduced liver cytokine levels, while increasing liver glutathione (the liver's protective natural antioxidant).[36] Silybin has been shown to completely restore vital liver functions in animals with *non-alcoholic steatohepatitis*, improving insulin sensitivity and markers of oxidative and inflammatory damage.[26,37]

It also suppressed the transformation of normal liver structural cells into the tough, inelastic tissue characteristic of liver fibrosis and cirrhosis, the end-stage phases of liver disease that follows *non-alcoholic steatohepatitis*.[28]

Increasing Milk Thistle Absorption

As beneficial as milk thistle is, there's one thing keeping it from reaching its fullest potential: **silybin**, the star component of silymarin, does not dissolve well in water.[20,25] That makes it have poor bioavailability, meaning it's difficult for your body to absorb.[11-13,24]

But scientists have now developed a simple but effective technology to overcome silybin's poor bioavailability. The solution is to mix the silybin with a nutrient called phosphatidylcholine.

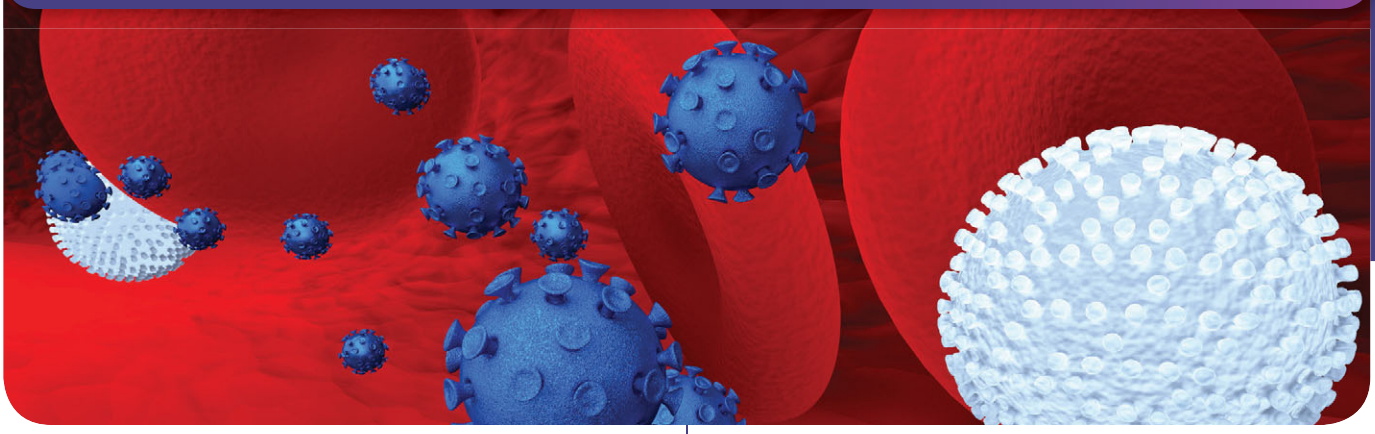
Phosphatidylcholine is a major component of cell membranes; it can facilitate transport across the cells lining the intestines, making it an ideal "carrier molecule" for silybin.[24,47] Scientists believe that the phosphatidylcholine molecularly bonds to the silybin molecule and wraps around it, ushering it through the membranes of cells in the intestinal tract.[24]

The **silybin-phosphatidylcholine complex** is absorbed nearly **5 times better** than silymarin alone, and its ultimate concentration to the liver, its target organ, is **10-fold greater** than silymarin alone.[11-13]

In a study of rats exposed to various liver toxins (including dry-cleaning fluid, acetaminophen, and alcohol), silybin plus phosphatidylcholine protected against the telltale rise in plasma levels of liver enzymes (a marker of liver damage), while the same doses of either nutrient alone had no detectable effect.[8]

A series of human trials has found that this complex also has better results than silymarin or silybin alone, lowering serum levels of liver enzymes and producing clinical improvement in studies of liver cirrhosis and hepatitis caused by alcohol, drugs, and viruses.[24]

Impact of Liver Diseases on US Population	
Disease	**United States Data**
Non-alcoholic Fatty Liver Disease (NAFLD)[48]	Prevalence- 8.1 to 30 million
Alcoholic Liver Disease[49]	Annual Deaths- 15,990
Chronic Liver Disease/Cirrhosis[50]	Annual New Cases- 101,000 Annual Deaths- 31,903
Hepatitis B[51]	Annual New Cases- 3,374
Hepatitis C[52]	Annual New Cases- 17,000 Number Living with Chronic Infection- around 3.2 million



Viral Hepatitis

Viral hepatitis is a catch-all phrase for infections by several very different viruses that affect the liver, causing liver damage and raising the risk for liver cancer—especially in the case of hepatitis B and C. Both hepatitis B and C can set up chronic, long-lived infection (chronic active hepatitis) that can progress to fibrosis and cirrhosis.[38]

Silymarin treatment in acute viral hepatitis can speed the normalization of liver enzymes in the blood, indicating a *regression* of active liver damage.[39]

A group of patients with chronic active hepatitis took **240 mg** of silybin combined with phosphatidylcholine, or placebo, twice daily for 7 days.[40] Supplemented patients had significant drops in all markers of liver damage, while control patients experienced no changes.

While effective against hepatitis-induced liver damage, oral silymarin produces no reduction in the number of virus particles infecting the body, but studies of silymarin given intravenously reveal a substantial antiviral effect in **hepatitis C** patients who have not responded to standard antiviral treatment.[41]

The characteristic yellowish skin of hepatitis victims is the result of high levels of *bilirubin*, a liver-produced substance normally excreted in stool. But patients receiving oral silymarin for hepatitis (regardless of which virus type) had earlier improvement in both skin coloration and clinical markers of liver damage compared to control patients.[42]

Cirrhosis

Milk thistle extracts have been shown to benefit cirrhosis, the end-stage result of liver damage. Cirrhosis can result from multiple causes, including alcoholic and non-alcoholic fatty liver disease, viral hepatitis, and many toxins.[43] In other words, cirrhosis doesn't represent a single diagnosis, but a largely preventable progression of the oxidation and inflammation produced by all those other causes.

Unfortunately, prevention has so far eluded most medical interventions. As a result, those with cirrhosis are faced with either a slow and uncomfortable death, or a liver transplant, which is costly, dangerous, and not available to everyone.

Fortunately, milk thistle extracts are showing considerable promise in this desperate situation. One early study found that in people with alcohol-induced cirrhosis, those taking silymarin survived longer than control subjects.[44] A later study confirmed that finding, with **58%** of silymarin-treated patients surviving longer than 4 years, compared with just **39%** of the placebo group.[45]

Even when liver disease has reached the stage of cirrhosis, silymarin treatment can normalize elevated liver enzymes in the blood, *indicating that it has slowed the progression of liver damage*.[46] Proof of this comes from a study in an extremely challenging population: alcoholic diabetics with cirrhosis. In that group, silymarin treatment, **600 mg/day**, reduced markers of cell membrane oxidation and improved insulin resistance.[3] In fact, silymarin recipients had less overproduction of their own insulin, and required less insulin by injection, compared with control patients.[3] The early stages of type II diabetes are characterized by excess pancreatic secretion of insulin to suppress elevated glucose. As type II diabetes progresses, the pancreas loses its ability to produce enough insulin and some patients require insulin injections. A therapy that reduces the amount of insulin needed by injection, or its excess production in the pancreas is considered beneficial.

Summary

The seed extract of the common milk thistle, rich in silymarin and its active component, **silybin**, has now been thoroughly proven to mitigate and, in some cases, reverse liver damage. These compounds have efficacy in liver disease caused by alcohol, by diet and inactivity, by viruses, and by exogenous toxins. They can slow the deadly progression to cirrhosis, the end-stage of all liver diseases.

Researchers have found that when **silybin** is combined with **phosphatidylcholine**, the absorption and bioavailability of an oral dose of silybin is increased **10-fold**.[11] This breakthrough improves the delivery of the benefits of milk thistle extracts for liver health. ●

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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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 during **Super Sale**, the price is reduced to **$22.95** per bottle.

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

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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

New Absorption-Enhanced

MILK THISTLE

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Milk thistle extract is one of nature's most potent weapons to support liver health. Until recently, however, the technology hasn't been available to fully harness this plant's full benefits.[1]

The problem has been that the star component of milk thistle, called ***silybin***, does not dissolve well in water.[2,3] This makes it difficult for your body to absorb all of it.[2,4,5]

Scientists have developed a novel technology to overcome silybin's poor bioavailability. The solution is to mix ***silybin*** with a nutrient called *phosphatidylcholine*.

Phosphatidylcholine facilitates transport across the intestinal lining into the bloodstream, making it an ideal "carrier molecule" for ***silybin***.[4,5] Scientists believe that phosphatidylcholine molecularly bonds to silybin, ushering it through the membranes of cells in the intestinal tract.[4]

This new **silybin-phosphatidylcholine** complex is absorbed nearly **5 times better** than silymarin alone, and its concentration in the liver, its target organ, is **10-fold greater** than silymarin alone.[6-8]

The suggested twice daily dosage of one softgel provides:

Milk Thistle Phospholipid Proprietary Blend **Milk Thistle Extract** (seed) [std. to 80% silymarin (480 mg), 30% Silybin (180 mg), and 8% Isosilybin A and Isosilybin B (48 mg)], Phospholipids	**760 mg**
SILIPHOS® Phytosome Milk Thistle Extract (seed) [std to 29.7% silybin (47.52 mg)]	**160 mg**

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A bottle containing 60 softgels of the new ***absorption-enhanced*** **Milk Thistle** retails for **$28**. If a member buys four bottles during **Super Sale**, the cost is reduced to only **$16.88** per bottle—a savings of nearly one third!

This novel Milk Thistle extract with phosphatidylcholine contains standardized concentrations of **silybin** and **isosilybin A** and **B** not found in other milk thistle extracts! Compare the price of **Milk Thistle** to commercial silymarin supplements, and members will see that this new formula is available at one of the lowest costs per milligram.

Contains soybeans.

SILIPHOS® is a registered trademark of Indena S.p.A., Italy.

To order European Milk Thistle with Advanced Phospholipid Delivery call 1-800-544-4440 or visit www.LifeExtension.com

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Monday, June 23	Corfu, Greece	8:00 AM	3:30 PM
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Wednesday, June 25	Mykonos, Greece	8:00 AM	6:00 PM
Thursday, June 26	Olympia (Katakolon), Greece	9:00 AM	6:00 PM
Friday, June 27	*At Sea*		
Saturday, June 28	Venice, Italy	8:00 AM	

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- Mediterranean cooking demonstrations
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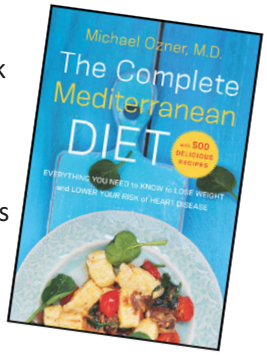

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SUPER FOODS

BY WILLIAM GAMONSKI

The Mighty Mung Bean

The expression "good things come in small packages" certainly holds true for mung beans. With its dense ***phenol*** content and broad array of nutrients, the mung bean forges an impressive defense against several chronic, age-related diseases including cardiovascular disease, diabetes, cancer, and obesity.

