

HORMONE THAT PROTECTS AGAINST BREAST CANCER

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November 2013

Startling Findings in Estrogen Debate

Novel Way to Block Esophageal Reflux

European Lactase Formula Combats Lactose Intolerance

Fight Skin Aging with Coffee Extracts



Suzanne Somers
Crusade to Reverse Premature Aging



Item # 01596

Your Skin's Internal Moisturizer

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

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

Restore Ceramides Naturally from Within!

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

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

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

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

The Moisturizing Pill the Japanese Have Enjoyed for a Decade!

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

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

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

Contains wheat.

Lipowheat™ is a trademark of LAVIPHARM Group of Companies.

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

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Accessed August 10, 2010.

REPORTS



32 NOVEL WAY TO BLOCK ESOPHAGEAL REFLUX

A variety of drugs reduce stomach acid, but none prevent the backwash of stomach contents into the esophagus that exacerbates heartburn and increases esophageal cancer risk. A natural, **raft-forming alginate** can provide **esophageal relief** by blocking reflux of stomach contents into the esophagus...without drugs!



42 REPLENISH FEMALE HORMONES WHILE GUARDING AGAINST RISKS

Concern about cancer is why more aging women do not restore their sex hormones to youthful levels. Compelling evidence indicates that **natural progesterone**, along with a healthy diet and nutrients such as **indole-3-carbinol** may slash cancer risk.



64 NEW ENZYME MITIGATES LACTOSE INTOLERANCE

People with lactose intolerance must avoid milk products otherwise diarrhea, gas, nausea, abdominal bloating, and cramps can result. Lactose intolerance, left untreated, can lead to nutritional deficiencies. Researchers in Europe have developed an *advanced lactase enzyme* formulation that restores the ability to safely digest lactose without stomach distress.



76 2012 MOLECULAR GENETICS OF AGING CONFERENCE

Our understanding of the role genetics plays in deleterious aging processes is rapidly expanding, thanks to gatherings like the **2012 Molecular Genetics of Aging Conference**, where over 100 presentations and 80 poster sessions were given by the world's leading experts on genetics and aging. Life Extension attended this conference and reveals innovations that may lead to substantively extended human life spans.



84 FIGHT SKIN AGING WITH COFFEE EXTRACTS

Age and ultraviolet radiation cause unsightly alterations to facial skin. International researchers have discovered that topically applied coffee bean extracts help reverse photo-damage and reduce fine lines and wrinkles.



57 ON THE COVER

SUZANNE SOMERS

It's no accident that **Suzanne Somers** has become a leading health advocate for women who refuse to accept the debilitating impact of **aging**. From battling **cancer** to restoring natural **hormone** balance, **Suzanne** is today's crusader in recommending novel solutions to defend women against degenerative aging. Her new book is the next step in her journey ... and maybe in yours.

DEPARTMENTS



7 SURPRISE FINDINGS IN ESTROGEN DEBATE and HORMONE THAT MAY PROTECT AGAINST BREAST CANCER

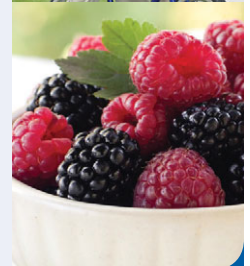
A dispute has raged as to whether maturing **women** should replace their **sex hormones**. When the **Women's Health Initiative** study showed these drugs increased risk of **breast cancer** and **vascular disease**, a stampede to halt their use ensued. **Life Extension** long ago built a strong case **against** synthetic **progestin** in favor of natural **progesterone**. A new study provides further evidence that synthetic **progestin** is the villain. Furthermore, a combined analysis from **27** published studies reveals a **28% reduction** in **mortality** in menopausal women under age 60 who replace their sex hormones.

25 IN THE NEWS

Iron accumulation in the brain may cause Alzheimer's disease; even "safe" levels of sugar may reduce life span; EPA improves insulin sensitivity; omega-3 deficiency contributes to teen psychological disorders; red meat linked with risk of type II diabetes; and much more.

93 SUPERFOODS

Raspberries stand out for their wealthy supply of **ellagitannins**. Studies show that these difficult-to-find phenolic compounds, along with the raspberry's rich content of anthocyanins, provide potent anti-inflammatory and anticancer properties.





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CRUCIFEROUS

Vegetable Extracts in Convenient Capsules

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

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

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

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

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



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

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

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

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**To order Triple Action Cruciferous
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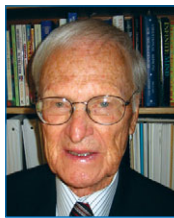
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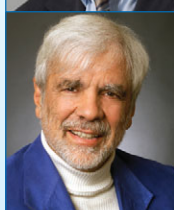
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Vitamin K2 (as menaquinone-7)	200 mcg
Magnesium (as magnesium oxide)	300 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	3 mg
Zinc (as zinc amino acid chelate)	2 mg
Manganese (as amino acid chelate)	1 mg
Silicon (from horsetail extract)	5 mg

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

Surprise Findings in Estrogen Debate



BY WILLIAM FALOON



A dispute has raged for 70 years as to whether or not maturing **women** should replace their **sex hormones**. The **age-reversal** impact of **hormone replacement** is quite noticeable. As a result, many women want to stay on their hormones for life.

By year **2002**, doctors were liberally prescribing **estrogens** and synthetic **progestin** to females with **menopausal** symptoms.

When the **Women's Health Initiative** study showed these drugs increased risk of **breast cancer** and **vascular disease**, a stampede to halt their use ensued.¹

For the past decade, mainstream medicine struggled to accurately interpret and understand the results of the **Women's Health Initiative** data. They also largely ignored the potential benefits of individualized dosing using natural human **estrogens** and **progesterone**.

Life Extension® long ago analyzed the underlying data. We built a strong case **against** the use of synthetic **progestin** in favor of natural **progesterone**.²⁻⁹ We also argued that if aging women did not maintain **youthful** hormone balance, tragic impacts on **quality of life** and **longevity** would result.¹⁰

In **2013**, a published analysis emanating from **Yale School of Medicine** provided further evidence that synthetic **progestin** was the villain that caused female sex hormones to be abandoned beginning between **2002-2004**.¹¹

Even more compelling, these researchers estimated that over the past decade, anywhere from **18,600** to **91,600** postmenopausal women ages 50-59 years who had undergone a hysterectomy may have **died** prematurely because they did not take **estrogen** drugs.¹¹

The **2013** Yale report is not an aberration. A combined analysis from **27** published studies reveals a **28%** reduction in **mortality** in menopausal women under age 60 who replace their sex hormones.¹² The studies also show profound **quality of life** improvements in **hormone-replenished** women.¹²

These findings do not mean that women should rush out and seek conventional treatment. Even though some doctors today prescribe natural human hormones, most don't optimally adjust individual dosing, and almost all fail to recommend protocols designed to protect women against carcinogenic and vascular risks.

This article updates women on the benefits of **restoring** natural sex hormone balance based on the latest **scientific evidence**. >



Estrogen is required for youthful cellular function. A **deficiency** of estrogen is associated with the onset of **age-related** disease.^{13,14}

As women enter their perimenopausal years, their bodies' production of estradiol (an important estrogen) and progesterone declines.¹³ Yet these hormones are needed to maintain youthful vitality.

While symptoms of **menopause** vary depending upon individual hormone balance, most women suffer because their bodies no longer produce enough **estrogen** and **progesterone**. Depression, irritability, and short-term memory lapses are common **menopausal** complaints, along with hot flashes, night sweats, sleep difficulties, and weight gain.¹⁵

In the absence of rational hormone replacement, health issues encountered during menopause may adversely impact a woman for the rest of her lifetime.

Starting between the years **2002-2004**, women were told by their doctors to **limit** prolonged use of hormone drugs. Doctors were so concerned that they prescribed hormones only long enough to

obtain relief from menopausal symptoms and then no more.

In depriving women of their sex hormones, doctors **failed** to recognize that **estrogen** and **progesterone** are involved in critical life processes. Disorders relating to **estrogen deficit** include glaucoma, dementia, osteoporosis, heart failure, fragility, genital atrophy, loss of muscle mass and strength, and thinning of the skin.¹⁶⁻³³

Estrogen deficiency may thus be characterized as a state of **accelerated** aging.¹⁴ Today's women are suffering because the mainstream did not bother to embrace alternatives to synthetic **progestin** and **inappropriate estrogen** prescribing.

What Drug Was Causing the Problems?

In their panic to "do no harm," conventional doctors minimized **all** sex hormone prescribing. Yet the two drugs specifically linked to increase cancer and vascular risks in the Women's Health Initiative trial data were **PremPro®** and **Premarin®**.^{1,34}

Premarin® is a horse urine-derived drug that contains some estrogens that are **unnatural** to the human body.³⁴ It is avoided by enlightened women and some doctors today, but is still the most frequently prescribed **oral** estrogen drug.³⁴

PremPro® is a combination of **Premarin®** and a synthetic **progestin**.¹ This **progestin**, called **medroxyprogesterone**, is **not** the same compound as the **natural progesterone** it was supposed to function as.^{35,36}

A review of the published literature reveals that **progestin** is a major culprit behind the higher rates of vascular disease and cancer that caused doctors to abandon **all** female hormone drugs beginning in **2002-2004**.¹¹

Prescribing Errors

Premarin® (horse urine-derived estrogens), **Provera®** (progestin), and **Prempro®** (horse urine-derived estrogens and progestin) were heavily marketed to doctors as simple solutions for menopausal complaints.

Doctors often prescribed the same **oral** dose of these drugs to **all** their menopausal patients, which might explain why a **2004** analysis showed higher incidences of **stroke** in Premarin®-prescribed females.³⁴

What was overlooked was the adverse impact on **arterial blood clotting** based on the **route** of estrogen administration. This is important because **increased** blood clotting mechanisms are observed more often after **oral** rather than **transdermal** estrogen.^{47,48} This emphasizes the importance of women using natural estrogen (and progesterone) as a **topical cream** and **not** taking oral estrogen drug pills.

One of estrogen's benefits in vascular health is to protect against **endothelial dysfunction** by increasing endothelial **nitric oxide**.²⁴ Data shows that the effect of equine (horse urine-derived) estrogens markedly **decreased** gene transcription of a crucial enzyme (nitric oxide synthase) involved in the production of **nitric oxide** in endothelial cells. Compared to natural **human** estrogens, gene transcription of endothelial **nitric oxide synthase** was **30 to 50%** lower in response to **equine** estrogens.⁴⁹

Several studies have shown that the cardio-protective effects of estrogen are largely negated following the **addition** of synthetic **progestin** as was used in the **Women's Health Initiative** trials. For example, estradiol has been associated with beneficial effects on **endothelial function**, as assessed by brachial artery flow-mediated vasodilation, but the effect was **negated** by the addition of **progestin**.⁵⁰

Other study data shows that progestin, but not natural progesterone, increases the risk of coronary vasospasm.⁵¹

If physicians carefully monitored their patients' symptoms as well as checked their menopausal patients' blood levels in response to hormone restoration with natural **estrogen** and **progesterone** creams (**not** pills), they could have **individualized** the dose to potentially maximize benefit and ideally minimize risk.

Fortunately, women today have access to **low-cost natural estrogens** and **progesterone**. They don't have to rely on antiquated drugs (Premarin®/Prempro®/Provera®) that Big Pharma continues to promote to hurried physicians.

What Are "Natural" Hormones?

When you see the term "natural" before a hormone, such as "**natural estrogen**" that does **not** mean it was **derived** from natural sources.

What it means is that the estrogen is made in a laboratory to be **natural** to the **human** body.

Health-conscious people sometimes erroneously believe that a "natural" source of something is safer. An example of why this may not be the case is the drug **Premarin®**, which is derived from "**natural horse urine**." It contains hormones natural to **humans** (e.g. estrone) **and** hormones natural to **horses** (e.g. equilin, equilenin).³⁷

Natural bioidentical estrogen drugs, on the other hand, contain **only** natural-to-the-**human**-body estrogens. In order to obtain these **100%** natural human estrogens, **bioidentical** to those produced in the human body, they have to be synthesized in a laboratory setting.

A phytoestrogen (plant estrogen) called **diosgenin** found in wild yams can be converted in a laboratory into **progesterone**.³⁸ Diosgenin cannot be converted by the human body into progesterone. Wild yam does not contain progesterone.³⁸ So to obtain **natural progesterone**, it also has to be made in a laboratory to ensure it is **100%** **natural**-to-the-**human**-body progesterone.

Progestins are patented, synthetic drugs that protect against estrogen-induced endometrial cancer.³⁶ **Progestins** are not "**natural-to-the-human-body**" as is **natural progesterone**.

Progestins are meant to function like **natural progesterone**, but a huge body of data indicates potential for adverse side effects. For example, some data suggests **natural progesterone** may confer a protective effect against **breast cancer**,³⁹⁻⁴² whereas **progestins** have been linked with increased risk.⁴¹⁻⁴⁵

So while both **progestin** and **progesterone** are made in a laboratory, **progestin** is a foreign compound that is never naturally produced inside a woman's body.

Progesterone is the **bioidentical natural**-to-the-**human**-body hormone that provides many health benefits.

As it relates to "bioidentical" terminology, here is where the various hormone drugs stand:

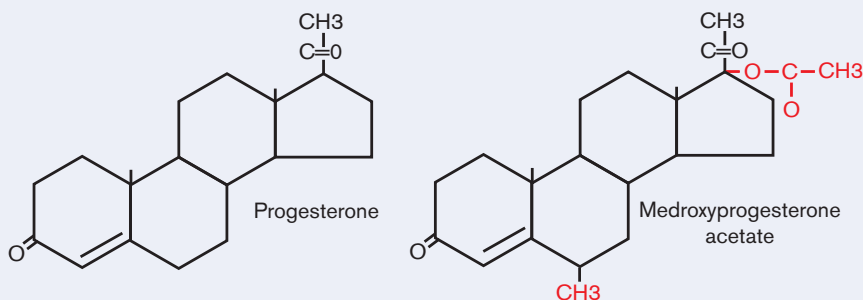
Bioidentical

Natural Estrogen
Natural Progesterone

Non-Bioidentical^{1,34,35,37}

Premarin® (horse urine derived)
Provera® (progestin)
Prempro® (Premarin® + progestin)

Life Extension recommends **bioidentical natural estrogen** and **progesterone** to be used in topically applied **creams** to avoid degradation in the liver.⁴⁶



Natural progesterone (left). One example of synthetic progesterone (right)—note the difference in chemical composition as indicated in red.



Yale Study Shows That Premarin® Is Better Than No Estrogen

In **2013**, a new analysis from the **Women's Health Initiative** was published on women aged 50-59 who had undergone a hysterectomy. These women had significantly reduced levels of estrogen (in particular estradiol) production occurring in their bodies.

This study analysis, emanating from the **Yale School of Medicine**, estimated that between 2002 and 2011 a minimum of about **18,000** and as many as about **91,000** excess deaths occurred among hysterectomized women aged 50 to 59 years who did not take Premarin®.¹¹

For women in this age group taking oral Premarin® (without progesterone), the reduction in deaths from coronary heart disease and colon cancer appear to outweigh the increase in deaths from breast cancer, stroke, and pulmonary embolism.