Mung Bean's Tale

Archeological evidence suggests that mung beans (*Vigna radiata*) were domesticated in India as early as 1500 BC before spreading throughout Asia and finally to the United States.[1] Their medicinal properties, such as protection against heatstroke, and high nutritional content have been valued for centuries. These tiny, oval-shaped beans are available in several forms, with the peeled spilt version popular in Indian dishes, and the processed version of bean sprouts and starch noodles more common in Asian cuisine. Although mung beans have been cultivated in America since the 1830s, **75%** of the 15-20 million pounds of mung beans consumed in the US each year are imported.[2]

Combating Heart Disease

Oxidized LDL cholesterol is one of the most powerful predictors of future cardiovascular events.[3] It accumulates within the endothelium (inner lining of blood vessels) and triggers a series of inflammatory events that result in the formation of foam cells, a key factor in the early development of arterial plaque.[3] In a study published in the journal *Human and Experimental Toxicology,* scientists discovered that mung beans are highly effective at inhibiting LDL oxidation due to their potent free-radical scavenging properties.[4]

The versatile mung bean has also been shown to target another significant cardiovascular disease risk factor in high blood pressure. Hypertensive rats supplemented with mung bean sprout extracts for one month experienced significant reductions in systolic blood pressure.[5] This antihypertensive effect might be related to mung bean's high concentration of protein fragments known as *peptides,* which act to reduce the activity of angiotensin-converting enzyme (ACE) that constricts blood vessels and raises blood pressure.[5]

Magnesium deficiency is widespread among Americans, with an estimated nearly seven out of 10 adults consuming less than the recommended daily allowance (RDA).[6] This is alarming data since a recent study involving more than 58,000 men and women aged 40-79 revealed that those with the lowest intakes of dietary magnesium had a **51%** increased risk of heart disease mortality, compared to those with the highest intakes.[7] Replacing processed foods with magnesium-rich ones like mung beans is a simple strategy for improving your magnesium status and averting cardiovascular and other health consequences.

Controlling Diabetes

Low-glycemic index foods are ideal for people with type II diabetes, since they cause a small, slow rise in postprandial (after-meal) blood glucose levels. This prevents dangerous rapid spikes in blood sugar and insulin that impair vascular health and increase cardiovascular disease.[8] When human volunteers ate a **50-gram** portion of low-glycemic beans like mung beans, they exhibited a **45%** lower glucose response than when they ate an equivalent amount of other carbohydrate foods, such as grains, breads, pasta, and breakfast cereals.[9] Other research shows that adding beans to a meal with a high-glycemic food lowered overall postprandial glucose response in individuals with type II diabetes.[10]

In a study reported in the *Journal of Agricultural and Food Chemistry,* type II diabetic mice supplemented with mung bean extract daily for five weeks resulted in significant reductions in blood glucose levels and plasma C-peptide, an indicator of insulin release, thereby producing measurable improvements in glucose metabolism and insulin sensitivity. Researchers also noted that elevated triglycerides, a common lipid abnormality among type II diabetics, were also significantly decreased.[11]

Advanced glycation endproducts (AGEs) form as the result of the chemical reaction between glucose and proteins in the body. These dysfunctional molecules damage tissue in the kidneys and retina, which accelerates the diabetic complications of kidney dysfunction and blindness.[12] When Chinese researchers analyzed the AGE inhibition activity of sixteen legumes, mung beans ranked second only to the common bean.[13] This positive effect is believed to be attributed to their two main constituents, vitexin and isovitexin.[14]

Anti-Cancer Effects

A recent study reported in the journal *BMC Complementary and Alternative Medicine* showed that mung beans suppress the growth of human liver and highly aggressive cervical cancer lines through multiple mechanisms, including cytotoxicity, inducing anti-cancer cytokines, halting cancer cell cycle, and triggering apoptosis (programmed cell death).[15]

These beneficial modes of action might be responsible for mung bean's protection against other cancers as well. Korean researchers compared dietary factors in 213 stomach cancer patients with an equal number of controls. Those who consumed a modest amount of mung bean pancakes daily exhibited a lower risk of stomach cancer.[16]

Harvard School of Public Health researchers studied the relationship between phenolic-rich foods and the risk of breast cancer, one of the most commonly diagnosed cancers among American women.[17] They reported that consuming beans like mung beans at least twice per week slashed breast cancer risk by **24%**.[17]

Mung beans contain a high amount of insoluble fiber and resistant starch, which undergo bacterial fermentation in the large intestine to produce butyrate. This short-chain fatty acid provides substantial protection against colon cancer by inhibiting DNA damage and cutting off the blood supply tumors require for growth.[18] In one study, daily bean intake was associated with an up to **42%** reduction in colon cancer risk after researchers adjusted for several potential confounding factors including age and gender.[19]

Obesity Fighter

The one-two punch of fiber and protein makes mung beans one of the most effective dietary foods to combat obesity and enhance weight loss. In a study published in the *Journal of Nutrition,* researchers observed that a single test meal with high-fiber beans produced a **two-fold** greater increase in the satiety hormone *cholecystokinin* (CCK), compared to a control test meal without beans.[20]

To investigate whether this short-term satiety effect translates into reduced food intake and weight loss in the long-term, scientists conducted a randomized controlled trial in 173 obese men and women. Subjects were assigned to a high-fiber, bean-rich diet containing **1.5 cups** of beans daily or a low-carbohydrate diet for 16 weeks. Both groups did not

restrict calories intentionally. At the end of the intervention period, the bean group decreased its body weight by over **9 pounds** on average, results that were similar to the low-carbohydrate diet group.[21]

Summary

Substituting processed foods with mung beans fits the bill perfectly for filling in the nutritional gaps of the standard American diet, while substantially decreasing the risk for age-related diseases including cardiovascular disease, cancer, diabetes, and obesity. ●

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

Mung Bean Nutritional Facts, One Cup Cooked[22]

Nutrients	Amount	DV(%)
Folate	321.0 mcg	80%
Dietary Fiber	15.4 g	61%
Manganese	0.6 mg	30%
Magnesium	97.0 mg	24%
Thiamine	0.3 mg	22%
Iron	2.8 mg	16%
Copper	0.3 mg	16%
Potassium	537.0 mg	15%

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Asian Energy Boost is specifically designed to provide all-natural support for cellular and physical energy levels to help you stay alert without negative effects, such as crashing or uncomfortable jitters.

Support for Energy Homeostasis

Your body's natural mechanism of ***homeostasis*** maintains normal balance during daily challenges, helping you remain energized and focused—*when properly supported*. Ongoing stress, however, means your body seldom gets time to restore your natural equilibrium.

For individuals seeking optimum homeostasis and sustainable energy, **Asian Energy Boost** combines the potent Asian mushroom ***Cordyceps sinensis*** and a specially *fermented* form of the ***Panax ginseng*** root. Combined, they deliver potent energy support.

Cordyceps sinensis

One of the most valued medicinal mushrooms in China, ***Cordyceps sinensis*** has been revered traditionally for its multiple benefits, including support for energy and endurance.[2,3] Studies show that the *Cordyceps* in **Asian Energy Boost** supports energy levels by promoting healthy levels of ATP[3,4]—the energy currency used throughout the body.

Cordyceps also supports healthy insulin sensitivity in those already within normal range,[5,6] allowing your cells to efficiently take up sugar from your blood to enable stable energy output.

In one study, healthy adults age 50-75 took **333 milligrams** of Cordyceps extract **three times daily** for 12 weeks. These study subjects were able to perform a stationary bicycle exercise at maximal levels for over **10% longer** before muscle fatigue could be scientifically detected.[7]

Panax ginseng

Panax ginseng is an important adaptogenic herb that can improve our ability to manage stress.[8,9] Recognized as one of the most beneficial ginsengs available, it is the species traditionally used in China and Asia. For enhanced potency, **Asian Energy Boost** uses *Panax ginseng* that has been naturally fermented, a process shown to increase absorption of the active compound—Compound K (*Ginsenosides metabolite)*—by over **15-fold**.[10]

Evidence indicates that ginseng supports **ATP production** in the **mitochondria**.[11,12] Studies have shown that this extract promotes both physical *and* mental energy, including cognitive performance.[13-18]

Complementary Effects

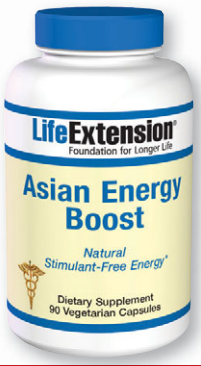
The *Cordyceps* and fermented *Panax ginseng* in **Asian Energy Boost** work in a ***complementary*** fashion to help maintain ATP levels and your body's energy stores.

Cordyceps extract supports ATP production when oxygen availability is insufficient.[3] *Panax ginseng* supports ATP production at the much higher levels possible when more sufficient oxygen is available—such as a challenging but prolonged task.[19]

The suggested daily dosage of three vegetarian capsules of **Asian Energy Boost** provides:

Cordyceps *(Paecilomyces hepiali)* **extract** (mycelia)	**1,000 mg**
[providing 70 mg cordycepic acid]	
GS15-4™ Fermented Asian ginseng extract (root)	**165 mg**

A bottle of 90 vegetarian capsules of **Life Extension® Asian Energy Boost** retails for $24. If a member buys four bottles during **Super Sale**, the price is reduced to **$14.85** per bottle. **Contains soybeans.**