What makes this finding so compelling is that these women were taking oral Premarin®...

- without **individualized dosing** (to optimize tolerability);
- without **natural progesterone** (to protect against unopposed estrogen on hormone-responsive tissues like the breast, potentially reducing breast cancer risk);³⁹⁻⁴²
- without **topical** preparations (to avoid the first-pass effect of oral estrogen in the liver linked to inflammation and arterial blood clotting);⁴⁶⁻⁴⁸
- without estrogen modifiers like **indole-3-carbinol** (to inhibit formation of estrogenic metabolites linked to increased risk of breast cancer);^{52,53}
- without enough **vitamin D** (to regulate breast cell proliferation);⁵⁴⁻⁵⁶ and
- without being on a comprehensive program that involves ingesting **healthy foods** and reducing intake of dangerous ones.

The size of this analysis by Yale researchers makes a compelling argument that it may be better for **estrogen-deficient** women age 50-59 years to blindly take what many believe to be the worst estrogen drug (oral Premarin®) than to do without **any estrogen at all**.

In addition to the mortality benefit for women ages 50-59 years, hormone therapy in this analysis provided an improvement in **quality-of-life** measures during the first several years of treatment.

Women over 59 did not see these benefits with **Premarin®-only** therapy, nor would we expect them to. Aging humans have to be far more careful as to how they implement a hormone balancing program.

What few have yet to understand is that as women move through **menopause**, their estrogen blood levels can plummet to the range of hysterectomized females. We now know these low estrogen levels can cause significantly higher **death rates**, along with **menopausal miseries**.

The good news is this does not have to happen to women just because they are growing older. There are protocols using only natural bioidentical forms of **estrogen** and **progesterone** absorbed **topically** that, when combined with healthy lifestyle/supplement choices, can more safely induce a rejuvenating effect!

Findings from 27 Additional Studies on Hormone Replacement

No matter how prestigious the institution, or the size or quality of the study, one should always seek out confirmatory data when making a decision as substantive as restoring **sex hormones** back to youthful ranges.

From a mechanistic standpoint, when one understands how essential **estrogen and progesterone** are to a woman's life processes, it would be logical to seek to maintain these hormones at youthful levels for life. But there is always concern about side effects.

To evaluate the worst case scenario, **Life Extension** researchers evaluated data derived from 27 published studies that looked at the long-term effects of many different

forms of conventional estrogen and progestin drugs on menopausal women.¹² Eight of these studies were observational, while 19 were randomized controlled trials involving 16,000 women followed for 83,000 patient-years. Some of the trials used hormone drugs we consider hazardous or suboptimal.

None of these trials follow the comprehensive natural hormone protocols to include nutrient support that **Life Extension** recommended decades ago.

We reviewed data from all these studies to ascertain the **mortality risk** in women taking conventional hormone replacement compared to those who did not. The pooled analysis from these twenty-seven independent studies showed that women under age 60 who replaced their **sex hormones** were **28% less** likely to die!¹²

In the process of not dying, the **quality-of-life** measures showed clear benefit to women who restored their sex hormones.¹²

So what does this tell us? Since **2002-2004**, warnings have emanated from the FDA, mainstream medical groups, and practicing physicians that replacing hormones in maturing women is dangerous. Yet the **2013** Yale study of hysterectomized postmenopausal women, **plus** an analysis of **27** hormone therapy trials using *sub-optimal* hormone preparations in women age 60 years and younger, shows a mortality reduction in women who replace their sex hormones.

There is no question that improperly prescribed hormone replacement is going to increase cancer and vascular risks. But women no longer have to be subjected to outmoded prescribing practices. There is solid data to enable women of all ages to regain a more youthful hormone profile, using natural forms of estrogen and progesterone that have intriguing studies indicating reductions in cancer and vascular risks.

Natural Progesterone Protects Against Breast Cancer

Compared to **synthetic progestin** that stimulates breast cell proliferation, **natural progesterone** has demonstrated a protective effect.

There are at least **17** studies showing that **progestins** significantly **increase** breast cell replication and growth largely due to stimulation of the estrogen receptor by progestins.^{42,45,57-71} In stark contrast, at least **11** studies have shown that natural **progesterone** does not induce estrogen-stimulated breast cell proliferation.⁶⁸⁻⁷⁸

Numerous studies have demonstrated an **increased** risk of breast cancer with the use of synthetic **progestins**.^{1,45,79-81} However, the use of natural (bioidentical) **progesterone** has not been associated with an increased risk of breast cancer.^{39-42,80,82}



Quite to the contrary, research has revealed that natural progesterone **decreases** the risk of **breast cancer**. In a study published in the journal *Breast Cancer Research and Treatment*, 80,000 postmenopausal women using various forms of hormone replacement therapy (HRT) were followed for more than 8 years. Women who used estrogen in combination with synthetic **progestin** had a **69% increased** risk of breast cancer, compared to women who had never used HRT. However, for women who used natural **progesterone** in combination with estrogen, the increased risk of breast cancer was **completely eliminated** with a significant **reduction** in breast cancer risk compared with synthetic progestin use.⁸²

In another investigation, these same researchers found a **40% increased** risk of breast cancer for women who used estrogen with synthetic progestin.⁸⁰ Interestingly, in women who used estrogen combined with natural progester-

one, there was a promising trend toward a **reduced** risk of breast cancer, compared to women who had never used HRT.⁸⁰ In essence, natural progesterone appeared to **protect** women against the development of breast cancer. These findings confirm work done six years earlier that found a trend toward a reduced risk of breast cancer in 1,150 women using natural **progesterone**, compared to non-users of progesterone.⁸³

Compelling research offers further insight into natural progesterone's ability to defend against breast cancer. In a fascinating study, scientists administered estrogen alone, natural progesterone alone, estrogen plus natural progesterone, or placebo to 40 women prior to surgery to remove a breast lump. The hormones were applied topically to the breast for about 12 days before surgery. As expected, when given alone, estrogen caused a **62% increase** in breast cell proliferation rates compared to placebo. Conversely, the addition of natural progesterone to estrogen resulted in a significant **decrease** in the estrogen-induced increase in breast cell proliferation rates. Even more impressive was the finding that the group receiving natural progesterone alone had a nearly **76% lower** breast cell proliferation rate compared to the placebo group.⁷²

Higher Progesterone = Lower Breast Cancer Incidence

A growing body of literature has documented a strong connection between a woman's progesterone levels and her subsequent risk for breast cancer. A trial reported in the *International Journal of Cancer* measured blood levels of pro-

Breast Cancer Is Not the Only Cause of Premature Death

With all the media attention and fundraising by support groups, you might be lulled into thinking the **only** disease women prematurely die from is **breast cancer**.

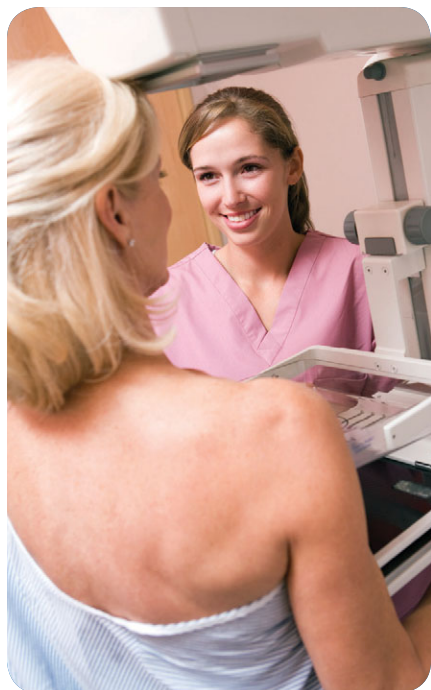
Each year, over **40,000** women in the United States do die of metastatic breast cancer.⁸⁹ But there are a total of about **1,250,000** female deaths each year in this country.⁹⁰ That means for every **one** breast cancer death, there are approximately **31** women who die from something else.

Many of those "**something else**" diseases relate to hormone deficiencies. That does not mean women should ignore breast cancer risk and blindly take hormone drugs. It does, however, bring into context the health issues maturing women really face. These "**something else**" deaths provide a rationale for the **natural hormone restoration** approaches long advocated by progressive physicians and the Life Extension Foundation®.

As you'll read in an article in this month's issue of **Life Extension**, there are prudent ways women can reduce breast cancer risk.

gesterone in 5,963 premenopausal women. Incredibly, the analysis of the data revealed that those women with the **highest** blood levels of **progesterone** who had regular menses experienced an **88% decreased** risk of breast cancer.⁸⁴

These findings corroborate another study in which 1,083 women treated for infertility were followed for upwards of **33 years** to determine their subsequent breast cancer risk. Compared to women with **normal**





progesterone levels, progesterone *deficient* women had a **5.4 times increased** risk of premenopausal breast cancer and were **10 times** as likely to die from any cancer.⁸⁵

Similarly, researchers at the University of North Carolina School of Public Health measured progesterone levels in pregnant women, who were then followed for upwards of **32 years**. The researchers discovered that those women with the **highest** blood levels of progesterone during pregnancy had a promising trend toward a lower risk of breast cancer, compared to women with the lowest levels of progesterone during pregnancy. When the researchers analyzed the risk of breast cancer in women under age 51, those with the **highest progesterone** levels had a staggering **70% decreased** risk compared to the group with the lowest progesterone levels.⁸⁶

Findings from two other investigations revealed that survival rates for breast cancer are strongly correlated with the patient's **progesterone** levels at the time of surgery.^{87,88} One study noted that in cases where cancer had spread to local lymph nodes, **65%** of women with a progesterone level of **4.0 ng/mL** or more on the day of their surgical treatment of **breast cancer** were alive **18 years** later, while only **35%** of women with **low**

progesterone levels on the day of surgery were still living after 18 years.⁸⁸ The scientists noted that progesterone lowers the expression of *vascular endothelial growth factor*, which promotes the increase in new blood vessels (angiogenesis) that is essential for tumor growth. These scientists concluded: ***"This study has confirmed that a raised level of progesterone at the time of tumor excision is associated with an improvement in prognosis for women with operable breast cancer."***⁸⁸

Natural Progesterone and Cardiovascular Health

The Women's Health Initiative, a large randomized clinical trial, demonstrated that the addition of synthetic progestins to estrogen therapy resulted in a substantial increase in the risk of heart attack and stroke.¹

Numerous studies, on the other hand, document that natural progesterone has *beneficial* effects on cardiovascular health.

In one trial published in the *Journal of the American College of Cardiology*, researchers studied postmenopausal women with a history of heart attack or coronary artery disease. The women were given estrogen in combination with either natural

progesterone or synthetic progestin. After 10 days of treatment the women underwent exercise treadmill tests. Compared to the synthetic progestin group, the amount of time it took to produce myocardial ischemia (reduced blood flow to the heart) on the exercise treadmill was substantially *improved* in the natural progesterone group.⁹¹

The risk of a blood clot is a serious concern with the use of **estrogen** replacement therapy, especially by the oral route. This risk doesn't occur when natural progesterone is added to the mix.⁹² One investigation compared the risk of blood clots in postmenopausal women taking natural progesterone to the risk in women taking synthetic progestin. The group of women who used synthetic progestin in combination with estrogen had a startling **290% greater** risk of **blood clots**, compared to the group who never used HRT. The group receiving natural **progesterone** in combination with estrogen, on the other hand, had a **30% decreased** risk of **blood clots**, compared to women who never used HRT.⁹²

Natural Progesterone Protects Against Atherosclerosis

Atherosclerosis (hardening of the arteries) is a leading cause of heart disease. Several studies have determined that synthetic **progestin** promotes the formation of atherosclerosis.⁹³⁻⁹⁵

The story is quite different for natural **progesterone**, where multiple animal studies have shown that natural progesterone *inhibits* the process of atherosclerosis.⁹⁵⁻⁹⁷

To illustrate, scientists fed monkeys with surgically induced menopause a diet known to

cause atherosclerosis for a total of 34 months. The scientists then divided the monkeys into groups that received estrogen alone, estrogen plus synthetic progestin, or a control group that did not receive hormones. The control group developed substantial atherosclerotic plaque. The administration of **estrogen** resulted in a **72% decrease** in atherosclerotic plaque, compared to the control group.⁹⁵

Treatment with synthetic progestin yielded disturbing results. The group of postmenopausal monkeys that received **estrogen** combined with synthetic **progestin** had a similar amount of atherosclerotic plaque as the control group. This showed that synthetic progestin completely *reversed* estrogen's inhibitory effects on the formation of atherosclerosis.⁹⁵

In contrast, when the same investigators administered natural **progesterone** along with estrogen, no such inhibition of estrogen's cardiovascular benefit was seen.⁹⁸

Natural Progesterone Increases HDL

High-density lipoprotein (HDL) functions to *remove* cholesterol from the arterial wall and thus helps protect against the development of atherosclerosis.⁹⁹ Low HDL is a proven risk factor that contributes to heart disease.⁹⁹

Synthetic progestin is known to cause reductions in HDL levels.¹⁰⁰⁻¹⁰² One mechanism by which natural progesterone enhances cardiovascular health is its ability to maintain or even increase **HDL** levels in women receiving estrogen replacement therapy.¹⁰³⁻¹⁰⁵

In one study published in the *Journal of the American Medical Association*, 875 postmenopausal

women were randomized to receive estrogen alone, estrogen combined with synthetic (non-natural) progestin, estrogen combined with natural progesterone, or placebo. The results demonstrated that the group receiving natural progesterone demonstrated much higher **HDL** levels than the group receiving progestin.¹⁰⁶

These results confirm earlier preliminary data provided by researchers who administered estrogen combined with either **progestin** or natural **progesterone** to postmenopausal women. The use of progestin resulted in an undesirable **15% decrease** in **HDL** levels, compared to only minor changes to HDL levels in those patients prescribed natural progesterone.¹⁰⁰

What Happens During Menopause?

The average age of menopause in the United States is only **51**.¹⁰⁷

Perimenopause is the time period leading up to menopause, a time when a woman's hormones may fluctuate quite wildly, producing a variety of uncomfortable effects.¹⁰⁸ Although **estradiol**, a critical estrogen in the body, is significantly reduced in menopause, **estrone**, another important estro-

gen found naturally in a woman's body, does not drop as precipitously, and in some cases, levels of **estrone** may increase in the perimenopausal period.¹⁰⁹

Estrogen dominance is a term that is relatively unrecognized in conventional medicine, yet alternative medical practitioners estimate that this syndrome may affect nearly half the women over age 35 in the United States.¹¹⁰ Caused by an imbalance between estrogen and progesterone, this syndrome may cause many undesirable and dysfunctional issues.¹¹⁰

When the adrenal glands are stressed, they secrete excess cortisol. Cortisol is made from progesterone in the body. Progesterone is depleted as cortisol levels increase because more progesterone is being used to make cortisol.¹¹¹

As more progesterone is shunted or sequestered to make cortisol, less is available to balance estrogen. Another common reason for low progesterone levels is an anovulatory cycle (a menstrual cycle in which there is no ovulation), often observed in perimenopause.^{111,112} Without ovulation there is no corpus luteum to make additional progesterone for the cycle. The reduced progesterone level leads to excessive estrogen and relative deficiency of progesterone.