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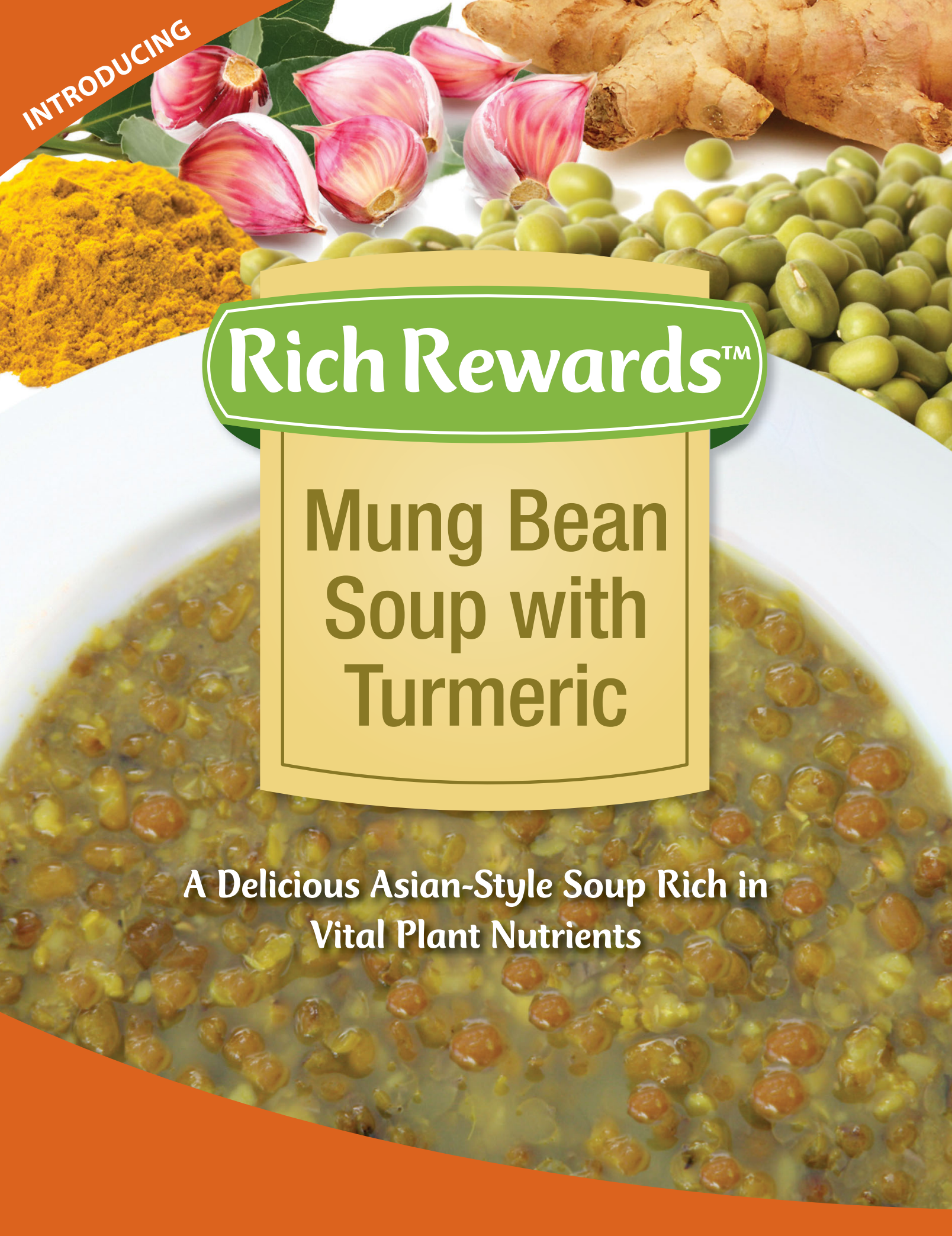
To order Life Extension® Asian Energy Boost, call 1-800-544-4440 or visit www.LifeExtension.com


INTRODUCING
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.

Item # 01810

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. During **Super Sale** the member price is **$8.78**.

* *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

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 mund bean and is complimented 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

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!

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 provides 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 during **Super Sale**, the price is reduced to just **$20.25** per bottle.

†Colony Forming Units.

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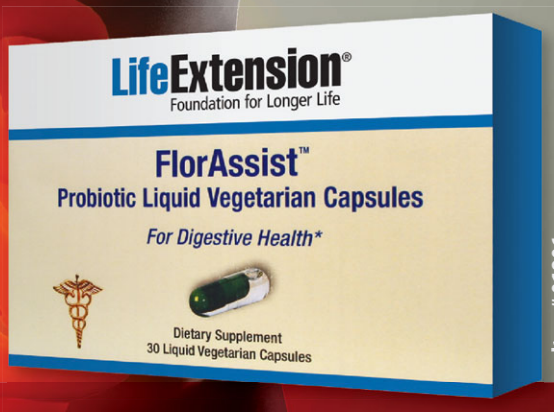

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To order FlorAssist™ Probiotic Liquid Vegetarian Capsules, call 1-800-544-4440, or visit www.LifeExtension.com

WELLNESS **PROFILE**

BY JON FINKEL

Carmen Fusco

The Research Scientist Behind Rejuvenex®

Carmen Fusco

Behind mainstream topical creams is a faceless corporation that mixes together ingredients with varying degrees of efficacy and potency. While most consumers pay exorbitant fees for anti-aging face creams, *Life Extension* readers have been kept abreast of the newest formulations by one of the most respected names in the nutrition and skin-care business, **Carmen Fusco**.

Fusco is a research scientist with a Master of Science from New York Medical College. Along with that, she has an extensive list of credits in the academic world, including having spent time as a faculty member at both Syracuse University and Cornell University as an instructor in pharmacology. She is also a member of the Clinical Nutrition Research Unit sponsored by the Strang Cancer Prevention Center, Weil Medical College of Cornell, Rockefeller University, and New York Medical College. As an Associate Professor of Nutrition at New York Medical College, she also taught third-year medical students how to read blood tests for health, not just disease. But if you've been reading Life Extension magazine, you know her best as the scientist behind the highly-acclaimed **Rejuvenex®** line of skin products, the first of which was created over **30 years** ago.

Revolutionizing Skin Care

"I began working in nutritional medicine with Dr. Benjamin Frank, who was a pioneer of RNA and RNA cream," Fusco says. "When we first put RNA on the skin, it was very drying. I wanted to add the natural moisturizing factor. I was the first person to include an alpha hydroxy lactic acid in a skin cream, which has now become standard in countless skin care products. At the time, I was motivated by many of the patients in my nutritional practice who were always telling me that if they looked good, they felt good. When I see patients, I give them a program for life. In particular, *Rejuvenex® Factor serum* improves the health of our most visible organ, the skin. I have seen thousands of patients since the first cream came out and it is true, part of feeling good is looking good!"

In the beginning, Rejuvenex® was an RNA-based cream with a few additional ingredients and natural moisturizers like Sodium PCA. And this is where Fusco separates herself from the pack of most commercial companies that develop a product and then pump out the same formula forever. Despite the success of Fusco's first iteration of Rejuvenex®, which was a tremendous hit with Life Extension members, she immediately began thinking about ways to upgrade it.

But this isn't the story of a formulator simply pouring over medical journals and then ordering ingredients from a factory to mix into her creams without knowing how it would come out. That's not how she does things. Fusco, who prides herself on going the distance for her clients and her products, took a completely hands-on approach, even going so far as picking Ginkgo leaves in Central Park, near her home, and then experimenting with them herself to see how much she could stimulate cell renewal.

"I work directly with my chemists and have tested every single batch of Rejuvenex®," she explains. "That's my philosophy. I like my products to deliver and also have side benefits, rather than side effects."

From that first formula to today, Fusco has experimented with a plethora of ingredients, many of which, even though she was the first to use them, have been widely copied by international skincare corporations. For instance, while much of the anti-aging skin care world was promoting a vitamin A analog called Retin-A that showed an ability to reverse photoaging, Fusco had already been using a natural version of the vitamin, called retinyl palmitate in Rejuvenex®, which has similar cell renewal properties. She was also on the forefront of blocking harmful UV rays long before cosmetic companies had recognized their danger, which led her to include vitamins C and E in her formulations to quench skin-damaging free radicals.

Today's *Rejuvenex® Factor serum* contains over two dozen ingredients, with some of the most recent additions being taurine, which helps neutralize free radicals and inhibit premature aging of the skin, and modified hyaluronic acid, which holds more moisture in skin cells and helps target free radicals.

"As the product has evolved, I have continued to incorporate every item and test them myself," Fusco says. "One of my proudest moments was when Rejuvenex® was exhibited at the Johns Hopkins Medicine event called 'A Woman's Journey.' The exhibit was named

Carmen Fusco's Supplement List

- Melatonin
- Multivitamin/Mineral antioxidant formula (in divided doses)
- CoQ10
- Acetyl L-Carnitine
- R-Lipoic Acid
- Evening Primrose Oil as a source of GLA
- Magnesium Aspartate

'Feeding the Skin from Within... and Without'."

Fusco's products have also garnered vast media acclaim, as she has been featured in *Town and Country* and *The New York Post*. She has also caught the eye of several celebrities who swear by her products. Television star Sela Ward told *Rosie* magazine that *Rejuvenex®* Face Cream is one of Sela's Secrets.

Beyond Rejuvenex®

Celebrity praise is nothing new for Fusco, who has seen film icon Tom Cruise, legendary comedian Rodney Dangerfield, and baseball Hall of Famer Whitey Ford as clients. But whether you're a household name or simply someone looking to improve their health, in her practice, Fusco suggests nutrition and supplement strategies that she herself lives by.

"When I see clients I request full blood tests for health, not just for disease," she says. "I have spent a lot of time studying the circadian rhythm and I recommend that all of my clients eat according to the body clock in order to produce the optimum amount of serotonin from tryptophan for sleeping and to provide the adequate amount of sleep to recover from the stresses of the day."

Every morning Fusco starts her day with some fresh fruit (no juices) to restore the glycogen used up during sleep, followed by protein, either plant protein or organic eggs for energy and alertness. She then follows that up with a lunch of two cups of vegetables and fish, like sardines, salmon, cod, or scrod. Occasionally, she'll substitute turkey for the fish.

At night she likes to have a meal including some carbohydrates, because carbohydrates stimulate insulin to quickly remove amino acids from the bloodstream except **tryptophan**. Since tryptophan competes with other amino acids for absorption into the brain, by clearing the bloodstream other amino acids, tryptophan gets a free pass through the blood-brain barrier were it is converted to soothing **serotonin**. Serotonin provides the recovery period from daily stress, and as we age and our pineal gland atrophies, serotonin can be converted to melatonin for recovery sleep.

"I started seeing patients in 1976 and so many people who saw me were surprised at the foods that I'd recommend they eat," Fusco says. "I'd say that you can have one cup of coffee in the morning, one glass of wine at night and one piece of dark chocolate, all of which are filled with antioxidants."

In addition, she exercises on a regular basis for overall health to complement her diet.

"I play an hour of singles tennis against a pro two mornings a week so I can challenge myself and improve my strokes," she says. "I don't like chopping the ball or hammering it. I play on Tuesdays and Fridays and there is an indoor tennis court that I can use in the winter. You have got to exercise to decrease triglycerides and reduce stress hormones. For me, living and working in New York City along with the kind of stress I have, it takes more than recovery sleep, exercise, and supplements to combat stress. Listening to music helps promote the joy and beauty of relaxation so necessary to a healthy life."

On the supplement front, she takes magnesium every night in addition to Life Extension's melatonin. She takes a multivitamin, CoQ10, acetyl l-carnitine, and R-lipoic acid. Just like the side benefits she refers to in her face cream, the side benefits of the lifestyle Fusco recommends have given her boundless energy, which also proves the inverse of what she said early on, "when you feel good, you look good." ●

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

What Makes Rejuvenex Factor® Serum Unique?

30 Bioactive Compounds: While other products rely on **2 or 3** skincare ingredients–*Rejuvenex® Factor serum* contains **30 bioactive compounds**, each scientifically proven to provide significant anti-aging benefit.

Evolving Formula: *Rejuvenex® Factor serum* now includes vegetal filling spheres, taurine, pichia/resveratrol, matrixyl synthe' 6, salicylic acid, DMAE, hylasome EG 10, and others. Each of these bioactive compounds has been scientifically proven to work in a different way to target a different skin issue.

Synergistic Skin Care: Working in concert, the ingredients in *Rejuvenex® Factor serum* accelerate collagen production, promote shedding of old cells, decrease pore size, deliver more moisture to cells, lift wrinkles, provide anti-sagging activity, stimulate skin cell scaffolding, fight oxidation, combat inflammation, and inhibit glycation–one of the chief causes of cellular aging.

All-In-One Solution: Some compounds lift, some promote collagen, some nourish and moisturize, some plump up wrinkles, some inhibit sagging…but to benefit from all of them, you'd need to layer about a dozen expensive creams on your skin, some costing up to **$600** each! *Rejuvenex® Factor serum* delivers all proven beneficial compounds in a single serum–at a fraction of the cost.