So for a period of time, perimenopausal women in particular may have relatively high estrogen in relation to **progesterone**. Yet progesterone is **required** to protect against the adverse effects of a relative increase in estrogen.¹¹⁰ Is it any wonder why incidences of cancer and thrombosis (arterial blood clotting) begin to increase in the perimenopausal time period? Progesterone is needed to balance the normal effects of estrogen, which is especially important when estrogen replacement is initiated.

A **blood test** can reveal a woman's own, individualized hormonal needs to include **progesterone** replacement, as well as estrogen, like **estradiol**. Tragically, conventional doctors today are blindly prescribing estrogen drugs without testing their female patients to ascertain their individual needs.

The consequences of untreated menopause from a **longevity** and **quality-of-life** standpoint are severe. Simply defined, meno-

pause is a deviation from youthful **estrogen/progesterone** balance. Proven methods exist to rationally restore hormone status, but most maturing women never learn about it. That's all about to change.

A Vindication for Suzanne Somers

For the past decade, actress and best-selling author **Suzanne Somers** has passionately advocated natural hormone replacement for maturing women. She endured blistering criticism from mainstream doctors who warned of catastrophic problems if women dared to restore their **estrogen/progesterone** to youthful ranges.

Suzanne's fervent position was that individualized dosing of natural estrogens and **progesterone** markedly improves life quality and extends healthy life span.

Mainstream doctors based their dire warnings on the huge



Women's Health Initiative study whose initial results were released in the **2002-2004** period. This study looked at women taking oral **Premarin®** or **PremPro®** and linked these drugs to increased disease risk.¹ Subsequent studies and analysis reveal these deadly effects were caused by **synthetic progestin** and probably the **orally** administered **Premarin®**. Suzanne figured this out before mainstream medicine.

Premarin® by itself was linked to increased **stroke** risk, which is probably related to:

- 1) It being prescribed **orally** (instead of transdermal),
- 2) The **horse estrogens** counteracting estrogen's endothelial benefits, plus
- 3) Doctors failing to prescribe **natural progesterone** to balance out the effects of **estrogen**.³⁴

As of **2012** the maker of **PremPro®** has paid out **\$896 million** to resolve lawsuits alleging that the drug caused cancer



in women. Another **\$330 million** has been reserved to pay future claims.¹¹³

The **FDA** has not removed **Prempro®** from the market. If you type “**PremPro**” into **Google**, the drug maker has an attractive web-site (www.prempro.com) to induce menopausal women to take it.¹¹⁴

So the question begs, who is going to alert the American public to avoid these lethal hormone drugs?

Suzanne's Commitment

Suzanne Somers is **66** years old. A lot of people retire before this age or are forced to quit working because of health impairments.

Instead, Suzanne is dedicating herself to educating the world about the lethal effects of **synthetic progestin** and the advantages of natural **estrogens** and **progesterone**. She has been a personal beneficiary of natural hormone replacement. Don't be surprised to see her on major television shows airing this year and next.

A dilemma Suzanne recognized long ago was the difficulty women had in locating physicians knowledgeable about prescribing **natural sex hormones** to maturing women. She has spent the last decade interacting with doctors to find out where women could go to have their hormones restored to a youthful range based on individual need.

In her new book, Suzanne describes the profound anti-aging effects that occur in response to natural hormone replacement and reveals a new network of physicians (www.ForeverHealth.com) committed to properly prescribing them.

Big Pharma's Catastrophic Impact on Longevity

In **1994**, I wrote *Life Extension's* first article warning against synthetic **progestins** and horse urine-derived **estrogens**.

An incredible amount of evidence from nearly **20 years ago** showed that **natural progesterone** was safer and more effective than **synthetic progestin** found in **PremPro®** and **Provera®**. Yet the public was kept largely in the dark. The number of female lives that could have been spared had the **FDA** acted humanely (by removing **progestin** drugs) is difficult to calculate. Instead, the FDA issued proclamations that made it more challenging for American women to access **natural progesterone** creams.

Premarin® (horse urine-derived estrogen) was first introduced in **1942**.¹¹⁵ It may have had a place in medical history when properly used. Why women today would choose this **71-year old drug**, when **natural estrogen** creams are widely available indicates how progress is impeded when medicine is dominated by **FDA regulation** in lieu of free market **innovation**.

This editorial revealed startling new findings showing that **estrogen** protects against premature

death in women who are deficient in it.¹¹ This is confirmed by **27** prior studies showing a **28% reduction** in mortality reduction in maturing women who replace their hormones.¹²

What makes these reductions in premature death so compelling is that most of the women in these studies were not using the natural forms of **estrogen** and **progesterone** that have shown superior benefits. The clear message is that restoring youthful hormone balance may be one of the most effective ways to **feel better today** and live much longer in the future.

In this issue of *Life Extension*, we feature an exclusive interview with **Suzanne Somers** and describe ways maturing women can reduce their cancer risks.

It costs **\$75 a year** to belong to the **Life Extension Foundation®**. If the only benefit a woman received was learning about the lethal effects of **synthetic progestin** nearly **20 years ago**, then membership may have resulted in one of life's grand bargains.

For longer life,



William Faloon

References for this article begin on page 18.





The First Step in Achieving **YOUTHFUL** HORMONE BALANCE

When maturing women read about the benefits of youthful hormone restoration, they are eager to implement a personalized replacement program.

The first step is to have the proper **blood tests** to evaluate a woman's individual hormone needs. Armed with the results of her blood tests, a woman's doctor can **immediately** prescribe **hormones** that are just right for her.

Life Extension® has introduced a **Female Hormone Replacement Panel** that costs a fraction of what commercial labs charge.

This new **Female Hormone Replacement Panel** includes:

Estrone	DHEA-S
Estradiol	Progesterone
Testosterone (free)	TSH (thyroid)
Plus...	
Glucose	Total cholesterol
LDL	HDL
Triglycerides	Calcium
Iron	Potassium
Liver function	Kidney function
Immune cell count	Anemia analysis

DISCOUNTED PRICES

The retail cost of these individual tests can easily exceed **\$400**. The special discounted price of the **Female Hormone Replacement Panel** for Foundation members is only **\$189**.

There's no need to make an appointment or be delayed. Just call **1-800-208-3444** and we'll mail or email a requisition to you along with a list of local drawing stations in your area.* Most of our blood drawing stations allow you to walk-in at your convenience. Results usually come back within 2 weeks and we can email (or mail) them to you.

Life Extension's unique blood testing service provides the most efficient and cost effective way of quickly assessing **hormone** status along with other health parameters so your doctor can prescribe the precise dose of **progesterone**, **estrogen**, and other natural hormones *your* body needs. **Item # LC100023**

To order the new
Female Hormone Replacement Panel,
call **1-800-208-3444** (24-hours)
or visit **www.lef.org/female**

* Blood tests are available only in the continental US and are NOT available in Maryland. Residents of NY, NJ, RI and MA will receive a blood draw kit and may incur an additional blood draw fee.

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NATURAL PROGESTERONE CREAM™

Progesta-Care®

Item # 01441



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Many people know that **natural progesterone** supplementation has become popular among women who are menopausal, peri-menopausal, or premenstrual seeking to maintain a normal level of progesterone and a balanced ratio of estrogen to progesterone. Less well-known is the fact that having sufficient progesterone in the body provides many health-enhancing benefits to **both** men and women.¹

In fact, **natural progesterone** has been touted as a “miracle hormone” because—by helping the body to modulate the activities of estrogen—it can confer **multiple** health benefits.^{2,3} These include natural support for healthy cell growth, neuroprotection, normal sleep, bone growth, healthy weight, libido, and memory.³⁻⁹

Topically applied **Progesta-Care® Progesterone Cream™** is a natural source of *USP progesterone*, which is biologically identical to the hormone produced by the human body.

Cream is an efficient way to supplement with progesterone, because the cream's highly **lipophilic**, or fat-soluble, molecules allow it to be well-absorbed through the skin.¹⁰ From the fat layer of the skin, natural progesterone is absorbed into the capillary blood supply, making progesterone *readily* available to all target tissues.

PROGESTA-CARE® PROGESTERONE CREAM™:

- Pre-measured, airtight, hygienic dispensing pump.
- Each pump provides approximately a two-month supply
- USP grade micronized natural progesterone
- Includes aloe vera, tocotrienols (vitamin E), primrose oil, MSM, grape seed extract, sunflower seed oil, and burdock root extract—for additional support
- Synthetic-free, including paraben-free
- No fragrances
- Fast-absorption formula
- Non-oily—does not leave a residue on the skin
- 480 milligrams of natural progesterone per ounce of cream

Progesta-Care® Natural Progesterone Cream™ simplifies consistent dosing

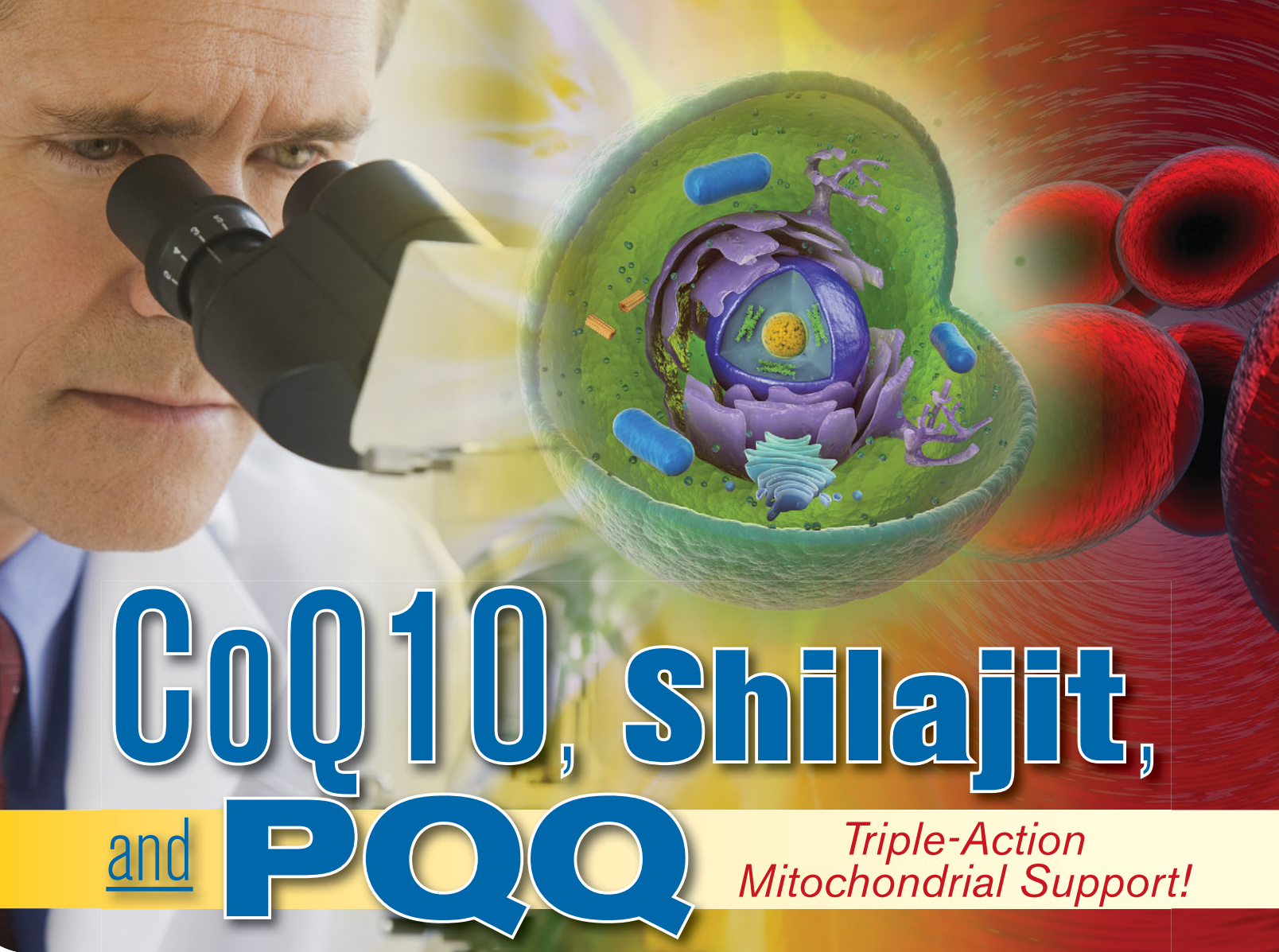
One full press of the airtight, hygienic pump bottle automatically dispenses a pre-measured amount equivalent to approximately **20 milligrams** of natural progesterone (USP). No guesswork. No mess.

A pump bottle of 4 oz. cream (118 milliliters) of **Progesta-Care® Progesterone Cream™** retails for \$35. If a member buys four bottles, the price is reduced to **\$24** per bottle. Each bottle lasts the average user about **two months**.

Caution: Do not use if you are pregnant, lactating or intend to become pregnant. Do not exceed 2 oz. of this product topically per month. Consult with your physician before using this product.

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CoQ10, Shilajit, and PQQ *Triple-Action Mitochondrial Support!*

Life Extension® continues to develop increasingly potent mitochondria-boosting formulations.¹⁻⁴

The new **Super Ubiquinol CoQ10 With BioPQQ®** contains **shilajit** (which studies have shown doubles CoQ10 levels in the mitochondria), **plus** the breakthrough compound **PQQ** (shown to support the **spontaneous generation of new mitochondria** in aging cells). This represents a **three-way** strategy for enhanced mitochondrial support!

1. SUPER UBIQUINOL COQ10

CoQ10 is required to convert the energy from fats and sugars you eat into usable cellular energy. More people are supplementing with CoQ10 than ever before. A key reason is increased awareness that the body's production of CoQ10 declines significantly with advancing age.⁵ "Statin" drugs also deplete CoQ10 levels in the blood and, possibly, tissues.^{6,7} For example, statin drugs reduce plasma CoQ10 by almost **40%**—but the aging process *itself* reduces CoQ10 levels in the heart muscle wall by **72%**!⁸

Scientific studies show that **absorption** of the **ubiquinol** form of CoQ10 is far greater than the conventional

ubiquinone form. In middle-aged mice, **ubiquinol** was shown to be **40% more effective** in slowing measurements of aging, compared to ubiquinone.⁹ **Life Extension®** offers this highly bioavailable ubiquinol form of patented CoQ10 in an advanced delivery system, providing an unparalleled absorption level.¹⁰

2. ENHANCED SUPPORT WITH SHILAJIT

PrimaVie® shilajit has been shown to **double** levels of **CoQ10** in mitochondria!¹¹ Combining CoQ10 and shilajit produced a **56% increase** in energy production in the brain—**40% better** than CoQ10 alone. And in muscle, there was a **144% increase** in energy production—**27% better** than CoQ10 alone.¹²

Shilajit boosts CoQ10's beneficial effects by stabilizing CoQ10 in the superior **ubiquinol** form.^{13,14} Additionally, shilajit facilitates more efficient delivery of CoQ10 into the mitochondria, which results in greater cellular energy production.¹⁵⁻¹⁸ Shilajit itself is rich in essential compounds that help the mitochondria convert fats and sugars into **ATP** (adenosine triphosphate), the body's main source of energy.¹⁶



ITEM # 01733

3. PQQ PROMOTES GROWTH OF NEW MITOCHONDRIA!

Supporting mitochondria is one thing. But until recently, the only options for aging individuals to promote replenishment of the declining numbers of mitochondria in their bodies were long-term calorie restriction or exhaustive physical activity—difficult or impractical for most aging people.