Deep-Layer Delivery System: Too many skincare products sit on top of your skin, where they have virtually no effect on the cellular tissue below the surface. *Rejuvenex® Factor serum* employs QuSome™, a patented delivery system that carries the greatest amount of active ingredients directly down to the deepest layers of skin tissue possible–and provides sustained release for 6 to 9 hours!

The World's Most Comprehensive ANTI-AGING Skin Serum

Carmen Fusco, The Women Behind Rejuvenex®

Today's skincare revolution began in **1983** when a pioneering RNA-based cream known as **RejuveneX®** moved out of its tightly controlled clinical setting and became available to the public.

The original formulation that launched numerous copycat products was developed by research scientist, university instructor of pharmacology, and nutrition consultant, **Carmen Fusco**.

For three decades, Fusco has continually updated **RejuveneX®** to reflect the very latest anti-aging findings backed by extensive scientific research. Most commercial face creams, on the other hand, contain only a fraction of the ingredients shown to produce noticeable improvements in aging skin.

28 Bioactives In A Deep-Penetration Format

Carmen Fusco's latest **RejuveneX® Factor** formulation comes in a ***serum*** format that ensures superior **absorption** of its total of **28** active, skin-enhancing compounds.

To get this entire network of synergistic skin **protecting** and **rejuvenating** compounds elsewhere, you'd need to layer on a dozen expensive creams—each providing only **2 or 3** of these active ingredients.

The good news is that—for a fraction of the cost—**RejuveneX® Factor Firming Serum** delivers optimal dosages of the full range of clinically proven technologies…to promote the appearance of ***youthful***, ***firmer***, and more ***vibrant skin***.

Rejuvenex® Factor Firming Serum Provides 28 Active Compounds

Taurine: Helps neutralize free radicals and inhibit premature aging of the skin.

Salicylic acid: Supports production of new skin cells.

Ceramide-2: Promotes the shedding of old skin cells and helps retain moisture.

Thioctic acid (alpha lipoic acid): Supports the skin's normal antioxidant protection.

Lactic acid: Helps the body shed dead skin cells.

Vitamin C (ascorbyl phosphate): Helps strengthen the skin barrier and promote collagen production.

Hylasome® EG10 (hyaluronate crosspolymer): Holds more moisture in skin cells and targets free radicals.

Glycerin: Minimizes the appearance of wrinkles by supporting elasticity and moisture retention.

Avobenzone: Helps protect the skin from the visible effects of sunlight exposure.

Glycine soja (soybean) oil: Promotes collagen production and skin elasticity and supports UV defense.

Panthenol: Potent support for skin's normal moisturizing ability.

DMAE (dimethylaminoethanol): Helps smoothe and firm skin.

Botanimoist® AMS *(Pyrus malus)*: Helps boost hydration of skin cells.

Botanistat® PF-64: Helps preserves serum against environmental toxins (*avoiding the preservative paraben*).

Pomegranate *(Punica granatum)* extract: Reduces visible signs of aging by promoting skin cell turnover.

Item# 01621

Green tea *(Camellia sinensis)* extract: Provides antioxidant support to help inhibit signs of premature aging.

White tea *(Camellia sinensis)* extract: Protects the skin from visible signs of UV exposure.

QuSome® delivery system: Breakthrough delivery system delivers maximum active ingredients directly into the skin.

Matrixyl® synthe'6™: Helps minimize the appearance of fine lines and wrinkles.

Vegetal Filling Spheres™: Expand with moisture to allow plumping of wrinkles.

PolyP (sodium polyphosphate): Supports production of collagen.

Pichia-fermented Resveratrol extract: Increases hydration, diminishing the appearance of lines.

Tocopherol (vitamin E): Superior penetration helps reduce the appearance of fine lines and wrinkles.

Tocopheryl acetate (vitamin E): Promotes skin repair and natural defenses against premature skin aging.

Beta-glucan: Supports collagen formation, defense against UV exposure, and healthy skin.

RNA: Promotes production and turnover of new skin cells.

Sodium PCA: Helps skin stay moisturized, soft, supple, and firm.

Hydroxydecyl ubiquinone (CoQ10): Supports collagen and elastin for smoother, younger-looking skin.

RejuveneX® Factor Firming Serum

Serum vs Cream—comes in a more concentrated serum format that is thinner than a cream and provides deeper **penetration** of its **28** skin-enhancing compounds.

Airless Pump—protects the integrity and **potency** of the bioactive ingredients.

QuSome™ Technology—utilizes a patented, **deep-layer** cellular delivery system that provides sustained release for **6 to 8 hours**!

All Natural—uniquely **free** of paraben, irritants, estrogenic chemicals, mineral oil, and synthetic fragrances.

Save 60% During Super Sale

A 1.7 oz bottle of **RejuveneX® Factor Firming Serum** retails for $65. If a member buys two bottles, the price is reduced to **$38** a bottle. If six bottles are purchased during **Super Sale**, the price is *only* **$26** a bottle, which represents a huge **60%** discount off the retail price.

Six **RejuveneX® Factor Firming Serums** will last most people an entire year! Members can thus obtain a **12-month** supply of multi-ingredient **RejuveneX® Factor** for less than they might pay for one single jar of cream in a department store.

To order Rejuvenex® Factor Firming Serum call 1-800-544-4440 or visit www.LifeExtension.com

Blood Testing
The Ultimate Information

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

Five Easy Steps:

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

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

For Our Local Members:

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

MOST POPULAR PANELS

Life Extension Member Pricing

COMPREHENSIVE PANELS

MALE LIFE EXTENSION PANEL (LC322582) — $269

Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. **CBC** includes immune (white) cell count, red blood cell count and platelet count. Also includes:

DHEA-S	**C-Reactive Protein**
TSH for thyroid function	**Homocysteine**
Estradiol	**Free Testosterone**
Vitamin D 25- hydroxy	**Total Testosterone**
Hemoglobib A1c	**PSA** (prostate-specific antigen)

FEMALE LIFE EXTENSION PANEL (LC322535) — $269

Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. **CBC** includes immune (white) cell count, red blood cell count and platelet count. Also includes:

DHEA-S	**C-Reactive Protein**
TSH for thyroid function	**Homocysteine**
Estradiol	**Free Testosterone**
Progesterone	**Total Testosterone**
Hemoglobib A1c	**Vitamin D 25- hydroxy**

MALE WEIGHT LOSS PANEL (LCWLM) — $299

Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. **CBC** includes immune (white) cell count, red blood cell count and platelet count. Also includes:

DHEA-S	**C-Reactive Protein**
SHBG	**Insulin**
Estradiol	**Free Testosterone**
Free T3	**Total Testosterone**
TSH for thyroid function	**Free T4**
	PSA (prostate-specific antigen)

FEMALE WEIGHT LOSS PANEL (LCWLF) — $299

Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. **CBC** includes immune (white) cell count, red blood cell count and platelet count. Also includes:

DHEA-S	**C-Reactive Protein**
Progesterone	**Insulin**
Estradiol	**Free Testosterone**
Free T3	**Total Testosterone**
TSH for thyroid function	**Free T4**
	SHBG

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

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

FEMALE HORMONE ADD-ON PANEL (LCADDF)* — $125

Pregnenolone and Total Estrogens
To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides valuable information about total estrogen status, and the mother hormone that acts as a precursor to all other hormones.

LIFE EXTENSION THYROID PANEL (LC304131) — $75

TSH, T4, Free T3, Free T4.

FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) — $299

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

MALE COMPREHENSIVE HORMONE PANEL* (LC100010) — $299

CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.

THE CBC/CHEMISTRY PROFILE (LC381822) — $35

Note: This CBC/Chemistry Profile is included in many Life Extension panels. Please check panel descriptions.

CARDIOVASCULAR RISK PROFILE

Total Cholesterol	Cholesterol/HDL Ratio
HDL Cholesterol	Estimated CHD Risk
LDL Cholesterol	Glucose
Triglycerides	Iron

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
Polys (Absolute)	Hematocrit
Lymphs (Absolute)	MCV
Monocytes (Absolute)	MCH
Eos (Absolute)	MCHC
Baso (Absolute)	Polynucleated Cells
RDW	

BLOOD MINERAL PANEL

Calcium	Sodium
Potassium	Chloride
Phosphorus	Iron

COMPREHENSIVE THYROID PANEL (LC100018) — $199

TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA

FOOD SAFE ALLERGY TEST (LCM73001)** — $198

This test measures delayed (IgG) food allergies for 95 common foods.

ADRENAL FUNCTION PANEL (LC100021) — $136

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

OMEGA SCORE™ (LCOMEGA)** — $131.25

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.

MITOCHONDRIAL FUNCTION PANEL* (LC100020) — $159

Carnitine (Free with Total), CoQ10, Glucose

VAP™ TEST* (LC804500) — $90

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

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

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

Other Popular Tests and Panels
Life Extension Member Pricing

◯ **ENERGY PROFILE (LC100005)** — $375
CBC/Chemistry Profile (see description), Epstein –Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferritin, Total and Free Testosterone, DHEA-S, Free T3, Free T4, Cortisol, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Insulin.

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

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

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

◯ **CARDIAC PLUS* (LC100008)** — $145
CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine.

◯ **VAP™ PLUS* (LC100009)** — $330
VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.

CARDIAC RISK

◯ **COQ10* (COENZYME Q10) (LC120251)** — $99
This test is used to check the blood level of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.

◯ **Lp-PLA2 (PLAC® TEST) (LC123240)** — $125
This test is used to aid in predicting risk for coronary heart disease, and ischemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries.

◯ **C-REACTIVE PROTEIN (HIGH-SENSITIVITY) (LC120766)** — $42
Measures inflammation factors in arteries. Recent studies indicate that C-reactive protein may be the most accurate risk factor for predicting heart attack and stroke.

◯ **FIBRINOGEN* (LC001610)** — $31
High levels of this blood-clotting factor increase the risk of heart attack and stroke.

◯ **HOMOCYSTEINE (LC706994)** — $64
Can indicate if you are likely to have a heart attack or stroke. Even if you take folic acid, you still may have dangerously high levels of this artery-clotting metabolic debris that can be lowered with high doses of TMG, vitamin B6, and vitamin B12.

MALE HEALTH

◯ **PSA (PROSTATE-SPECIFIC ANTIGEN) (LC010322)** — $31
Can provide an early warning sign for prostate disorders and possible cancer.

◯ **FREE-PSA (INCLUDES TOTAL PSA)* (LC480780)** — $61
Recommended to determine if an elevated PSA is indicative of prostate cancer.

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

HORMONES

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

◯ **DIABESITY PANEL* (LC100019)** — $159
Glucose, Insulin, HbA1c, VAP™, Cortisol, C-Reactive Protein

◯ **MALE BASIC HORMONE PANEL (LC100012)** — $75
DHEA-S, Estradiol, Free and Total Testosterone, PSA

◯ **FEMALE BASIC HORMONE PANEL (LC100013)** — $75
DHEA-S, Estradiol, Free and Total Testosterone, Progesterone

◯ **DIHYDROTESTOSTERONE (DHT)* (LC500142)** — $99
Measures serum concentrations of DHT.

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

◯ **INSULIN FASTING (LC004333)** — $25
Can predict those at risk of diabetes, obesity, and heart and other diseases.

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

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

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

BONE HEALTH

◯ **VITAMIN D (25OH) (LC081950)** — $47
This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.

◯ **OSTEOCALCIN* (LC010249)** — $91
Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.

◯ **DPD CROSS LINK URINE TEST (LC511105)** — $79
The deoxypyridinoline (DPD) urine test can be used to measure bone re-absorption rates in healthy individuals and in those with enhanced risk of developing metabolic bone diseases. Deoxypyridinoline can be used to monitor therapies (which may include bisphosphonate drugs) in people diagnosed with osteoporosis.

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

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

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

TERMS AND CONDITIONS

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

Signature of Life Extension Member

X

Life Extension Foundation Members only

MEMBER NO.

◯ Male ◯ Female

Name

Date of Birth (required) / /

Address

City

State Zip

Phone

Credit Card No.

Expiration Date /

Mail your order form to:

LifeExtension®
NATIONAL DIAGNOSTICS, INC.

3600 West Commercial Boulevard
Fort Lauderdale, FL 33309

Phone your order to: **1-800-208-3444**
Fax your order to: **1-866-728-1050**

PRODUCTS

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

BONE & JOINT HEALTH
ArthroMax® with Theaflavins and AprèsFlex®
ArthroMax® Advanced with UC-II® and AprèsFlex®
Bone-Up™
Bone Restore
Bone Restore w/Vitamin K2
Bone Strength Formula w/KoAct™
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™
LACTOSOLV™ Long Lasting Digestion
Life Flora™
Pancreatin
Regimint
Theralac Probiotics

DURK AND SANDY PRODUCTS
Blast™
Inner Power™

EYE CARE
Bilberry Extract
Brite Eyes III
Eye Pressure Support with Mirtogenol®
Solarshield Sunglasses
Super Zeaxanthin with Lutein & Meso-Zeaxanthin Plus Astaxanthin and C3G
Super Zeaxanthin with Lutein & Meso-Zeaxanthin and C3G

FIBER
AppleWise Polyphenol
Fiber Food
TruFiber®
WellBetX PGX® 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/Standarized 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®
PhosphOmega®
Policosanol
Pycnogenol® French Maritime Pine Bark Extract
Red Yeast Rice
Super Absorbable CoQ10™ with *d*-Limonene
Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract
Super Ubiquinol CoQ10
Super Ubiquinol CoQ10 with BioPQQ®
Super Ubiquinol CoQ10 with Enhanced Mitochondrial™ Support
Theaflavin Standardized Extract
TMG Powder
TMG Tablets

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 Standarized 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
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
Serraflazyme
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
N-Acetyl Cysteine
Liver Efficiency Formula
European Milk Thistle Advanced Phospholipid Delivery
Hepatopro
SAMe
Silymarin

PRODUCTS

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

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 UTI*Rose*™
5-LOXIN®
Pomi-T™
(Water-Soluble) Pumpkin Seed Extract
Super Saw Palmetto with Beta-Sitosterol
Super Saw Palmetto/Nettle Root Formula w/Beta-Sitosterol
Ultra Natural Prostate Formula

SKIN CARE
Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermAbrasion
Anti-Aging Mask
Anti-Glycation Serum
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/InSea$^{2®}$ 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
Alli® Refill Pack
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 Appetite Control
Natural Glucose Absorption Control
Super CLA Blend w/Guarana and Sesame Lignans
Super CLA Blend w/Sesame Lignans
WellBetX PGX® plus Mulberry

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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		
01308	**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		
*46925	**ALLI® REFILL PACK** - 120 caps	69.95	58.00		
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

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

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS FEBRUARY 3, 2014
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01203	**BROMELAIN (SPECIALLY-COATED)** - 500 mg, 60 enteric coated tablets	$21.00	$15.75		
	Buy 4 bottles, price each	19.00	14.25		
00884	**BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID** - 60 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.60	29.70		
	C				
01653	**CALCIUM CITRATE w/VITAMIN D** - 300 caps	$24.00	$18.00		
	Buy 4 bottles, price each	21.25	15.94		
01651	**CALCIUM D-GLUCARATE** - 200 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
01693	**CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC® GREEN COFFEE EXTRACT BLUEBERRY FLAVOR** - 414 grams powder	60.00	45.00		
	Buy 4 jars, price each	54.00	40.50		
	Buy 8 jars, price each	50.00	37.50		
01700	**CARDIO PEAK™ W/STANDARDIZED HAWTHORN & ARJUNA** - 120 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00916	**CARNITINE w/GLYCOCARN® (OPTIMIZED)** - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01532	**L-CARNITINE** - 500 mg, 30 veg. caps	15.00	11.25		
	Buy 4 bottles, price each	13.20	9.90		
01719	**L-CARNITINE POWDER NATURAL LEMON FLAVOR** - 114 grams	28.00	21.00		
	Buy 4 jars, price each	24.00	18.00		
01258	**CARNOSOOTHE w/PICROPROTECT™** - 60 veg. caps	29.95	22.46		
	Buy 4 bottles, price each	27.00	20.25		
01687	**CARNOSINE (SUPER)** - 500 mg, 90 veg. caps	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01003	**CAT MIX** - 100 grams powder	15.00	11.25		
	Buy 4 jars, price each	12.00	9.00		
01659	**CDP CHOLINE CAPS** - 250 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		
01391	**CHILDREN'S FORMULA LIFE EXTENSION MIX™** - 100 chewable tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00550	**CHLORELLA** - 500 mg, 200 tablets	23.50	17.63		
01571	**CHLOROPHYLLIN** - 100 mg, 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	20.00	15.00		
01359	**CHO-LESS™** - 90 capsules	32.50	24.38		
01477	**CHROMIUM ULTRA** - 100 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	21.00	15.75		
01504	**CHROMIUM W/CROMINEX® 3+ (OPTIMIZED)** - 500 mcg, 60 veg. caps	9.00	6.75		
	Buy 4 bottles, price each	8.00	6.00		
01503	**CINSULIN® W/INSEA2® AND CROMINEX® 3+** - 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
00818	**CLA BLEND W/SESAME LIGNANS (SUPER)** - 1,000 mg, 120 softgels	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
	Buy 10 bottles, price each	26.33	19.75		
00819	**CLA BLEND w/GUARANA & SESAME (SUPER)**-1,000 mg, 120 softgels	42.00	31.50		
	Buy 4 bottles, price each	38.33	28.75		
01707	**COFFEEGENIC® WEIGHT MANAGEMENT™ w/GREEN COFFEE EXTRACT** - 90 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	42.00	31.50		
01896	**COGNITEX® w/BRAIN SHIELD™** - 90 softgels	60.00	45.00		
	Buy 4 bottles, price each	52.00	39.00		
	Buy 8 bottles, price each	48.00	36.00		

SUB-TOTAL OF COLUMN 3

No.		Retail Each	Member Each	Qty	Total
01897	**COGNITEX® w/PREGNENOLONE & BRAIN SHIELD™** - 90 softgels	$62.00	$46.50		
	Buy 4 bottles, price each	53.00	39.75		
	Buy 8 bottles, price each	50.00	37.50		
01421	**COGNITEX® BASICS** - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
	Buy 12 bottles, price each	32.00	24.00		
01735	**COMPLETE B-COMPLEX** - 60 veg. caps	10.00	7.50		
	Buy 4 bottles, price each	9.00	6.75		
01795	**COMPREHENSIVE NUTRIENT PACKS BASIC** - 30 packs	48.00	36.00		
	Buy 4 boxes, price each	44.00	33.00		
01796	**COMPREHENSIVE NUTRIENT PACKS ADVANCED** - 30 packs	90.00	67.50		
	Buy 4 boxes, price each	82.00	61.50		
00119	**COPPER CAPSULES** - 2 mg, 100 caps	9.91	7.43		
00949	**COQ10™ w/ d-LIMONENE (SUPER ABSORBABLE)** - 50 mg, 60 softgels	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
	Buy 10 bottles, price each	20.00	15.00		
00950	**COQ10™ w/ d-LIMONENE (SUPER ABSORBABLE)** - 100 mg, 100 softgels	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
	Buy 10 bottles, price each	56.00	42.00		
01226	**COQ10 (SUPER UBIQUINOL)** - 100 mg, 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
	Buy 10 bottles, price each	48.00	36.00		
01733	**COQ10 w/BIOPQQ® (SUPER UBIQUINOL)** - 100 mg, 30 softgels	54.00	40.50		
	Buy 4 bottles, price each	50.00	37.50		
	Buy 10 bottles, price each	46.00	34.50		
01426	**COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)**-100 mg, 60 softgels	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01425	**COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)**-50 mg, 100 softgels	58.00	43.50		
	Buy 4 bottles, price each	53.00	39.75		
	Buy 10 bottles, price each	50.00	37.50		
01427	**COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)**-50 mg, 30 softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01431	**COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL)**-200 mg, 30 softgels	62.00	46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01053	**CORIOLUS SUPER STRENGTH** - 600 mg, 150 veg. caps	99.95	74.96		
80140	**COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS** - .33 oz	49.00	36.75		
	Buy 2 bottles, price each	42.00	31.50		
80139	**COSMESIS AMBER SELF MICRODERMABRASION** - 2 oz	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
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		
80118	**COSMESIS ANTI-AGING MASK** - 2 oz	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
80134	**COSMESIS ANTI-GLYCATION SERUM** - 1 oz **W/BLUEBERRY & POMEGRANATE EXTRACTS**	33.00	24.75		
	Buy 2 bottles, price each	31.35	23.51		
80133	**COSMESIS ANTIOXIDANT FACIAL MIST** - 2 oz	32.00	24.00		
	Buy 2 bottles, price each	30.40	22.80		
80127	**COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM** - 2 oz	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		