Now **PQQ** offers a viable alternative: **PQQ** (*pyrroloquinoline quinone*) promotes **spontaneous production of new mitochondria!**¹⁹

In fact, **PQQ** promotes youthful cellular function in **three** distinct ways:

- **Promotes mitochondrial biogenesis.** PQQ activates genes that promote the formation of *fresh mitochondria!*¹⁹ It also beneficially interacts with genes directly involved in mitochondrial health. These same genes support *healthy body weight, normal fat and sugar metabolism, and youthful cellular proliferation.*²⁰
- **Mitochondrial defense.** Mitochondria possess their *own* DNA, distinct from those contained in the cell nucleus. Unfortunately, compared to nuclear DNA, mitochondrial DNA are relatively unprotected—and yet situated at the *source* of both energy and free-radical production! PQQ's antioxidant potency and favorable gene-expression profile powerfully boost mitochondrial defense.
- **Antioxidant power.** PQQ is a potent antioxidant. Its extraordinary molecular stability enables it to facilitate thousands of antioxidant reactions in the mitochondria—*without breaking down*—for maximum antioxidant and bioenergetic support.²¹

PQQ is an **essential nutrient**, meaning that your body cannot make it on its own. A wealth of research demonstrates that—alone and especially in combination with CoQ10—its unique nutritional profile supports heart health and brain function.²²⁻²⁴ This should be no surprise, given how much energy these vital organs need.

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

BREAKTHROUGH WEAPON IN THE BATTLE AGAINST AGING!

Super Ubiquinol CoQ10 With BioPQQ® combines:

- **CoQ10** in a super-absorbable *ubiquinol* form.
- **Shilajit** to synergistically boost mitochondrial CoQ10 levels and youthful cellular energy.
- **PQQ** to support spontaneous generation of new mitochondria in aging people.

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

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

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

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

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

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

Rich Rewards®

Breakfast Blend Ground Coffee

TWO NEW DELICIOUS NATURAL FLAVORS!

One Smart Cup of Coffee®

In a recently published study, researchers found that those living on the Greek island of Ikaria had a healthier and longer life span due to their daily intake of strong coffee.¹

The researchers also report that the healthy endothelial function supported by coffee compounds may play a major role in this longevity effect.¹

Polyphenol-Retained Coffee

Not all coffee delivers the same powerful health benefits and longevity dividend.²⁻⁶

When it comes to obtaining coffee's full range of health benefits, *most people aren't getting their money's worth!*

The reason? Most of the coffee bean's polyphenol content is **destroyed** during the roasting process.

Among the most beneficial of these polyphenols is **chlorogenic acid**, a potent inhibitor of the **glucose-6-phosphatase** enzyme that stimulates **gluconeogenesis**. (Excess **gluconeogenesis** results in too much glucose produced in the liver that can cause elevations of blood glucose.)

Life Extension®'s Rich Rewards® Breakfast Blend is made using a patented, **100% natural** process called **HealthyRoast™**.⁷

This process delivers a more complete nutritional profile of the coffee bean, yielding **chlorogenic acid** levels *far greater* than other premium brands—up to **87% more** chlorogenic acid than conventional coffees!

Handpicked deep in the rainforests of Central America, **Rich Rewards®** consists exclusively of **100% USDA certified organic arabica** coffee beans, gently roasted in small batches and ground for easy brewing.

Natural Flavored Options!

To make your morning cup of coffee even more enjoyable, Life Extension® now offers our **Rich Rewards® Breakfast Blend Ground Coffee** in two delicious flavors:

- **Natural Vanilla Flavor** and
- **Natural Mocha Flavor**

And like our regular, unflavored **Rich Rewards®** coffee, these flavored ground coffees are roasted using the same **HealthyRoast™** process—which preserves special, naturally occurring compounds in coffee that **soothe your stomach**. This unique process also guarantees a higher content of healthy **polyphenols**.

Now those who prefer a flavored coffee—as well as those who find that ordinary coffee brands upset their stomach—can enjoy the potent **longevity** support that daily coffee consumption delivers!

One Smart Cup of Coffee®

Life Extension® **Rich Rewards® Breakfast Blend Ground Coffee** provides it all:

- Savory taste—regular coffee taste or 2 natural flavored options!
- Far higher percentage of **chlorogenic acid** than conventional coffees!
- Certified **100% organic!**
- Special, naturally occurring compounds that **soothe your stomach!**

A 12 oz bag of Life Extension® **Rich Rewards® Breakfast Blend** retails for \$15. Members pay **\$11.25** per bag.



Item #01729



Item #01730

Note: Rich Rewards Breakfast Blend Antioxidant Coffee regular caffeinated (Item# 1609) and decaffeinated (Item# 1610) are still available.

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To order either of the natural flavored Rich Rewards® Breakfast Blend Ground Coffee options or the regular unflavored Rich Rewards® Breakfast Blend Ground Coffee, call 1-800-544-4440 or visit www.LifeExtension.com



IN THE NEWS

Higher Vitamin D Levels Associated with Reduced All-Cause Mortality

The results of a meta-analysis published in *BioMed Central Public Health* reveal a lower risk of dying over 3.8 to 13.5 years of follow-up among men and women with higher vitamin D levels.*

Lynne Rush and her associates analyzed the findings of nine studies which provided data on serum **25-hydroxyvitamin D** status and mortality for a total of 24,297 adults of varying ages. Over the studies' follow-up periods, 5,324 deaths occurred. After adjusting for several factors, a **19%** higher risk of dying from any cause over follow-up was found among those with lower serum vitamin D as compared to higher levels. When the subjects were analyzed according to age, the adjusted risk of dying was **12%** higher for subjects with low vitamin D in studies of subjects whose age averaged less than 65 years. For people over age **65**, the adjusted **risk of dying** was **25% higher** in those with low serum **25-hydroxyvitamin D** levels.

Editor's Note: "As far as we are aware, this is the only systematic review and meta-analysis that has specifically investigated whether the apparent association between low vitamin D status and all-cause mortality is age-dependent," the authors announced. "Further studies investigating the association between vitamin D deficiency and all-cause mortality in younger adults with adjustment for all important confounders (or using randomized trials of supplementation) are required to clarify this relationship."

—D. Dye

* *BMC Public Health*. 2013 Jul 24;13(1):679.

Previously Deemed "Safe" Levels of Sugar May Reduce Life Span

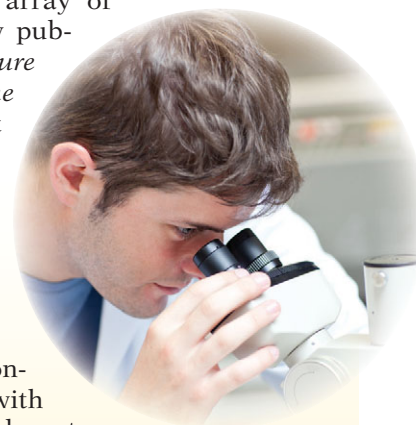
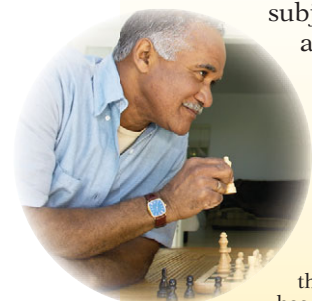
Sugar intake in all of its forms has increased rapidly over recent decades. This mass consumption of sweets and sweeteners has shown a strong correlation to a wide array of lethal diseases. A study published in the journal *Nature Communications* by the Department of Biology at the University of Utah used rodent models to elucidate mechanisms of sugar toxicity, but only at concentrations beyond typical human exposure.*

In this new study, control mice were mixed with mice being fed human-relevant concentrations of added sugar.

The fructose/glucose-fed females experience a **twofold increase** in mortality while fructose/glucose-fed males controlled **26%** fewer territories and produced **25%** less offspring. The findings show that comparatively low levels of added sugar consumption have substantial negative effects on mouse survival, competitive ability, and reproduction.

—M. Richmond

* *Nat Commun*. 2013 Aug 14;4:2245.



EPA Improves Insulin Sensitivity and Lowers Blood Glucose Levels in Overweight Diabetics

The results of a double-blinded trial published in the *Singapore Medical Journal* show positive effects for the omega-3 fatty acid eicosapentaenoic acid (EPA) in overweight type II diabetics.*

Mahmoud Djalali and his associates at Tehran University of Medical Sciences randomized 67 overweight men and women with type II diabetes to receive **2,000 milligrams** EPA or a corn oil placebo daily for 12 weeks. Blood samples collected before and after treatment were analyzed for hemoglobin A1c (HbA1c, a marker of long-term glucose control), fasting plasma glucose, and fasting serum insulin.

While plasma glucose, HbA1c, and serum insulin levels had increased by **4%, 3%, and 4%** in the control group by the end of the study, they declined by **11%, 8%, and 3%**, respectively, in those who received EPA. Insulin resistance also improved among those who received EPA.

Editor's Note: The authors note that, in contrast with the findings of other studies with shorter durations, the current study's length could account for the improvement observed in HbA1c, which represents average glucose concentration over the previous months.

—D. Dye

* *Singapore Med J.* 2013 Jul;54(7):387-90.



Omega-3 Deficiency Could Contribute to Teen Psychological Disorders

Findings reported in *Biological Psychiatry* suggest that modern diets deficient in omega-3 fatty acids could be the culprit behind the prevalence of anxiety, hyperactivity, and poor cognition observed among many adolescents.*

By breeding successive generations of rats given diets containing reduced amounts of omega-3, Bitu Moghaddam and colleagues created a model of the deficiency that has occurred in humans over the past several decades when animals used for meat were switched from an omega-3-rich grass-based diet to one based on grains. The researchers found an increase in anxiety and hyperactivity in deficient adolescent animals, as well as a reduction in the rate of learning in comparison to animals given diets that contained adequate amounts of omega-3. "We have always assumed that stress at this age is the main environmental insult that contributes to developing these conditions in at-risk individuals but this study indicates that nutrition is a big factor, too," Dr. Moghaddam stated.

Editor's Note: "We found that this dietary deficiency can compromise the behavioral health of adolescents, not only because their diet is deficient but because their parents' diet was deficient as well," Dr. Moghaddam remarked. "This is of particular concern because adolescence is a very vulnerable time for developing psychiatric disorders including schizophrenia and addiction."

—D. Dye

* *Biol Psychiatry.* 2013 Jul 25.



High Intake of Red Meat Linked with Risk of Type II Diabetes

A review published in the journal *Advances in Nutrition* found an association between a high intake of red meat and an increased risk for type II diabetes.*

Advanced glycation end products (AGEs) and advanced lipoxidation end products (ALEs) were proposed as mechanisms, with iron as the potential link. Iron facilitates the formation of AGEs and ALEs during the processing and cooking of red meat.

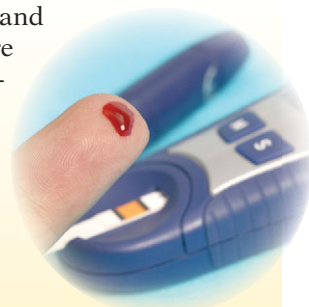
The review included previous findings linking AGEs to insulin resistance and impaired insulin secretion. In an animal model, AGEs inhibited insulin-producing cells.

The scientists conducting the review note that, "The level of contribution from iron to dietary protein oxidation and AGE development in processing is not known, but experimental laboratory testing of this should be carried out in meats with varying lipid contents and between red meat and other dietary AGEs."

Editor's Note: While too much iron is problematic, iron is a necessary dietary element which is deficient in many individuals, particularly premenopausal women.

—Maylin Paez-Rodriguez

* *Adv Nutr.* 2013 Jul 1;4(4):403-11.



Lower Risk of Mortality for Coffee and Tea Drinkers Over a Decade

In a recent issue of the *Journal of Nutrition*, an article was published showing a lower risk of mortality for coffee and tea drinkers over an 11-year average follow-up period.*

The study included 2,461 participants (over 40 years of age) and formed part of the Northern Manhattan Study. At baseline, participants were free of stroke, cancer, and myocardial infarction.

Researchers examined the association by food frequency questionnaire during an 11-year follow-up. The majority of participants were coffee and tea drinkers.

A **7%** reduction in mortality was seen for each additional cup of coffee ingested per day. Strong protection was seen in those who drank 4 or more cups of regular caffeinated coffee. Additionally, a **9%** decreased risk of mortality was seen for each increased cup of tea per day.

The proposed beneficial mechanism is the high antioxidant content of these beverages, although the researchers concluded that further study is needed.

Editor's Note: The authors remark that chlorogenic acid contained in coffee may lower blood pressure via an increase in nitric oxide, thereby contributing to a reduction in premature mortality risk.

—Maylin Paez-Rodriguez

* *J Nutr.* 2013 Aug;143(8):1299-308.



Avoidance of Estrogen Replacement by Hysterectomized Women May Result in Lost Lives

In the *American Journal of Public Health*, Yale researchers estimate that over a 10-year span as many as 91,610 unnecessary deaths have occurred among women between the ages of 50 and 69 years old who had a hysterectomy yet had not availed themselves of estrogen replacement therapy due to fears of its adverse risks.*

Findings from the WHI study in 2002 indicated a greater risk of breast cancer and heart disease among women who used a combination of estrogen and progestin as hormone replacement therapy in comparison with those who received a placebo. Progestin is routinely combined with estrogen to protect against increased proliferation of the uterine lining that can result from using unopposed estrogen. However, in the study arm that investigated the use of estrogen alone (which is prescribed without progestin to women who have had hysterectomies) there was a decrease in the risk of breast cancer and heart disease and a lower rate of mortality over the course of the study.

—D. Dye

* *Am J Public Health.* 2013 Sep;103(9):1583-8.



Iron May Be At Heart of Alzheimer's Disease

A new study from the University of California-Los Angeles, suggests that iron accumulation in the brain may be at the core of Alzheimer's disease.* While many researchers believe the disease is caused by either the tau or beta-amyloid proteins, Dr. George Bartzokis, a professor of psychiatry at the Semel Institute for Neuroscience and Human Behavior at UCLA and senior author of the study, and his colleagues looked at two areas of the brain in patients with Alzheimer's.

They compared the hippocampus, which is known to be damaged early in the disease, and the thalamus, an area that is generally not affected until the late stages.

"It is difficult to measure iron in tissue when the tissue is already damaged," Dr. Bartzokis said. "But the MRI technology we used in this study allowed us to determine that the increase in iron is occurring together with the tissue damage. We found that the amount of iron is increased in the hippocampus and is associated with tissue damage in patients with Alzheimer's but not in the healthy older individuals — or in the thalamus. So the results suggest that iron accumulation may indeed contribute to the cause of Alzheimer's disease."

Editor's Note: Life Extension® warned its members to avoid **iron supplements** in 1983 unless one was diagnosed as being iron deficient.