SUB-TOTAL OF COLUMN 4

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

JANUARY 2014

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
	C CONTINUED				
80128	**COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB** - 2 oz	$59.00	$44.25		
	Buy 2 jars, price each	51.92	38.94		
80117	**COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM** - 2 oz	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
80121	**COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB** - 2 oz	58.00	43.50		
	Buy 2 jars, price each	51.04	38.28		
80105	**COSMESIS ANTI-REDNESS & ADULT BLEMISH LOTION** - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80147	**COSMESIS BIOFLAVONOID CREAM** - 1 oz jar	46.00	34.50		
	Buy 2 jars, price each	39.00	29..25		
80144	**COSMESIS BROCCOLI SPROUT CREAM** - 1 oz	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80120	**COSMESIS CORRECTIVE CLEARING MASK** - 2 oz	64.50	48.38		
	Buy 2 jars, price each	56.76	42.57		
80141	**COSMESIS DNA REPAIR CREAM** - 1 oz jar	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80108	**COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM** - 1 oz	74.95	56.21		
	Buy 2 bottles, price each	65.95	49.46		
80123	**COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM** - 2 oz	69.50	52.13		
	Buy 2 jars, price each	61.16	45.87		
80107	**COSMESIS FINE LINE-LESS** - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80131	**COSMESIS HAIR SUPPRESS FORMULA** - 4 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80137	**COSMESIS HEALING FORMULA ALL-IN-ONE CREAM** - 1 oz	53.00	39.75		
	Buy 2 jars, price each	45.43	34.07		
80115	**COSMESIS HEALING MASK** - 2 oz	64.50	48.38		
	Buy 2 bottles, price each	56.76	42.57		
80102	**COSMESIS HEALING VITAMIN K CREAM** - 1 oz	79.50	59.63		
	Buy 2 bottles, price each	69.96	52.47		
80109	**COSMESIS HYALURONIC FACIAL MOISTURIZER** - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80110	**COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER** - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80138	**COSMESIS HYDRATING ANTIOXIDANT FACE MIST** - 4 oz	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50		
80103	**COSMESIS LIFTING & TIGHTENING COMPLEX** - 1 oz	74.50	55.88		
	Buy 2 tubes, price each	65.56	49.17		
80146	**COSMESIS LYCOPENE CREAM** - 1 oz jar	28.00	21.00		
	Buy 2 jars, price each	25.40	19.05		
80135	**COSMESIS MELATONIN CREAM** - 1 oz	33.00	24.75		
	Buy 2 jars, price each	27.10	20.33		
80114	**COSMESIS MILD FACIAL CLEANSER** - 8 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80122	**COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM** - 2 oz	64.00	48.00		
	Buy 2 jars, price each	56.32	42.24		
80111	**COSMESIS PIGMENT CORRECTING CREAM** - 1/2 oz	74.00	55.50		
	Buy 2 bottles, price each	65.12	48.84		
80106	**COSMESIS REJUVENATING SERUM** - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80150	**COSMESIS RENEWING EYE CREAM** - 1/2 oz	65.00	48.75		
	Buy 2 jars, price each	57.00	42.75		
80142	**COSMESIS RESVERATROL ANTI-OXIDANT SERUM** - 1 oz	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		

SUB-TOTAL OF COLUMN 5

No.		Retail Each	Member Each	Qty	Total
80112	**COSMESIS SKIN LIGHTENING SERUM** - 1/2 oz	$85.00	$63.75		
	Buy 2 bottles, price each	74.80	56.10		
80130	**COSMESIS SKIN STEM CELL SERUM** - 1 oz	74.00	55.50		
	Buy 2 bottles, price each	69.00	51.75		
80143	**COSMESIS STEM CELL CREAM W/ALPINE ROSE** - 1 oz jar	66.00	49.50		
	Buy 2 jars, price each	58.00	43.50		
80148	**COSMESIS TIGHTENING & FIRMING NECK CREAM** - 2 oz jar	39.00	29.25		
	Buy 2 jars, price each	35.00	26.25		
80116	**COSMESIS ULTRA LIP PLUMPER** - 1/3 oz	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	**COSMESIS ULTRA WRINKLE RELAXER** - 1 oz	89.95	67.46		
	Buy 2 bottles, price each	79.76	59.82		
80113	**COSMESIS UNDER EYE REFINING SERUM** - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80104	**COSMESIS UNDER EYE RESCUE CREAM** - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80129	**COSMESIS VITAMIN C SERUM** - 1 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80136	**COSMESIS VITAMIN D LOTION** - 4 oz	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25		
80145	**COSMESIS VITAMIN E-ESSENTIAL CREAM** - 1 oz	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
80149	**COSMESIS YOUTH SERUM** - 1 oz	65.00	48.75		
	Buy 2 bottles, price each	57.00	42.75		
00862	**CRAN-MAX®** - 500 mg, 60 veg. caps	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
01424	**CRAN-MAX® with UTI*ROSE*™ (OPTIMIZED)** - 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01529	**CREATINE CAPSULES** - 120 veg. caps	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
01746	**CREATINE WHEY GLUTAMINE POWDER** - 454 grams (vanilla)	30.00	22.50		
	Buy 4 jars, price each	27.00	20.25		
01429	**CR MIMETIC LONGEVITY FORMULA** - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	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	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		
01808	**CURCUMIN® w/GINGER & TURMERONES (ADVANCED BIO)**-30 softgels	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01804	**CYTOKINE SUPPRESS™ w/EGCG** - 30 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
	D				
00658	**7-KETO® DHEA METABOLITE** - 25 mg, 100 caps	$28.00	$21.00		
	Buy 4 bottles, price each	24.00	18.00		
01479	**7-KETO® DHEA METABOLITE** - 100 mg, 60 veg. caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
01640	**DHA (VEGETARIAN SOURCED)** - 200 mg, 30 veg. softgels	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00607	**DHEA** - 25 mg, 100 tablets (dissolve in mouth)	14.00	10.50		
	Buy 4 bottles, price each	11.75	8.81		
01478	**DHEA COMPLETE** - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	43.20	32.40		

SUB-TOTAL OF COLUMN 6

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

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS FEBRUARY 3, 2014
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Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00335	**DHEA** - 25 mg, 100 caps	$18.00	$13.50		
	Buy 4 bottles, price each	15.00	11.25		
00454	**DHEA** - 15 mg, 100 caps	14.00	10.50		
	Buy 4 bottles, price each	12.00	9.00		
00882	**DHEA** - 50 mg, 60 caps	19.00	14.25		
	Buy 4 bottles, price each	17.00	12.75		
01689	**DHEA** - 100 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01358	**DIGEST RC** - 30 tablets	19.95	14.96		
	Buy 4 boxes, price each	17.00	12.75		
01272	**DIGESTIVE ENZYMES (ENHANCED SUPER)** - 100 veg. caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01671	**D,L-PHENYLALANINE CAPSULES** - 500 mg, 100 veg. caps	18.75	14.06		
	Buy 4 bottles, price each	16.00	12.00		
01540	**DMAE BITARTRATE** - 150 mg, 200 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	15.00	11.25		
00059	**DMG** - 125 mg, 60 tablets	22.80	17.10		
	Buy 4 boxes, price each	21.00	15.75		
01570	**DNA PROTECTION FORMULA** - 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	32.00	24.00		
00544	**DOG MIX** - 100 grams powder	19.50	14.63		
	Buy 4 jars, price each	16.00	12.00		
00321	**DR. PROCTOR'S ADVANCED HAIR FORMULA** - 2 oz	39.95	29.96		
	Buy 4 bottles, price each	32.00	24.00		
00320	**DR. PROCTOR'S HAIR FORMULA SHAMPOO** - 8 oz	24.95	18.71		
	Buy 4 bottles, price each	22.00	16.50		
00899	**DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE** - 2.4 oz	39.95	29.96		
	Buy 4 jars, price each	38.95	29.21		
	E				
01528	**ECHINACEA EXTRACT** - 250 mg, 60 veg. caps	$14.35	$10.76		
	Buy 4 bottles, price each	12.50	9.38		
01498	**ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™** - 60 softgels	56.00	42.00		
	Buy 4 bottles, price each	52.00	39.00		
00997	**ENDOTHELIAL DEFENSE™ w/GLISODIN®** - 60 veg. caps	54.00	40.50		
	Buy 4 bottles, price each	48.00	36.00		
00625	**EPA/DHA (MEGA)** - 120 softgels	19.95	14.96		
	Buy 4 bottles, price each	18.00	13.50		
01737	**ESOPHAGEAL GUARDIAN** (Berry flavor) - 60 chewable tablets	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01042	**EUROPEAN LEG SOLUTION DIOSMIN 95** - 600 mg, 30 veg. tabs	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01706	**EXTRAORDINARY ENZYMES** - 60 caps	26.00	19.50		
	Buy 4 bottles, price each	24.00	18.00		
01514	**EYE PRESSURE SUPPORT w/MIRTOGENOL®** - 30 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
	F				
†01054	**FACE MASTER® PLATINUM**	$199.00	$199.00		
00965	**FAST-ACTING JOINT FORMULA** - 30 caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01717	**FAST-C® w/DIHYDROQUERCETIN** - 120 veg. tabs	26.00	19.50		
	Buy 4 bottles, price each	24.00	18.00		
20053	**FEM DOPHILUS®** - 30 caps	25.95	19.46		
20055	**FEM DOPHILUS®** - 60 caps	39.95	29.96		

SUB-TOTAL OF COLUMN 7

No.		Retail Each	Member Each	Qty	Total
01064	**FEMMENESSENCE MACAPAUSE®** - 120 veg. caps	$34.99	$26.24		
01728	**FERNBLOCK® w/RED ORANGE COMPLEX (ENHANCED)** - 30 veg. caps	42.00	31.50		
	Buy 4 bottles, price each	38.00	28.50		
01670	**FIBER FOOD CAPS** - 200 veg. caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
	Buy 10 bottles, price each	13.00	9.75		
00718	**FIBRINOGEN RESIST™** - 30 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	44.00	33.00		
01806	**FLORASSIST™ PROBIOTIC** - 30 liquid veg. caps	33.00	24.75		
	Buy 4 boxes, price each	30.00	22.50		
01439	**FOLATE (OPTIMIZED) (L-METHYLFOLATE)** 1,000 mcg - 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01641	**FOLIC ACID + B12 CAPSULES** - 200 veg. caps	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01544	**FORSKOLIN** - 10 mg, 60 veg.caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01513	**FUCOIDAN w/MARITECH® 926 (OPTIMIZED)** - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	33.00	24.75		
00993	**FUCOXANTHIN-SLIM™** - 90 softgels	44.00	33.00		
	Buy 4 bottles, price each	39.00	29.25		
	G				
00559	**GAMMA E TOCOPHEROL/TOCOTRIENOLS** - 60 softgels	$42.00	$31.50		
	Buy 4 bottles, price each	37.00	27.75		
00759	**GAMMA E TOCOPHEROL W/SESAME LIGNANS** - 60 softgels	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01394	**(OPTIMIZED) GARLIC** - 200 veg. caps	24.95	18.71		
	Buy 4 bottles, price each	21.00	15.75		
01301	**GH PITUITARY SUPPORT DAY FORMULA** - 120 tabs	48.00	36.00		
	Buy 4 bottles, price each	44.00	33.00		
01302	**GH PITUITARY SUPPORT NIGHT FORMULA** - 120 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.50	16.88		
***01228	**GINGER FORCE** - 60 softgels	31.95	23.96		
01658	**GINKGO BILOBA CERTIFIED EXTRACT™** - 120 mg, 365 veg. caps	46.00	34.50		
	Buy 2 bottles, price each	43.50	32.63		
01648	**GINKGO EXTRACT 28/7 (SUPER)** - 120 mg, 100 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.50	19.88		
00756	**GLA WITH SESAME LIGNANS (MEGA)** - 60 softgels	19.50	14.63		
	Buy 4 bottles, price each	18.00	13.50		
00345	**(L) GLUTAMINE CAPSULES** - 500 mg, 100 caps	14.95	11.21		
	Buy 4 bottles, price each	13.50	10.13		
00141	**(L)-GLUTAMINE POWDER** - 100 grams	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00522	**GLUCOSAMINE/CHONDROITIN CAPSULES** - 100 caps	38.00	28.50		
	Buy 4 bottles, price each	32.00	24.00		
01541	**GLUTATHIONE, CYSTEINE & C** - 100 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00314	**L-GLUTATHIONE (MEGA)** - 250 mg, 60 caps	39.64	29.73		
01731	**GLYCEMICPRO™ TRANSGLUCOSIDASE** - 60 veg. caps	48.00	36.00		
	Buy 4 bottles, price each	42.00	31.50		
01669	**GLYCINE** - 1,000 mg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	10.80	8.10		
01091	**GRAPE EXTRACT w/RESVERATROL (WHOLE)** - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	34.00	25.50		

SUB-TOTAL OF COLUMN 8

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

JANUARY 2014

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
	G CONTINUED				
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 COFFEEGENIC®** - 200 mg, 90 veg. caps	25.00	18.75		
	Buy 4 bottles, price each	22.00	16.50		
01620	**GREEN COFFEE EXTRACT COFFEEGENIC®** - 400 mg, 90 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	34.00	25.50		
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		
	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 **CALORIE CONTROL COMPLEX (OPTIMIZED AFRICAN MANGO)**	56.00	42.00		
	Buy 4 bottles, price each	48.00	36.00		
	J, K				
00056	**JARRO-DOPHILUS EPS™** - 60 veg. caps	$22.95	$17.21		
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	**(NKO) KRILL OIL PHOSPH OMEGA** - 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		

SUB-TOTAL OF COLUMN 9

No.		Retail Each	Member Each	Qty	Total
	L				
01681	**LACTOFERRIN (APOLACTOFERRIN) CAPS** - 60 caps	$48.00	$36.00		
	Buy 4 bottles, price each	44.00	33.00		
01702	**LACTOSOLV™ LONG LASTING LACTASE** - 30 caps	30.00	22.50		
	Buy 4 boxes, price each	27.00	20.25		
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		
00263	**LIFE FLORA™** - 300 mg, 120 caps	20.50	15.38		
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		
	M				
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		

SUB-TOTAL OF COLUMN 10

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

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS FEBRUARY 3, 2014
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
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		
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		
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		
00891	**NATURAL APPETITE CONTROL** - 90 softgels	28.00	21.00		
	Buy 4 bottles, price each	25.20	18.90		
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		

SUB-TOTAL OF COLUMN 11

No.		Retail Each	Member Each	Qty	Total
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		
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)** - 240 softgels (SMALL SOFTGEL)	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
	Buy 10 bottles, price each	24.90	18.68		
01632	**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		
00915	**OPTIZINC®** - 30 mg, 90 veg. caps	5.95	4.46		
	Buy 4 bottles, price each	5.00	3.75		

SUB-TOTAL OF COLUMN 12

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JANUARY 2014

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Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
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No.		Retail Each	Member Each	Qty	Total
	P				
00073	**PANCREATIN** - 500 mg, 50 caps	$13.22	$9.92		
01323	**PEAK ATP® WITH GLYCOCARN®** - 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	99.95	74.96		
01080	**PECTA SOL-C® MODIFIED CITRUS PECTIN** - 270 veg. caps	69.95	52.46		
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		
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		
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		
01209	**PUMPKIN SEED EXTRACT (WATER-SOLUBLE)** - 60 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01210	**PUMPKIN SEED EXT w/SOY ISOFLAVONES (WATER-SOLUBLE)**- 60 veg. caps	$22.00	$16.50		
	Buy 4 bottles, price each	20.00	15.00		
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		
00972	**(D) RIBOSE POWDER** - 150 grams	27.50	20.63		
	Buy 4 jars, price each	24.75	18.56		
01473	**(D) RIBOSE TABLETS** - 100 veg. tabs	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
01609	**RICH REWARDS® BREAKFAST GROUND COFFEE** - 12 oz. bag	13.00	9.75		
01729	**RICH REWARDS® BREAKFAST BLEND GROUND COFFEE** - 12 oz. bag	15.00	11.25		
	Natural Vanilla				
01730	**RICH REWARDS® BREAKFAST BLEND GROUND COFFEE** - 12 oz. bag	15.00	11.25		
	Natural Mocha				
01610	**RICH REWARDS® DECAFFEINATED ROAST GROUND COFFEE** -12 oz. bag	14.00	10.50		
01809	**RICH REWARDS™ DARK CHOCOLATE** - 15 piece bag	15.00	11.25		
	Buy 4 bags, price each	12.96	9.72		
01712	**RICH REWARDS™ BLACK BEAN VEGETABLE SOUP** - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01530	**RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP** - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	**RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP** - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		

SUB-TOTAL OF COLUMN 13

SUB-TOTAL OF COLUMN 14

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

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS FEBRUARY 3, 2014
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01705	**RICH REWARDS™ LENTIL VEGETABLE SOUP** - 32 oz. bottle	$13.00	$9.75		
	Buy 6 bottles, price each	12.25	9.19		
01810	**RICH REWARDS™ MUNG BEAN SOUP W/TURMERIC** - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01208	**R-LIPOIC ACID (SUPER)** - 300 mg, 60 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	45.00	33.75		
00070	**RNA CAPSULES** - 500 mg, 100 caps	17.95	13.46		
	Buy 4 bottles, price each	16.16	12.12		
	S				
01432	**SAFFRON w/SATIEREAL (OPTIMIZED)** - 60 veg. caps	$36.00	$27.00		
	Buy 4 bottles, price each	32.00	24.00		
00358	**SAME (S-ADENOSYL-METHIONINE)** - 200 mg, 20 enteric coated tablets	16.00	12.00		
	Buy 8 boxes, price each	14.00	10.50		
00453	**SAME (S-ADENOSYL-METHIONINE)** - 200 mg, 50 enteric coated tablets	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00557	**SAME (S-ADENOSYL-METHIONINE)** - 400 mg, 20 enteric coated tablets	28.00	21.00		
	Buy 6 boxes, price each	24.00	18.00		
01055	**SAME (S-ADENOSYL-METHIONINE)** - 400 mg, 50 enteric coated tablets	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01543	**SEA-IODINE™** - 1,000 mcg, 60 caps	8.00	6.00		
	Buy 4 bottles, price each	7.20	5.40		
00046	**SELENIUM** - 2 oz dropper bottle	11.95	8.96		
01679	**SE-METHYL L-SELENOCYSTEINE** - 200 mcg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
00318	**SERRAFLAZYME** - 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00284	**SHARK LIVER OIL (NORWEGIAN)** - 1,000 mg, 30 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01684	**SILYMARIN** - 100 mg, 50 veg. caps	9.25	6.94		
	Buy 4 bottles, price each	8.25	6.19		
01596	**SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT®** - 30 veg. liquid caps	25.00	18.75		
	Buy 4 bottles, price each	23.00	17.25		
00961	**SODZYME® w/GLISODIN® AND WOLFBERRY** - 90 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
00657	**SOLARSHIELD SUNGLASSES** - 1 pair smoke color	12.99	9.74		
	Buy 2 pairs, price each	11.50	8.63		
01097	**SOY EXTRACT (ULTRA)** - 150 veg. caps	87.00	65.25		
	Buy 4 bottles, price each	78.00	58.50		
00432	**STEVIA EXTRACT** - 100 packets, 1 gram each	9.95	7.46		
01396	**ST. JOHN'S WORT EXTRACT** - 300 mg, 60 veg. caps	10.98	8.24		
	Buy 4 bottles, price each	10.00	7.50		
01476	**STRONTIUM** - 750 mg, 90 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01649	**SUPER ABSORBABLE SOY ISOFLAVONES** - 60 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	25.00	18.75		
01790	**SUPER SAW PALMETTO/NETTLE ROOT W/BETA-SITOSTEROL** - 60 softgels	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
	Buy 12 bottles, price each	24.00	18.00		
01407	**SUPER SAW PALMETTO W/BETA-SITOSTEROL** - 30 softgels	15.00	11.25		
	Buy 12 bottles, price each	12.00	9.00		
01778	**SUPER SELENIUM COMPLEX** - 200 mcg, 100 veg. caps	14.00	10.50		
	Buy 4 bottles, price each	12.00	9.00		
	Buy 12 bottles, price each	11.00	8.25		

SUB-TOTAL OF COLUMN 15

No.		Retail Each	Member Each	Qty	Total
	T				
01723	**TART CHERRY EXTRACT w/STANDARDIZED CHERRYPURE®** - 60 veg. caps	$22.00	$16.50		
	Buy 4 bottles, price each	20.00	15.00		
00199	**TAURINE** - 1,000 mg, 50 caps	8.95	6.71		
	Buy 4 bottles, price each	8.00	6.00		
00133	**TAURINE POWDER** - 300 grams	20.00	15.00		
	Buy 4 bottles, price each	16.88	12.66		
01304	**THEAFLAVIN STANDARDIZED EXTRACT** - 30 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01683	**(L) THEANINE** - 100 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	20.50	15.38		
††01038	**THERALAC PROBIOTICS** - 30 caps	47.95	35.96		
00668	**THYROID FORMULA™ (METABOLIC ADVANTAGE)** - 100 caps	21.95	16.46		
00349	**TMG POWDER** - 50 grams	14.00	10.50		
	Buy 4 bottles, price each	11.00	8.25		
01559	**TMG** - 500 mg, 60 veg. tablets	11.00	8.25		
	Buy 4 boxes, price each	10.00	7.50		
00781	**TOCOTRIENOLS WITH SESAME LIGNANS** - 60 softgels	38.00	28.50		
	Buy 4 bottles, price each	36.00	27.00		
01400	**TOCOTRIENOLS (SUPER-ABSORBABLE)** - 60 softgels	30.00	22.50		
	Buy 4 bottles, price each	28.00	21.00		
01278	**TOOTHPASTE** - 4 oz (Mint)	9.50	7.13		
	Buy 4 tubes, price each	8.67	6.50		
01468	**TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT** - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01469	**TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL** -60 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	29.60	22.20		
01803	**TRI SUGAR SHIELD™** - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01386	**TRUFIBER®** - 180 grams	32.95	24.71		
01389	**TRUFLORA PROBIOTICS & ENZYMES** - 32 veg. caps	42.95	32.21		
01722	**L-TRYPTOPHAN** - 500 mg, 90 veg. caps	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50		
01721	**TRYPTOPHAN PLUS (OPTIMIZED)** - 90 veg. caps	32.00	24.00		
	Buy 4 bottles, price each	29.00	21.75		
01816	**TWO-PER-DAY** - 60 tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01815	**TWO-PER-DAY** - 120 tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01814	**TWO-PER-DAY** - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	**L-TYROSINE** - 500 mg, 100 tablets	12.98	9.74		
	V				
00213	**VANADYL SULFATE** - 7.5 mg, 100 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		

SUB-TOTAL OF COLUMN 16

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

JANUARY 2014

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
	V CONTINUED				
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		
01573	**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		
01572	**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		
	W				
01739	**WINTER WELLNESS™** - 60 caps	$15.00	$11.25		
	Buy 4 bottles, price each	13.00	9.75		
	Z				
01686	**ZEAXANTHIN w/LUTEIN & MESO-ZEAXANTHIN PLUS ASTAXANTHIN AND C3G (SUPER)** - 60 softgels	$42.00	$31.50		
	Buy 4 bottles, price each	38.00	28.50		
01685	**ZEAXANTHIN w/LUTEIN & MESO-ZEAXANTHIN AND C3G (SUPER)** - 60 softgels	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
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		

* These products are not 25% off retail price.
** Not eligible for member discount or member renewal product credit.
*** Due to license restrictions, this product is not for sale to customers outside of the USA.
† Member pricing not valid on this item.
†† Due to license restrictions, this product is not for sale to Canada.