—M. Richmond

* Available at: <http://www.universityofcalifornia.edu/news/article/29937>. Accessed August 27, 2013.

More Positive Findings for EPA

An article that appeared in the journal *Carcinogenesis* reports an inhibitory effect for the long chain omega-3 polyunsaturated fatty acid eicosapentaenoic acid (EPA), which naturally occurs in fish and fish oil, against squamous cell carcinoma, a type of oral and skin cancer.*

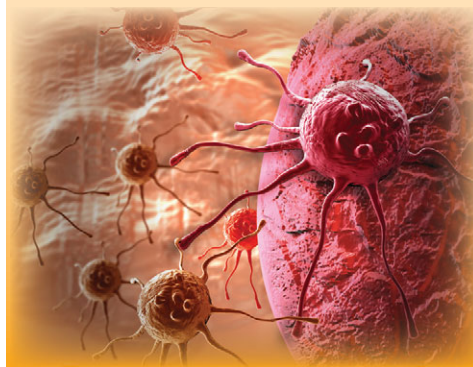
Researchers at Queen Mary University of London tested the effect of EPA in cultures of oral and skin squamous cell carcinoma and in premalignant and normal epidermal cells. They found that the fatty acid inhibited the growth of malignant and premalignant cells and increased programmed cell death (apoptosis) of these cells.

Lead author Zacharoula Nikolakopoulou, PhD, commented that, "As the doses needed to kill the cancer cells do not affect normal cells, especially with one particular fatty acid we used called eicosapentaenoic acid (EPA), there is potential for using omega-3 fatty acids in the prevention and treatment of skin and oral cancers."

Editor's Note: Squamous cells occur in the outermost layers of the skin, as well as in the lining of the digestive tract and other areas. Squamous cell carcinoma is a common form of skin cancer, as well as an oral cancer that is difficult to treat.

—D. Dye

* *Carcinogenesis*. 2013 Jul 26.



Pre-Op Fatty Acids, Antioxidants Help Prevent Post-Operative Atrial Fibrillation

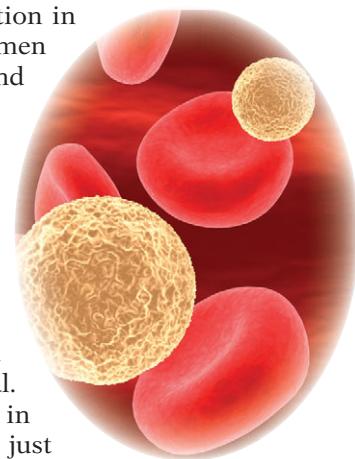
The results of a trial reported in the *Journal of the American College of Cardiology* reveal a reduction in postoperative atrial fibrillation in men and women given omega-3 polyunsaturated fatty acids and vitamins C and E.*

Participants included 307 patients scheduled to undergo on-pump heart surgery. The subjects were randomized to receive a placebo or **2,000 mg** eicosapentaenoic acid (EPA)/docosahexaenoic acid (DHA) beginning seven days prior to surgery, and **1,000 mg** vitamin C and **400 international units (IU)** vitamin E beginning two days before surgery. Supplementation was continued until discharge from the hospital.

Postoperative atrial fibrillation occurred in **32%** of subjects who received a placebo and just **9.7%** of the supplemented group. Researchers Ramón Rodrigo and colleagues calculated that the placebo group had a **3.62 times** greater risk of postoperative atrial fibrillation on any day in comparison with participants who received the supplements.

Editor's Note: Atrial fibrillation is a type of heart arrhythmia that is a major risk factor for stroke and mortality when it occurs following cardiac surgery. Evidence suggests that oxidative stress may play a role in the development of this condition.

—D. Dye



* *J Am Coll Cardiol*. 2013 Jul 31.

CoQ10 Supplementation Improves Glycemic Control, Lowers Cholesterol in Randomized Trial

A recent issue of *Minerva Gastroenterologica e Dietologica* describes a trial conducted at Tehran University of Medical Sciences in Iran which found improved glycemic control and lower cholesterol levels among diabetics given coenzyme Q10 (CoQ10).*

The trial included 64 men and women with type II diabetes who received **200 milligrams** of coenzyme Q10 or a placebo for 12 weeks. Blood samples collected upon enrollment and at the trial's conclusion were analyzed for glucose, hemoglobin A1C (a measure of long term glucose control), and lipids.

At the end of the trial, hemoglobin A1C, total cholesterol, and LDL cholesterol were reduced in the group that received CoQ10 but did not change significantly in the placebo group. "The results of this study showed that 12 weeks of CoQ10 supplementation can improve glycemic control, total cholesterol, and LDL cholesterol, but further studies are needed to confirm these findings," the authors conclude.

Editor's Note: In their discussion, authors R. Kolahdouz Mohammadi and colleagues comment that the elevation of blood glucose that occurs in diabetes can increase the generation of reactive oxygen species, which worsen diabetes complications and pancreatic beta cell dysfunction. The decreased antioxidant reserve observed in diabetics may be responsible for some of the benefits attributed to CoQ10 supplementation which, due to its antioxidant property, helps protect beta cells from glucose toxicity.

—D. Dye

* *Minerva Gastroenterol Dietol*. 2013 Jun;59(2):231-6.

ULTIMATE eye HYDRATION

Maintaining eye support is essential for optimal eye health.

As we get older, our eyes become vulnerable to a variety of insults that can cause irritation and dry eye. With just a few drops of the proper eye lubricant, **eye irritation** stemming from **dryness** may be alleviated.

Brite Eyes provides a powerful dose of two well-established lubricants in every drop, soothing eye discomfort without irritation.

Hydroxymethyl-cellulose and **glycerin** are FDA-approved for ophthalmic use and are uniquely preserved with potent **antioxidants** and **anti-glycating** agents.

The **Brite Eyes** formula is buffered in a way to make it **soothing to the eye**. The suggested use of **Brite Eyes III** is to apply 1 to 2 drops in each eye every day.

Each box of **Brite Eyes III** contains two individual vials that provide **5 mL** each. The reason for putting **Brite Eyes** into individual vials is to reduce the risk of bacterial contamination. Having small vials also makes it convenient for consumers to keep **Brite Eyes** readily accessible at home, the office, in one's purse or pocket, and other places where access to a soothing eye drop is needed.

The retail price for a box containing two **5 mL** vials of **Brite Eyes III** is \$34. If a member buys four boxes, the price is reduced to **\$24 per box**.



Item # 00893

To order **Brite Eyes III**, call 1-800-544-4440
or visit www.LifeExtension.com

Super Potent Multi-Nutrient Formula

Compare CENTRUM® to TWO-PER-DAY:

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

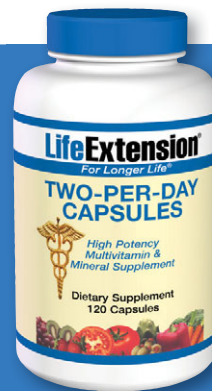
Commercial "one-a-day" supplements provide very low potencies.

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

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

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

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



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

- 4 times more Vitamin D
- 8 times more Vitamin C
- 2 times more Vitamin E
- 10 times more Biotin
- 20 times more Boron
- 4 times more Selenium

- 25 times more Vitamin B6
- 50 times more Vitamin B1
- 12 times more Vitamin B12
- More than twice as much niacin, zinc, and many other nutrients

A bottle containing 120 tablets of **Two-Per-Day Tablets** retails for \$20. If a member buys four bottles, the price is reduced to **\$13.50** per bottle. (Item #01715) A bottle containing 120 capsules of **Two-Per-Day Capsules** retails for \$22. If a member buys four bottles, the price is reduced to **\$15** per bottle. (Item #01714)

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

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

To order Life Extension Two-Per-Day Tablets or Two-Per-Day Capsules,
call 1-800-544-4440 or visit www.LifeExtension.com



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

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

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

A SUPERIOR WHEY PROTEIN

from Grass-Fed, Free Range Cows not treated with Growth Hormone (rBST).

As people age, they become more susceptible to muscle deterioration and a declining immune system.^{1,2} Fortunately, **whey protein** can have a positive impact on muscle construction and immunity due to its *branched-chain amino acid profile* (BCAAs) and naturally occurring *lactoferrin* and *immunoglobins*.^{3-5*}

Unlike many commercial brands on the market, **New Zealand Whey Protein Concentrate** is uniquely derived from **grass-fed, free range cows** living healthy lives in New Zealand and not treated with Growth Hormone (rBST).

Life Extension's New Zealand Whey Protein Concentrate offers the following:

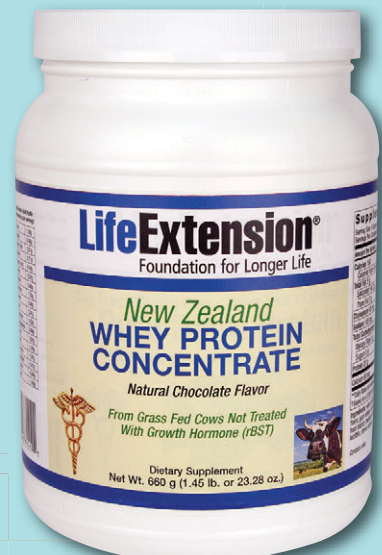
- **Non-GMO Whey Protein Concentrate!**
- **Naturally high levels of essential branched-chain amino acids!**
- **High-quality muscle building protein!**
- **Easily mixes into water or milk!**
- **Great Taste!** – Available in both **natural chocolate** and **natural vanilla** flavors.

The retail price for an 18.34 ounce container of **New Zealand Vanilla Flavored Whey Protein Concentrate** (Item # 01770) or for a 23.28 ounce container of **New Zealand Chocolate Flavored Whey Protein Concentrate** (Item # 01771) is \$30. If a member purchases four bottles, the price is reduced to **\$19.95** per bottle. Contains milk.

To order New Zealand Whey Protein Concentrate, call 1-800-544-4440 or visit www.LifeExtension.com



Item # 01770



Item # 01771

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

Block Acid Reflux to *Prevent* Esophageal Problems!

Gastro esophageal reflux disease or **GERD** affects **60 million** Americans.

Most GERD sufferers seek ways to relieve **pain** and **burning**, such as taking proton-pump inhibiting drugs like Prilosec® or Prevacid®.¹

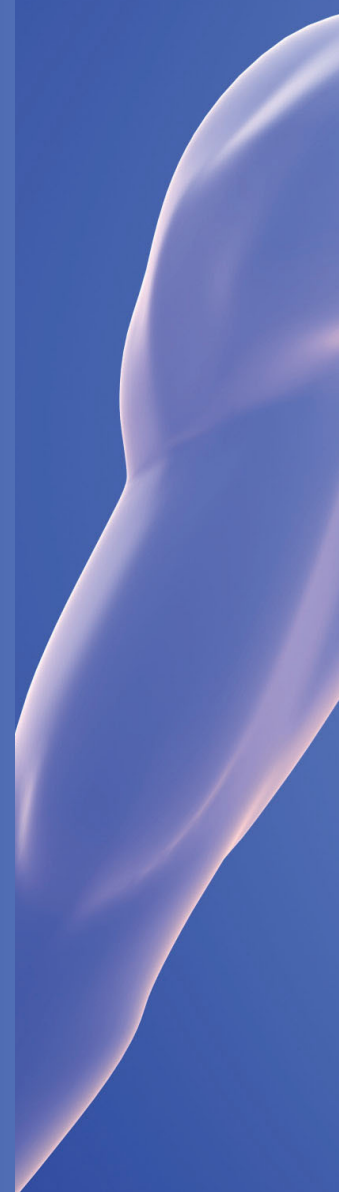
These drugs suppress stomach acid formation, but do not block the backwash of harsh stomach contents (such as digestive enzymes, bile, and acidic foods) into the delicate **esophageal** lining. A consequence of chronic esophageal exposure to stomach contents is deadly **esophageal cancer!**^{2,3}

The link between esophageal reflux and esophageal cancer is striking. People who have long-standing and severe GERD symptoms have **43 times** the risk of getting esophageal cancer, which is likely to kill **over 15,000** Americans this year.^{2,3}

Prevalence of **adenocarcinoma** of the esophagus has been skyrocketing in comparison with which used to be more common **squamous cell carcinoma**.^{4,5} Researchers speculate the **obesity epidemic** is causing more cases of adenocarcinoma of the esophagus, whereas squamous cell carcinoma is largely attributed to cigarette smoking and excess ethanol ingestion.⁵⁻⁷

A new approach has been discovered to impede backwash of all stomach contents (including acid) into the esophagus. By chewing on tablets composed of *marine alginate* and *bicarbonate*—known as a **raft-forming alginate**, one can physically block the backwash of burning acid and other stomach contents into the delicate tissue of the esophagus.⁸ This provides a relatively pH-neutral barrier to relieve painful heartburn—and potentially **reduce the risk of esophageal cancer!**⁸

In this article, you'll learn how this **unique mechanism** has been shown to work, often within a few seconds of dosing, to form a **barrier** that can be retained in the stomach for hours, providing **longer-lasting relief** than the mechanism of traditional antacids.⁸ >





Raft-Forming Alginate Physically Blocks Reflux!

Raft-forming alginates protect the delicate esophagus via a **unique** mechanism.⁸

They produce a temporary physical barrier that blocks stomach contents from backing up into the esophagus.⁸

As the alginate mixture *expands* in the stomach, it mops up excess acid and forms a pH-neutral barrier that reduces reflux episodes.

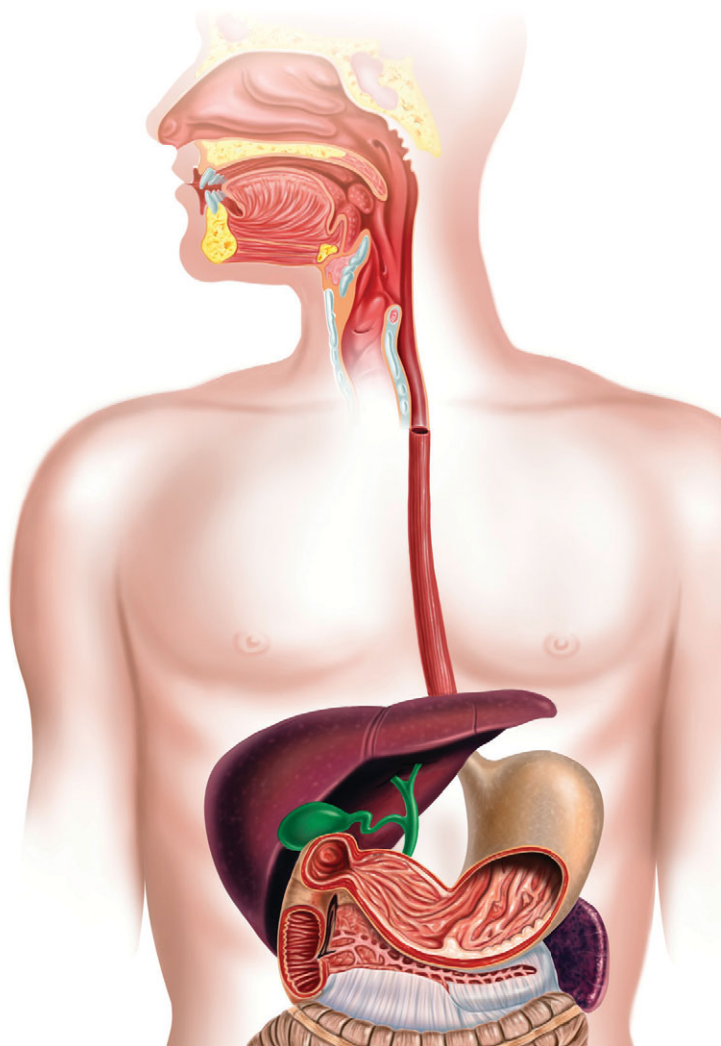
Here's how an alginate-based raft-forming formulation works...