SUB-TOTAL OF COLUMN 17

Statement of Ownership, Management, and Circulation (Requester Publications Only)

UNITED STATES POSTAL SERVICE®

1. Publication Title	2. Publication Number	3. Filing Date
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8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer): 3600 W. Commercial Blvd., Ft. Lauderdale, FL 33309

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)

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Managing Editor (Name and complete mailing address): Renee Price, , 3600 W. Commercial Blvd., Ft. Lauderdale, FL 33309

10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)

Full Name	Complete Mailing Address
LE Publications, Inc.	3600 W. Commercial Blvd.
100% owned by:	Ft. Lauderdale, FL 33309
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	Ft. Lauderdale, FL 33309

11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box → ☐ None

Full Name	Complete Mailing Address

12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)
The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:
☒ Has Not Changed During Preceding 12 Months
☐ Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement)

13. Publication Title	14. Issue Date for Circulation Data Below
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15. Extent and Nature of Circulation		Domestic/International	Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)			356,255	378,318
b. Legitimate Paid and/or Requested Distribution (By Mail and Outside the Mail)	(1)	Outside County Paid/Requested Mail Subscriptions stated on PS Form 3541. (Include direct written request from recipient, telemarketing and Internet request from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)	263,515	248,417
	(2)	In-County Paid/Requested Mail Subscriptions stated on PS Form 3541. (Include direct written request from recipient, telemarketing and Internet request from recipient, paid subscriptions including nominal rate subscriptions, employer requests, advertiser's proof copies, and exchange copies.)	5,232	549
	(3)	Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid or Requested Distribution Outside USPS®	98,452	8,257
	(4)	Requested Copies Distributed by Other Mail Classes Through the USPS (e.g. First-Class Mail®)	739	62
c. Total Paid and/or Requested Circulation (Sum of 15b (1), (2), (3), and (4)) ▶			367,938	257,285
d. Nonrequested Distribution (By Mail and Outside the Mail)	(1)	Outside County Nonrequested Copies Stated on PS Form 3541 (Include Sample copies, Requests Over 3 years old, Requests Induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources)	100,971	105,141
	(2)	In-County Nonrequested Copies Stated on PS Form 3541 (Include Sample copies, Requests Over 3 years old, Requests Induced by a Premium, Bulk Sales and Requests including Association Requests, Names obtained from Business Directories, Lists, and other sources)	947	38
	(3)	Nonrequested Copies Distributed Through the USPS by Other Classes of Mail (e.g. First-Class Mail, Nonrequestor Copies mailed in excess of 10% Limit mailed at Standard Mail® or Package Services Rates)	40	2
	(4)	Nonrequested Copies Distributed Outside the Mail (Include Pickup Stands, Trade Shows, Showrooms and Other Sources)	0	0
e. Total Nonrequested Distribution (Sum of 15d (1), (2), and (3))			101,958	142,235
f. Total Distribution (Sum of 15c and e) ▶			469,896	399,520
g. Copies not Distributed (See Instructions to Publishers #4, (page #3)) ▶			36,163	31,929
h. Total (Sum of 15f and g)			506,059	431,449
i. Percent Paid and/or Requested Circulation (15c divided by f times 100) ▶			78.3	64.4

16. Publication of Statement of Ownership for a Requester Publication is required and will be printed in the December 2013 issue of this publication.

17. Signature and Title of Editor, Publisher, Business Manager, or Owner — Date: 10/18/2013

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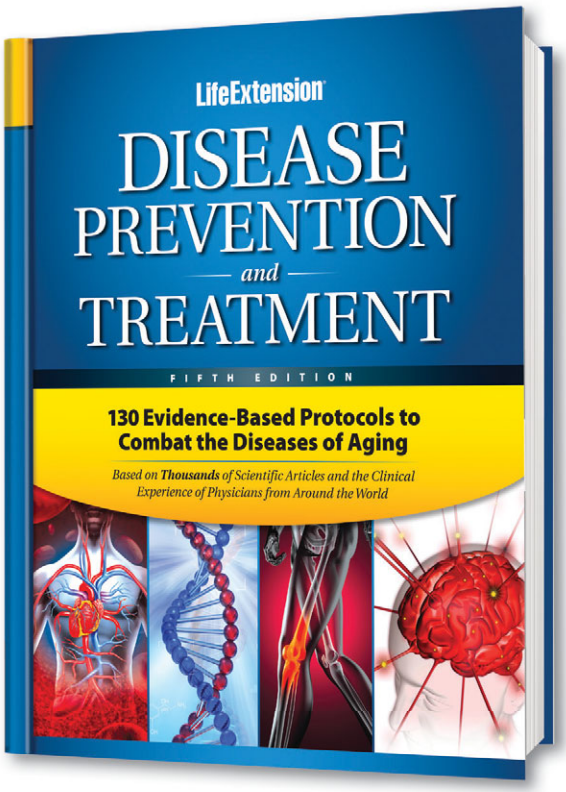

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THE UPGRADED **LIFE EXTENSION MIX™**

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.

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

Vegetable-Fruit Complex

Decaffeinated Green tea extract *(45% EGCG)*	325 mg
Broccoli sprout concentrate extracts and calcium D-Glucarate	725 mg
(providing sulforaphane, glucosinolates, D-3T, and PEITC)	
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)	15 mg
(465 mcg trans-zeaxanthin)	
Maqui Berry *(Aristotelia chilensis)* 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	300 mg
(proprietary blend of concentrated blackberry, blueberry, cherry, cranberry, elderberry, persimmon, prune powders)	
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 *(Prunus cerasus)* proanthocyanidin extract	85 mg
Delphinidins	2 mg
(from Delphinol® Maqui berry *(Aristotelis chilensis)* extract)	

Water-Soluble Vitamins and Enzymatic Activators

Vitamin C	2000 mg
as: ascorbic acid, calcium, magnesium & niacinamide ascorbates, ascorbyl palmitate, acerola extract	
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

THE MOST COMPLETE MULTIVITAMIN AVAILABLE TODAY

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**.

Life Extension Mix™ now contains an upgraded **vitamin B12** that offers *superior absorption* compared to other forms of B12.

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.

The content of **delphinidins** in the new Life Extension Mix™ is equivalent to 3 1/4 cup of **raspberries** or 5 3/4 cups of dried **plums**.

During **Super Sale**, the full daily dose of Life Extension Mix™ can be obtained for as little as **$1.34** per day.

Fat-Soluble Vitamins

Vitamin A (as Betatene® natural beta-carotene from dunaliella and acetate)	5,000 IU
Vitamin D3 (cholecalciferol)	2,000 IU
Vitamin C (as calcium ascorbate, ascorbic acid, ascorbyl palmitate, magnesium ascorbate, niacinamide ascorbate, acerola extract)	2,000 mg
Vitamin E (natural D-alpha tocopheryl succinate and D-alpha tocopherol)	100 IU
Natural mixed tocopherols (prodiving gamma, delta, alpha, and beta tocopherols)	60 mg

Amino Acid Complex

N-acetyl-L-cysteine	600 mg
Taurine	200 mg

Mineral Complex

Selenium (from Se-methyl L-selenocysteine)	100 mcg
Selenium (from L-selenomethionine—SelenoPure™)	50 mcg
Selenium (from sodium selenite)	50 mcg
Zinc (as zinc citrate)	20 mg
Zinc (monomethionine) (OptiZinc®)	15 mg
Boron (Albion® bororganic glycine)	3 mg
Calcium	218 mg
Copper (as copper bisglycinate chelate TRAACS®)	1 mg
Chromium (as Crominex® 3+ chromium stabilized with Capros® and PrimaVie® Shilajit)	500 mcg
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

Cholinergic Complex

Choline (from bitartrate)	120 mg
Phosphatidylcholine (from soy)	150 mg
Inositol	250 mg

Vitamin D3 helps maintain healthy bone density and DNA. There is five times more vitamin D in LIFE EXTENSION MIX™ compared to conventional multivitamins.

The **Life Extension Mix™** utilizes **natural** mixed **tocopherols** that provide natural vitamin E from alpha tocopherol and a small amount of gamma tocopherol (40 mg). Compared to synthetic vitamin E, the natural form is far more **bioavailable** to the body.

N-acetyl-L-cysteine suppresses free radicals inside the cell and maintains healthy glutathione levels. **Taurine** may protect against free radicals between cells and supports eye health.

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.

Zinc is often poorly absorbed, but LIFE EXTENSION MIX™ provides two of the most bioavailable forms of zinc.

Boron is not only needed to maintain healthy bone density but may also help promote healthy prostate cell function.

LIFE EXTENSION MIX™ provides a high amount of an optimal form of **chromium** to help maintain arterial wall structure and already normal glucose levels.

Magnesium helps protect arteries and heart valves, and supports heart and brain cells. LIFE EXTENSION MIX™ provides high potencies of six different forms of magnesium to fully saturate the body with this life-saving mineral.

Maintaining high levels of **acetylcholine** in the brain helps support cognitive function and memory.

Contains soybeans. Contains fish (Tilapia).

1) Betatene® is a registered trademark of BASF SE. 2) Delphinol® is a registered trademark of MNL protected by U.S. patent application US 13/076,117 and WPO PCT/IB2010/002698. 3) OptiZinc® is a registered trademark of InterHealth Nutritionals, Inc. 4) SelenoPure™ is a trademark of Nutrition 21. 5) Crominex® 3+, Capros® and PrimaVie® are registered trademarks of Natreon, Inc. 6) Leucoselect® is a registered trademark of Indena S.p.A. 7) BioVin® is a registered trademark of Cyvex Nutrition. 8) Tomat-O-Red® is a registered trademark of LycoRed LTD. 9) POMELLA® Extract is covered under U.S. Patent 7,638,640 and POMELLA® is a registered trademark of Verdure Sciences, Inc. 10) pTeroPure™ is a trademark of ChromaDex, Inc. 11) MirtoSelect® is a registered trademark of Indena, S.p.A., Milan, Italy. 12) TRAACS® and Albion® are registered trademark of Albion Laboratories, Inc. 13) CherryPure® is a registered trademark of Shoreline fruit LLC.

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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Multiple Mechanisms for the Support of Healthy Blood Sugar Levels

Tri Sugar Shield™

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

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

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

Tri Sugar Shield™ provides three plant-derived nutrients that—through their ***rich array of complementary mechanisms***[3-18]—afford an unrivalled level of optimal, broad-spectrum support for healthy glucose metabolism in aging individuals within normal range.

MULTI-PRONGED APPROACH

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

Sorghum Extract

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

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

Mulberry Leaf Extract

Mulberry leaf has been used in Chinese traditional medicine for centuries. Like sorghum, mulberry leaf extract targets ***three*** different mechanisms:

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

Phloridzin

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

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

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

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

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

A bottle of 60 vegetarian capsules of **Life Extension® Tri Sugar Shield**™ retails for $36. If a member buys four bottles during **Super Sale**, the price is reduced to **$21.60** per bottle.

Item #01803

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To order Life Extension® Tri Sugar Shield™, call 1-800-544-4440 or visit www.LifeExtension.com

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.**[11,12] Combining **BCM-95®** with a high content of **turmerones** provides health consumers with more benefical **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 CO_2 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 during **Super Sale**, the price is reduced to **$18.23** per bottle. **Contains soybeans.**

Item# 01808

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

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