One component of the mixture—**alginic acid**—is a dry powder containing natural long-chain carbohydrate molecules derived from brown seaweed. On contact with liquid and acid in the stomach, it forms a thick **gel**.⁸

When another component of the mixture—**potassium bicarbonate**—comes in contact with gastric acids, it produces carbon dioxide bubbles that get trapped in the gel.⁸ The expanding bubbles cause the thick gel to form a **floating foam** that literally sits atop the stomach contents like a raft.⁸

Two additional ingredients, calcium carbonate and magnesium carbonate, react with the soft foam, adding loft and tightening it up into a firmer (but temporary) “raft.”⁸

Raft-like floating foam creates a soothing barrier which prevents acid in the stomach from pushing up into the esophagus.



Studies show that in people with acid reflux *the raft slides up into the lower esophagus and creates a barrier*, which prevents acid in the stomach from pushing up into the esophagus.^{8,9}

Of course, carbonate and bicarbonate in the mixture react with stomach acid as they form carbon dioxide, helping to neutralize stomach acidity and providing a **second important mechanism** for relieving heartburn.⁸

The combined effect of all this action has been shown to reduce the severity of symptoms and the frequency of reflux episodes.⁸ Reflux sufferers will recognize that as a huge improvement over standard antacids.

The entire raft-forming process takes less than a minute, though the raft can survive in the stomach for as long as four hours until it is broken up and passed out of the body.⁸ This explains the remarkably rapid and long-duration relief you can get from using a raft-forming alginate immediately following a meal.⁸

Raft-Forming Alginates Reduce Both Acids—and Reflux!

For sufferers of reflux and heartburn, doctors are interested in strategies that both cut the acid content of the stomach and block acid and food reflux.¹⁰

Traditional antacids can only reduce acids—but raft-forming alginates can do both!

Compelling studies show that alginate preparations are highly effective at reducing both the intensity and the frequency of reflux attacks.^{8,11}

In one study, using sophisticated pressure and acid-monitoring equipment, **20 mL** of alginate kept the esophagus in the non-acidic range nearly **3 times longer** than placebo and cut the incidence of food reflux **by half**.¹⁰

Another study, of a single dose of a liquid form of an alginate-based formula showed a soothing effect in an average of just **65-66 seconds!** Over **82%** of subjects described the effects as “instant” relief.¹² In this study, a full **100%** of patients experienced heartburn relief within just **3.3 minutes** after the dose.

Unlike prescription *antacid* medications such as Prilosec® (omeprazole), alginate formulations can have beneficial impact on reflux damage to the larynx, or voice box. Significant differences in objective scores based on the appearance and condition of the larynx were seen between subjects taking **10 mL** of alginate suspension **four times daily** (after meals and at bedtime), compared to placebo subjects.¹³

Even more impressive than these placebo-controlled studies is research that compared alginates with other antacids.

One such study found significantly greater improvement in heartburn symptoms in patients treated four times daily with **200 mg** of cimetidine (Tagamet®) plus **500 mg** of alginate than in patients treated four times daily with **400 mg** of cimetidine alone, and the rates of healing and improved appearance of damaged esophagus were similar between the two groups.¹⁴

A related study found that a **single 20 mL** dose of an alginate formulation alone was better than an alginate-cimetidine combination at reducing both food and acid reflux.¹⁵

Other studies have shown marked reduction in symptom severity scores with alginates compared to Propulsid® (cisapride), a reflux medication,¹⁶ and with Prilosec® (omeprazole), a commonly used oral acid blocker.¹⁷

Propulsid® was shown to cause cardiac arrhythmias, with over **70** fatalities reported from 1993-1999, and has been removed from the US market.¹⁸

One 2012 study showed that alginate treatment was equivalent to Prilosec® (omeprazole). This is an encouraging finding, given the potential ill effects of

prolonged Prilosec (omeprazole) use.^{19,20} (See *Table of Side Effects of Common Classes of Acid-Blocking Drugs* for more details.)

Most impressively, studies regularly find that *alginate treatment provides relief significantly faster than drugs*.^{17,21}

Ellagic Acid Further Slashes Acid and Inflammation Levels

In addition to protecting the **esophagus** from the physical effects of *acid* and *food reflux*, it's important to protect the **stomach** itself from *excessive acid production* and the inflammation that produces ulcers and potentially increases cancer risk.

Ellagic acid is a polyphenol found in many types of plants, such as berries and pomegranates.^{22,23} It is a powerful antioxidant with additional and complex properties that make it ideal for protecting stomach and esophageal health.

Like antacid drugs, ellagic acid slows the secretion of hydrochloric acid into the stomach by interfering with the molecular pump that drives hydrogen atoms into the stomach.²⁴ Despite the name, ellagic acid is only a very mild, organic acid, with little in common with potent gastric hydrochloric acid. It directly *protects the stomach's mucous lining from damage* that can lead to **ulcers**.^{24,25}

Ellagic acid has been found to protect the stomach and promote ulcer healing through its favorable impact on *inflammatory cytokines*.²² One study clearly showed that ellagic acid shifted stomach biochemical parameters away from pro-inflammatory and towards healing profiles.²³

Intriguingly, ellagic acid's beneficial effects on the stomach lining vary depending upon the source of the inflammation. In alcohol-induced ulcers, the protective effect comes from an increase in endogenous nitric oxide, which acts as an anti-inflammatory agent.²² But in ulcers produced by the harsh arthritis drug *indomethacin*, ellagic acid reduces levels of the inflammatory *leukotriene B4*.²² And in ulcers produced by sour acetic acid (the acid in vinegar), ulcer healing was promoted by reductions in inflammatory cytokines *TNF-alpha* and related compounds.

Thus, in ulcer prevention, ellagic acid works both by reducing the offending factors and by strengthening the body's natural defensive factors.²²

Animal studies demonstrate that ellagic acid reduced the standard ulcer index by **59%**, while accelerating ulcer healing through induction of important growth factors.²³

In addition, ellagic acid appears to inhibit *Helicobacter pylori*, the bacterium that inevitably

Guard Against Esophageal Cancer

- The rate of gastroesophageal reflux disease (GERD), or heartburn, is rapidly rising.
- Reflux is painful and debilitating on its own—but it is a major cause of **esophageal cancer**.
- Traditional antacid treatments are used only to reduce stomach acid levels—and, in addition to having side effects, are powerless to stop the acid pocket that pushes into the esophagus.
- When it encounters gastric acid, **raft-forming alginate**, which includes natural algae, forms a light but strong foam barrier—a “raft” floating on top of stomach contents and preventing acid from entering the esophagus.
- The addition of the berry polyphenol **ellagic acid** further lowers acid levels in the stomach and reduces inflammation.
- This simple combination of raft-forming alginates, carbonates, and ellagic acid offers effective defense against acid reflux—and potent protection against the risk of reflux-caused esophageal cancer.

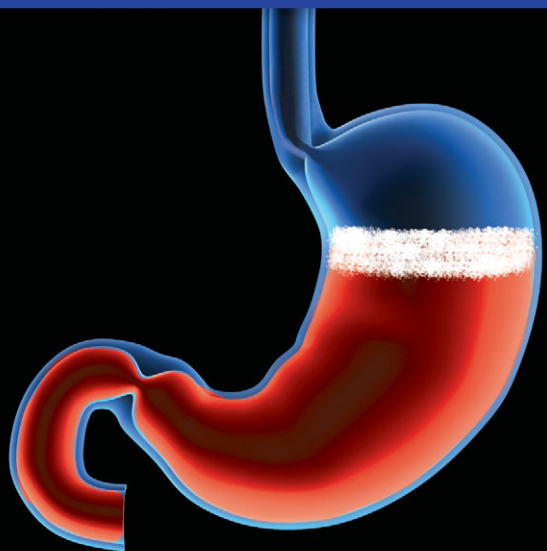
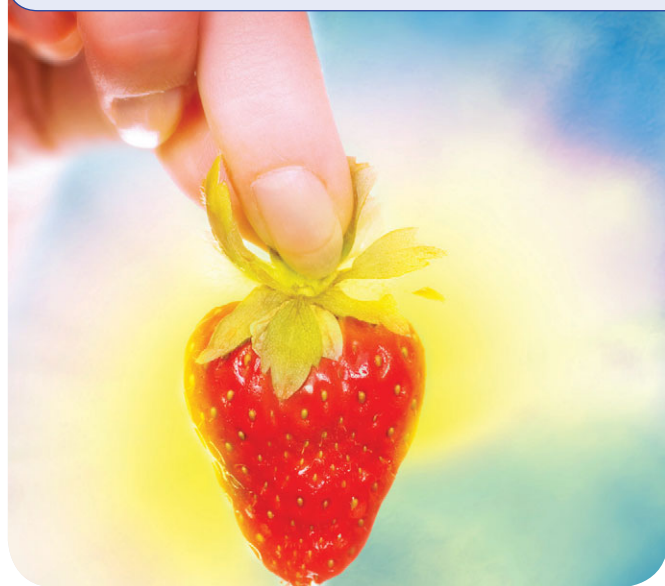


Table of Side Effects of Common Classes of Acid-Blocking Drugs

CLASS	COMMON NAMES	EFFECTS
Aluminum-containing Antacids	Maalox, Mylanta	<input type="checkbox"/> Bone-softening ^{33,34}
H2 Blockers	Cimetidine, Ranitidine, Famotidine	<input type="checkbox"/> Vitamin B12 deficiency ^{35,36}
Proton-pump Inhibitors	Omeprazole, Esomeprazole	<input type="checkbox"/> Vitamin B12 deficiency ^{36,37} <input type="checkbox"/> Reduced medication bioavailability ³⁸ <input type="checkbox"/> <i>Clostridium difficile</i> -associated diarrhea ^{38,39} <input type="checkbox"/> Pneumonia ^{37,38} <input type="checkbox"/> Osteoporosis as well as vertebral and hip fracture ³⁷⁻³⁹ <input type="checkbox"/> Rebound acid over-secretion ³⁹

Over-the-counter antacids can be very effective against acid damage, but they come with many potentially serious side effects, especially with prolonged use. Raft-forming alginate preparations, however, are associated with none of these.



Strawberries Lower Risk of Esophageal Cancer

Strawberries are loaded with powerful antioxidants, chiefly in the form of polyphenols, which block free radical formation.²⁹ Moreover, strawberry extracts promote increases in levels of natural antioxidant systems lying dormant in the cells, triggering potent self-protection in the vulnerable stomach lining.³⁰ Administration of strawberry extract in rats with alcohol-induced ulcers significantly reduced the animals' ulcer index, in large part by inhibiting peroxidation of cell membrane lipids.³⁰

Animals supplemented with strawberries show up to **56% fewer** cancers after exposure to known esophageal carcinogens.³¹ And in those that do develop cancers, the tumors are less frequent and smaller than in control animals.

A 2012 study in humans demonstrated remarkable protection from esophageal cancer in a high-risk population, following consumption of a high-dose freeze-dried strawberry powder. These patients had known esophageal dysplasia, a pre-cancerous state. After six months of supplementation, there was a reduction in severity of the dysplasia without side effects. This visible benefit was accompanied by reductions in markers of inflammation.³²

Strawberry polyphenols protect against stomach damage caused by alcohol and other damaging

causes gastritis—a main cause of gastric ulcers—and which has been associated with both **esophageal** and **stomach cancer**.^{26,27} And indeed, one study showed that ellagic acid reduced by **21 to 55%** the number of chemically-induced esophageal tumors in experimental animals.²⁸

While we're awaiting further proof that ellagic acid itself prevents cancer, there is strong evidence that **strawberries**—which are rich in ellagic acid—are powerful anti-cancer agents, as we'll see next.

agents.³⁰ Again, this effect is generally attributed to their content of antioxidants and free radical scavengers. (The strawberry intake of these human and animal subjects was vastly higher than an alginate combination could ever provide in a pill form; but including strawberry content in a formulation serves to enhance its protective activities.)

Summary

Gastrointestinal reflux is increasingly a major source of pain, suffering, and diminished quality of life—but it is also a key cause of **esophageal cancer**.

For years, traditional medicine operated on the simple notion that by using **antacids** and reducing acid levels alone, they could control the symptoms and potentially fatal consequences of acid reflux.

Raft-forming alginate creates a physical barrier “raft” to block reflux from occurring, protecting esophageal tissue from corrosive stomach contents. Alginate is clinically proven to reduce the frequency and intensity of reflux attacks, with effects equivalent to antacid medications that have substantial side effects.

The addition of *ellagic acid* to an alginate formulation can reduce stomach acidity and inflammation—which further protects the esophagus from the chronic inflammation that could one day trigger cancerous cells.

And strawberry extract contributes additional oxidant protection by upgrading the body’s own powerful antioxidant enzymes, with proven effects on reducing ulcer-related stomach cancer.

The simple combination of raft-forming alginates, carbonates, ellagic acid from pomegranates, and strawberry extract holds enormous potential to safely reduce painful acid reflux—and provide potential protection against cancer. ●

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 Facts About Esophageal Cancer

The National Cancer Institute estimates that 17,990 new cases of esophageal cancer will be diagnosed in 2013, during which time the disease is predicted to cause 15,210 deaths.²

Rates of esophageal cancer are rapidly increasing, and gastroesophageal reflux is a major contributor.^{3,40}

Esophageal cancers are most common in white men over 50, in smokers, in those who are obese, and especially in people with frequent symptoms of gastroesophageal reflux.^{41,42}

Studies show that people with recurrent symptoms of reflux have a **7.7-fold risk** of esophageal cancer, while those with long-standing, severe symptoms are at an incredible **43.5-fold** risk of the disease.³

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SUPPORT FOR THE IMMUNE SYSTEM

Reishi mushroom has been traditionally used to boost immune system vitality. Its broad-spectrum benefits have been demonstrated in thousands of studies.¹

An advanced extraction technology has resulted in a new **Reishi extract** that make its active compounds even more bio-available.

REISHI SUPPORTS A HEALTHY IMMUNE SYSTEM

An abundance of evidence demonstrates that **Reishi** constituents enhance the protective activity of the body's **hematopoietic stem cells**, **T-cells**, and other crucial immune factors.²⁻⁹

Reishi's immune-supporting compounds include an array of unique *polysaccharides*, *triterpenes*, and other constituents,^{10,11} many of which assist activation of the cell surface receptors that modulate normal immunity.¹²

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The suggested 2 capsules a day of
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Reishi mushroom (<i>Ganoderma lucidium</i>) extract (Fruit body)	980 mg
[standardized to 13.5% polysaccharides (132.3mg) and 6% triterpenes (58.8mg)]	
Shell-broken Reishi mushroom (<i>Ganoderma lucidium</i>) spore	150 mg

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

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PROTECT SKIN AGAINST DAMAGE FROM INSIDE OF YOUR BODY

Scientists have discovered that an extract of the fern *Polypodium leucotomos* helps inhibit cellular changes in the skin that can lead to premature aging due to sun exposure.¹

Taken orally, **Enhanced FernBlock® with Red Orange Complex** provides an **additional** layer of support for the body's ultraviolet-light defenses.

Best of all, *Polypodium leucotomos* offers this protection from the inside out. The result is an oral photoprotective agent that provides uniform, systemic, total-body surface protection (including the eyes, lips, and the scalp), without the problems associated with sunscreen.^{2,3}

Oral Sun Defense

FernBlock® has shown remarkable effectiveness in promoting skin defenses against harmful solar radiation.^{1,4-7}

FernBlock® in this **oral** formulation works by promoting the body's ability to inhibit absorption of ultraviolet rays and to quench the free radicals that this type of radiation can generate.^{4,5} In one clinical study, *Polypodium leucotomos* offered significant protection against the sun's rays, even for those taking medication that causes increased sun sensitivity.⁸ The study subjects experienced an almost **three-fold** increase in the amount of time they spent in the sun.

Enhanced FernBlock® Formula

This product has been upgraded to contain **Red Orange Complex**, a standardized extract that is obtained from three **red orange** varieties—*Citrus sinensis* var. Moro, Tarocco, and Sanguinello.

The main active **phenolic** compounds include **anthocyanins**, **flavanones**, and **hydroxycinnamic acids**. It also includes vitamin C,⁹ which works together to support the body's natural photoprotection against ultraviolet radiation,^{10,11} by helping to balance the body's normal inflammation response,¹² free-radical defense mechanism, and healthy apoptotic (cell death) activity.¹³

In a controlled human trial, 15 days of **oral** supplementation with **Red Orange Complex** was demonstrated to **measurably** support natural skin defenses against ultraviolet radiation.¹¹

FernBlock® is a registered trademark of Industrial Farmaceutica Cantabria, S.A.

Note: This product is not a sunscreen.

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More Comprehensive Sun Protection

Enhanced FernBlock® with Red Orange Complex is designed to complement topical sunscreens for sun exposure. Taken orally, **FernBlock®** supplements the effectiveness of topical sunscreens by protecting the **entire skin surface** and has an obvious advantage in that it **cannot be removed by perspiring or bathing**.

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Red Orange Complex (Sicilian red oranges – <i>Citrus sinensis</i> var. Moro, Sanguinello, and Tarocco) extract (fruit and peel)	100 mg
Vitamin C (as ascorbic acid from Red Orange Complex)	5.5 mg



Item #01728

A bottle of 30 vegetarian capsules of **Enhanced FernBlock® with Red Orange Complex** retails for \$42. If a member buys four bottles, the price is reduced to **\$28.50** per bottle.

To order Enhanced FernBlock® with Red Orange Complex, call 1-800-544-4440 or visit www.LifeExtension.com



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Novel, Long-Lasting GASTRO-ESOPHAGEAL SUPPORT

Many individuals have tried a host of remedies in an attempt to soothe their digestive tracts, but some *still* have an issue with gastric distress¹⁻⁴—with resulting discomfort along the delicate lining of the **esophagus**.

A novel solution is now available in the form of what scientists call **raft-forming alginate**.

This blend of ingredients in **Esophageal Guardian** provides a totally unique approach to protecting esophageal tissue against harsh stomach acids.

RAFT-FORMING ALGINATE

The mechanism behind **Esophageal Guardian** involves the formation of a temporary physical barrier—or **raft**—between the stomach and the esophagus.⁵

The secret to this technology is what happens when **alginic acid** and **potassium bicarbonate** come into contact with gastric acids. Alginic acid forms a gel and potassium bicarbonate produces bubbles that get trapped in that gel—producing a **floating foam** layer that sits above the contents of the stomach.⁵

Immediately, two other ingredients in this formulation—**calcium carbonate** and **magnesium carbonate**—react with the stomach acid to create lift in the foam and make it firmer.⁵

Clinical studies show that this temporary foam barrier provides maximum support for delicate **esophageal tissues**.^{5,6}

Also, the carbonate and bicarbonate in these ingredients help neutralize stomach acid.⁵

This protective foam barrier develops **less than a minute** after two **natural berry flavor** tablets of **Esophageal Guardian** are chewed and swallowed. Yet the relief it provides **lasts up to 4 hours!**⁵

Quite simply, **Esophageal Guardian Natural Berry Flavor** delivers the fastest-acting, longest-lasting, and advanced technology to support delicate esophageal and stomach tissues against gastric distress.

The suggested dosage of two (2) chewable tablets of **Life Extension® Esophageal Guardian Natural Berry Flavor** chewed after the heaviest meal of the day with 4 to 8 ounces of water, or as recommended by a healthcare practitioner, provides:

Alginic acid	1,000 mg
Calcium (as calcium carbonate)	80 mg
Magnesium (as magnesium carbonate)	40 mg
Potassium (as potassium bicarbonate)	40 mg
Strawberry extract (fruit)	416 mg
Ellagic acid [from pomegranate extract (hull) and strawberry extract (fruit)]	35 mg

A bottle of 60 chewable tablets of **Life Extension® Esophageal Guardian Natural Berry Flavor** retails for **\$36**. If a member buys four bottles, the price is reduced to **\$24** per bottle.



Item # 01737

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BY WILLIAM FALOON

ESTROGEN

Enjoy ESTROGEN'S MULTIPLE BENEFITS While Guarding *Against* Potential Risks

Women who properly replace their **estrogen** and **progesterone** usually feel better, sleep better, look better, think better, have stronger bones, firmer muscles, improved endothelial function, and longer life spans.^{1,2}

The downside to all these benefits is concern of increased **cancer** risk in certain women (**colon cancer** risk is an exception, which goes down).^{3,4}

Compelling evidence indicates that **natural progesterone** slashes estrogen-induced **cellular proliferation**, particularly in the breast and endometrium, without the adverse risks associated with **synthetic progestins**.^{5,6}

Consuming **cruciferous vegetables**, avoiding **well-done meat**, ensuring higher **vitamin D** blood levels, and following other healthy lifestyle choices also reduce **breast cancer** risk.⁷⁻¹⁰

Unlike biased propaganda based on economic motives, **Life Extension**® wants maturing women to understand the facts and decide for themselves if they want to consider using a **natural progesterone** cream along with a precise individualized dose of **natural estrogen** to restore their **sex hormones** to **youthful** ranges. >



ESTROGEN CRYSTALS

Concern about cancer is a reason why more aging women do not restore their hormones to youthful levels.³ Hormones like estrogen and testosterone affect cell growth and proliferation.^{5,11} Does that mean aging women should simply accept the sex hormone deficiencies they face as a part of “normal” aging?

Based on the data suggesting beneficial effects upon cell growth and maturation, as well as favorable ways to affect estrogen metabolism that point to cancer prevention, restoring hormones to more youthful levels appears to be an important strategy that should not be ignored.^{1,2,7,9}



As we describe in this article, large human population studies show major reductions in cancer risk and often specific protective mechanisms against hormone-responsive cancers like breast cancer when vitamin D,¹²⁻¹⁴ cruciferous vegetables^{7,15-17} (a source of indole-3-carbinol, or I3C), soy,¹⁸⁻²⁰ D-glucarate,^{21,22} and lignans^{23,24} are consumed. Dramatic cancer rate reductions also occur when meat, particularly red and processed meat, sweets, and other deleterious foods are reduced or eliminated from the diet.^{25,26}

Although prudence dictates caution in not assuming causation with correlation-based study data, misconceptions, misinterpretations, and associated media hype have created an environment in which aging people suffer the agonies caused by sex hormone imbalances, yet do nothing to correct this because of fear of cancer. When one looks at what the real cancer risk factors are, it would appear that altering one's lifestyle at any age—including properly restoring natural hormone balance to reflect a more youthful range—would result in significant reductions in malignant disease.

The Underlying Cause of Cancer

As females age, their *cell growth-regulatory genes* accumulate **mutations**.²⁷ Aging reduces the ability to rapidly repair this damage.²⁸ When genes that regulate cell division undergo mutation, the result can be

uncontrolled cell propagation that can result in tumor formation. Aging women experience a dramatic rise in cancer incidence, even as their *estrogen* levels plummet.²⁹

In the presence of **changes to genes** involved in the growth and proliferation of breast tissue cells, estrogen can promote cancer cell propagation.^{30,31} The good news is that the ingestion of vitamin D, cruciferous vegetables, and other compounds can *prevent* and *help repair* gene mutations and thus reduce cancer risk.^{27,32-35} All women (including those who maintain youthful estrogen levels) should make sure they are ingesting optimal amounts of vitamin D and other compounds that favorably alter gene expression.

Vitamin D confers significant protective effects against breast cancer. Laboratory studies have shown that vitamin D suppresses growth of breast cancer by:

- Blocking signals that stimulate cancer cell growth;
- Enhancing signals that inhibit cancer cell growth, and
- Favorably altering gene regulators of the cell cycle.³⁶⁻³⁹

Studies have found a strong correlation between blood levels of vitamin D and the risk of breast cancer. A case-control study comparing 1,394 postmenopausal breast cancer patients with 1,365 controls showed that low blood levels of vitamin D were significantly related to **breast cancer risk**. In fact, women with the *highest* levels of **vitamin D** had a nearly **70% reduction** in their risk of breast cancer, compared to women with the lowest vitamin D levels.⁹

Similar research examining the relationship between blood levels of vitamin D and breast cancer risk revealed that women with blood vitamin D levels of approximately **52 ng/mL** had a **50% lower** risk of breast cancer compared with women who had vitamin D levels below **13 ng/mL**.¹²

In one report, the effects of administering **1,100 IU** a day of vitamin D (with calcium) was evaluated in postmenopausal women.⁴⁰ After only four years, the risk of developing any cancer was **60% lower** in the vitamin D (and calcium) group, compared with those who received placebo. The scientists then performed a more detailed analysis of the data. When excluding cancers diagnosed in the first year of the study, which would have included pre-existing cancers present at the time participants began taking vitamin D (with calcium), they found an astounding **77% reduction** in cancer incidence in the group receiving vitamin D, compared with placebo.⁴⁰

Ensuring vitamin D blood levels over 50 ng/mL is a critical step in reducing cancer risk. *Life Extension* is finding that for many people, around **5,000 IU** a day of supplemental vitamin D3 can provide reasonable assurance that these optimal blood levels will be achieved. This dose has been shown to be both effective and safe in human trials.^{41,42} The heavier a person is, the more supplemental vitamin D they often require. (Note that vitamin D status in the body is measured as serum *25-hydroxyvitamin D*.)

Cruciferous Vegetables Protect Against Tumor-Proliferating Estrogen Metabolites

Scientists have identified compounds in **cruciferous vegetables** (broccoli, cauliflower, Brussels sprouts, cabbage, kale) that specifically inhibit the formation of dangerous breakdown products of estrogen that promote cancer growth.^{7,43,44} Cruciferous vegetable compounds also help activate vital enzyme pathways responsible for neutralizing the many carcinogens we are inevitably exposed to each day.^{7,45-47}

One of the best-studied cruciferous vegetable compounds is called **indole-3-carbinol (I3C)**. Women seeking to restore youthful hormone balance should make sure to obtain enough I3C from their diet or by taking standardized supplements. The reason for this is that I3C increases levels of a less potent estrogen metabolite (**2-hydroxyestrone**) with lower affinity for the estrogen receptor, while reducing levels of an estrogen metabolite that is more potent and binds with greater affinity to the estrogen receptor (**16-alpha-hydroxyestrone**).⁴³ Higher levels of **16-alpha-hydroxyestrone** and lower levels of **2-hydroxyestrone** are associated with greater risk of breast and other estrogen-responsive cancers.^{48,49}

To emphasize the critical importance of **indole-3-carbinol (I3C)**, please understand that aging women still produce estrogen. All the estrogen in women's bodies (both endogenously produced and supplemental) can follow one of two primary metabolic pathways in the body.⁴⁸ If estrogen is converted to **16-alpha-hydroxyestrone**, then the risk of breast and other cancers is increased. If, on the other hand, the estrogen is converted to **2-hydroxyestrone**, then the risk for cancer such as that of the breast and cervix is decreased.^{50,51}

I3C can readily be obtained by eating lots of cruciferous vegetables and/or taking I3C in dietary supplement form.

To confirm the theory that certain estrogen metabolites can contribute to cancer, researchers analyzed data gathered from over 10,000 Italian women over more than five years. The objective was to determine

Methods to Reduce Breast Cancer Risk

- An enlightened cancer-prevention strategy is to utilize nutritional strategies that have been shown to favorably affect gene expression. One of the simplest ways to protect against cancer is to optimize intake of vitamin D.
- Minimizing red meat, high-fat dairy, and sweets and consuming more vegetables, fish, and soy products can help reduce the risk of breast and other cancers.
- Cruciferous vegetable compounds such as indole-3-carbinol (I3C) can help prevent breast, prostate, and other cancers by favorably altering estrogen metabolism. A simple urine test can confirm that you are consuming the correct amount to ensure optimal cancer protection.
- Consuming soy isoflavones is associated with a decreased risk of breast cancer.
- A compound derived from fruits and vegetables called D-glucarate helps promote the healthy detoxification of estrogen and carcinogens, reducing cancer risk.
- Dietary lignans offer outstanding protection against breast, endometrial, and prostate malignancies.
- Consuming the right foods and supplements could reduce the risk of up to 90% of all cancers.
- Consumption of green tea is associated with a decreased risk of breast cancer.



how dietary and hormonal factors influence breast cancer risk. They found that among premenopausal women, a higher ratio of **2-hydroxyestrone** to **16-hydroxyestrone** was associated with protection against breast cancer.⁵⁰ This same finding has been shown in additional studies of different populations.^{52,53}

The potent estrogen metabolite **16-alpha-hydroxyestrone** acts as a breast tumor promoter.⁵⁴ By contrast, estrogen metabolized via the **2-hydroxyestrone** pathway is associated with reduced estrogenic activity in breast tissue.⁵⁴ Additionally, a conjugated form of this less active estrogen metabolite may help prevent the formation of blood vessels necessary to feed growing cancers, thus helping to arrest tumor growth.⁵⁵

Cruciferous vegetable compounds (such as I3C) are effective in shifting estrogen metabolism to the more beneficial pathway, thus reducing levels of **16-alpha-hydroxyestrone** and increasing levels of **2-hydroxyestrone**.^{43,54}

This beneficial modulation of estrogen is associated with reduced risk of breast and other cancers, including cervical and head and neck cancers.^{50,51,56} Cruciferous vegetable compounds thus play an



important role in fighting cancer. To illustrate, research conducted at the University of California at Berkeley documented that I3C in combination with the anti-estrogenic chemotherapeutic agent **tamoxifen** inhibited the growth of human breast cancer cells by an astounding **95%**.⁵⁶

Interestingly, an assay study performed at the *National Cancer Institute* determined that **I3C** was superior to over 80 other natural substances with regard to anti-cancer potential.⁵⁷

Soy May Reduce Breast Cancer Risk

The controversy over whether people can reduce their risk of cancer by increasing their consumption of soy foods or soy supplements has been hotly debated for many years. In response to the debate, a number of studies were initiated in the 1990s to ascertain soy's effects on human health.⁵⁸

The results of these studies have now been released and while ignored by the mainstream media, the startling findings indicate that breast cancer risk can be nearly cut in half if women consume more soy.^{26,59,60}

One recent study showed that postmenopausal women who ate a Western-style diet, high in meats and sweets, had nearly **twice the risk** of developing estrogen receptor-positive breast cancer, compared with women who ate a traditional Asian diet high in soy and vegetables.²⁶ This and other studies provide evidence that compounds found in soy have a breast cancer-preventive effect.

Isoflavones derived from soy have shown promise in providing natural protection against multiple types of cancer.⁶¹⁻⁶³ Two of the best known soy isoflavones are genistein and daidzein.

Isoflavones exert a number of positive biological effects on the human body, and many practitioners of integrative medicine (and even a small but growing number in mainstream medicine) now believe that consumption of soy and isoflavones can reduce the risk of many chronic diseases, including cancer, heart disease, and osteoporosis.⁵⁸⁻⁶⁵

Studies conducted in Asia found that breast cancer risk was significantly lower among Asian women who consumed large quantities of isoflavones and other soy products, compared with those who consumed less of these healthful nutrients.⁶⁶ Because animal studies have shown that a diet high in soy and genistein can protect against breast, colon, and skin cancers, it seemed reasonable to think that soy could also help prevent human cancers and, in particular, breast cancer.⁶⁷ Yet many mainstream medical practitioners remain skeptical that something as simple as soy could have such a profound effect on human health.

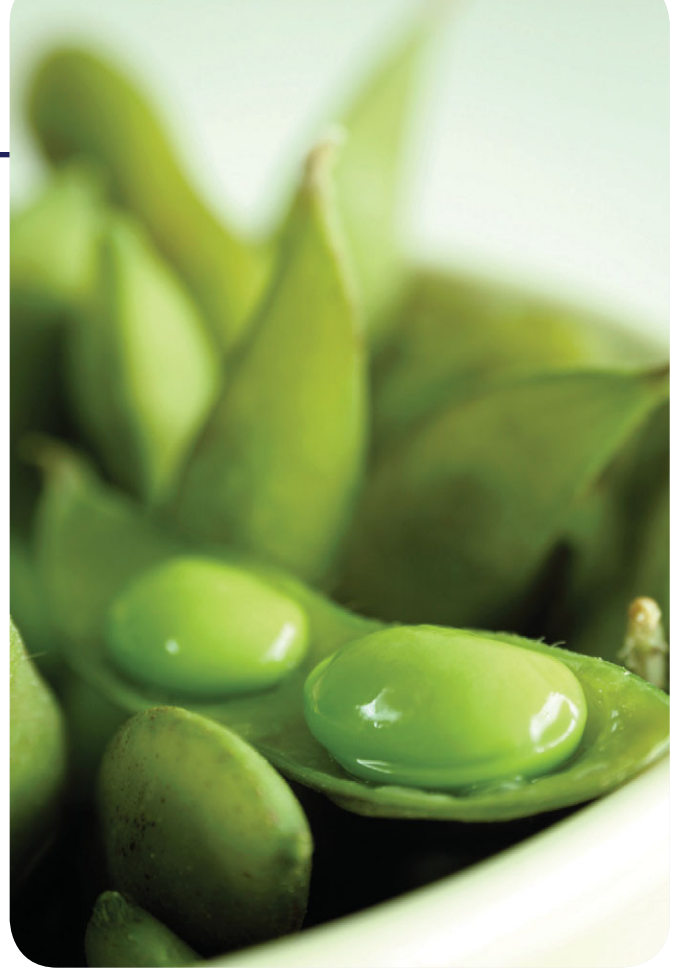
Soy isoflavones are correctly classified as *selective estrogen receptor modulators*.⁶⁸ Due to their unique molecular structure, soy isoflavones can act as both estrogen receptor agonists and receptor blockers. In fact, elegant biochemical studies have shown that some isoflavones bind to the cancer-protective **estrogen beta receptor** six-to eight-fold more readily than native estrogen.⁶⁸ With this ability, soy isoflavones are thought by many to confer the beneficial effects of estrogen without its potentially dangerous side effects, especially in hormonally sensitive tissues found in both the breast and endometrium.⁶⁸

Numerous studies show the potential benefits to women of incorporating soy in their diets to help prevent breast cancer. A landmark case control study of women in Singapore, involving 200 case subjects and 420 control subjects, found that younger women with the highest consumption of soy-based products had a markedly decreased risk of developing breast cancer.⁶⁹ Finally, a very large population-based, prospective study of 21,852 Japanese women aged 40-59 found that women with the highest intake of soy isoflavones reduced their risk of breast cancer by up to **54%**, compared with women with the lowest intake of soy isoflavones.⁶⁶

In addition to potentially preventing breast cancer, soy isoflavones are also thought to be effective in warding off other types of cancer that afflict women, including endometrial cancer. A recent case control study reported the effects of soy isoflavones and other phytoestrogens on the risk of developing endometrial cancer.⁷⁰ The study compared 500 women aged 35-79 who were diagnosed with endometrial cancer between 1996 and 1999 with 470 age- and ethnicity-matched controls. As in studies examining the effects of isoflavones on breast cancer, this study showed that women with a higher intake of soy isoflavones had a significantly lower risk of developing endometrial cancer. Even more interesting was that the levels of isoflavones needed to provide protection against endometrial cancer were found to be much lower than the amount believed necessary to protect against breast cancer (in fact, they were the amounts that could be obtained from a healthy American-style diet).⁷⁰

A recent 2012 analysis of about 46,000 non-hysterectomized postmenopausal women who were recruited into the Multiethnic Cohort (MEC) Study and provided detailed baseline information on diet and other endometrial cancer risk factors showed a significantly reduced risk of endometrial cancer associated with total isoflavone intake, daidzein intake, and genistein intake.⁷¹

As for long-term safety, a recent 2010 clinical study supports supplementation with soy isoflavones. This



international study involving postmenopausal women treated for 3 years with a standardized soy isoflavone extract, examined via endometrial biopsy, transvaginal ultrasonography, and mammography, showed an excellent safety profile, with no significant changes in endometrial thickness and no change in mammography. The global safety was rated as either 'excellent' or 'good' by **99.1%** of investigators and **99.0%** of patients after 3 years of treatment.⁷²

As another example of long-term safety, a 2011 multicenter 2-year trial involving over 400 postmenopausal women supplemented with soy isoflavones plus calcium and vitamin D showed no increase in endometrial thickness and a reduced rate of breast cancer and endometrial cancer compared with expected population rates for these cancers.⁷³

Meat Increases Breast Cancer Risk

Studies that look at human populations have consistently shown that what we eat affects our cancer risk.⁷⁴⁻⁷⁶ Women who eat more meat, especially red meat, suffer higher breast cancer rates.^{26,77} In one of the better documented studies, postmenopausal women in China who ate a Western-style diet (which included beef, pork, and desserts) were **30% more** likely to develop breast cancer than those eating a diet based on vegetables and soy. Even more startling was the finding that in postmenopausal women, a Western-

style diet was associated with a **90% increased** risk of *estrogen-receptor positive* breast tumors!²⁶

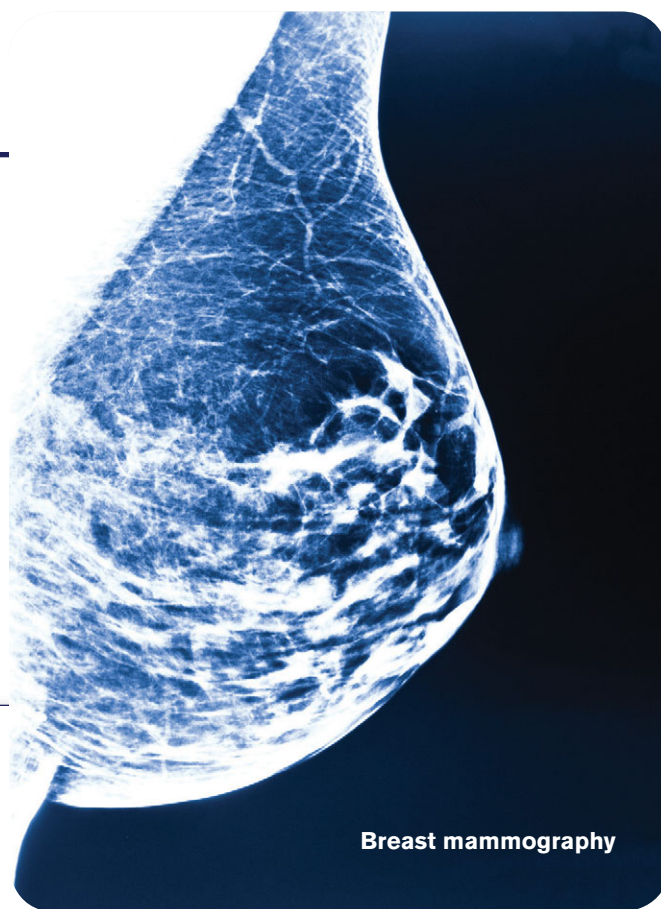
In stark contrast, a study demonstrated a **52% decreased** risk of breast cancer in women with the **highest** intake of **vegetables** and **fruits**, compared to the **lowest** intake.⁷⁸

However, it's not known whether meat from "free range" animals (beef, buffalo, wild game, chicken, pigs) also increases breast cancer risk. While even organically raised, grain-fed animals (like commercially raised grain-fed animals) have much more omega-6 (pro-inflammatory) fatty acids than omega-3 (anti-inflammatory) fatty acids, this ratio is reversed in meat from free-range animals, with significantly more omega-3 than omega-6 fatty acids.⁷⁹ Theoretically, this

The Real Cause of Breast Cancer

To fully understand the carcinogenic effects of aging, we have reprinted the chart below showing women's breast cancer risk by age.²⁹ A quick look at this chart clearly documents that aging is a primary cause of breast cancer, not hormones like estrogen. If estrogen caused breast cancer, then we would expect to see very high rates of breast cancer in young women of childbearing age, with a dramatic decrease in breast cancer after menopause. This is not observed. The good news is that many of the gene expression changes involved in the development of breast and other cancers can be favorably altered by taking low-cost nutrients like vitamin D^{40,105,106} in the dose of **1,000 to 10,000 IU/day**, based on individual response.

Risk of Developing Breast Cancer by Age ²⁹	
By age 25 :	1 in 19,608
By age 30 :	1 in 2,525
By age 40 :	1 in 217
By age 45 :	1 in 93
By age 50 :	1 in 50
By age 55 :	1 in 33
By age 60 :	1 in 24
By age 65 :	1 in 17
By age 70 :	1 in 14
By age 75 :	1 in 11
By age 80 :	1 in 10
By age 85 :	1 in 9



Breast mammography

Why Young Women with High Estrogen Seldom Develop Breast Cancer

During women's younger years, when breast cancer risk is relatively low compared with advancing age, they enjoy higher levels of sex hormones (estrogen, progesterone, DHEA).

As they age and hormone levels decline, breast cancer risk increases. The reason cancer risk increases with "aging" is that the genes in cells that help regulate healthy cell growth can mutate and directly cause cancer. In fact, mutations in cells' regulatory genes are an underlying cause of cancer.¹⁰⁷ It is encouraging to know that there are low-cost nutrients that favorably support healthy gene function and may reduce cancer risk in the process.

One study cites evidence that **vitamin D** can exert its cancer-preventing effect by counteracting the growth-promoting effect of estrogens.³⁷ Vitamin D also exerts its cancer-preventive influence by helping to control cell differentiation and inducing normal programmed cell disposal (apoptosis).³⁷

Strategies to protect against breast and other cancers can easily be incorporated into a woman's lifestyle. This article describes some of the steps all women (whether or not they choose to take estrogen) should do to reduce their risk of developing breast and other cancers as they age.

much more natural ratio should be associated with lower breast (and other) cancer risk, but research still needs to be done on this point.

Protective Effect of Fish Oil

In addition to fish oil's well-known cardiovascular benefits, research has revealed that omega-3 rich fish oil might offer protection against breast cancer as well.^{80,81} Eicosapentaenoic acid (**EPA**) and docosahexaenoic acid (**DHA**) are the two most important components of fish oil. One investigation documented a **49% decreased** risk of breast cancer in women with the highest dietary intake of omega-3 fatty acids, compared to those with the lowest intake.⁸¹ Furthermore, women with the highest red blood cell levels of EPA had a remarkable **73% decreased** risk of breast cancer, compared to those with the lowest levels.⁸¹

A group of researchers in France compared levels of DHA in breast tissue in 241 patients with breast cancer and 88 patients with non-cancerous benign breast disease. They reported that women with the highest levels of DHA in their breast tissue had a **69% decreased** risk of breast cancer, compared to women with the lowest levels of DHA in their breast tissue.^{82,83}

Why Plant Foods Are So Important

The body is bombarded with carcinogens on a daily basis.⁸⁴ These cancer-causing agents include pesticides, overcooked food, alcohol, food additives, tobacco, fungal mutagens, and industrial pollutants.⁸⁴ While avoiding carcinogens is difficult, it may be possible to mitigate their lethal effects by providing the body with a specific plant extract that facilitates the detoxification and removal of these dangerous substances from the body.²¹

A compound called **D-glucarate** is found in grapefruit, apples, oranges, broccoli, and Brussels sprouts.²¹ D-glucarate has been shown to protect against cancer-causing agents by supporting detoxification and removal of dangerous chemicals, and also by protecting against the mutating effects that these carcinogens induce on cellular DNA.²¹

There are several mechanisms by which the body detoxifies itself. One way of guarding against toxic overload involves a pathway of detoxification in the body whereby carcinogens are combined with water-soluble substances, thus making them more easily removed from the body. This process is called glucuronidation, and D-glucarate has been shown to support this important detoxification mechanism.²¹

D-glucarate functions by inhibiting the beta-glucuronidase enzyme, thus protecting the critical

"glucuronidation" detoxification mechanism.²¹ One example of the importance of glucuronidation can be seen in the risk factors for breast cancer. Excess levels of *16-alpha-hydroxyestrone* and beta-glucuronidase enzyme activity are associated with an increased incidence of breast cancer.^{21,54} D-glucarate is thought to decrease estrogen's effects by favorably affecting estrogen's metabolism and elimination.^{21,22}

Research studies have shown that D-glucarate inhibits breast tumor incidence.^{85,86} One study in rats that already had breast cancer showed that oral D-glucarate administration resulted in a **50%** inhibition of beta-glucuronidase, which led to a **30%** reduction in mammary tumor growth during the promotion stage and a four-fold reduction in the absolute number of tumors.⁸⁷ Another report showed a more than **70% decrease** in mammary tumor development in rats exposed to carcinogens that were also administered D-glucarate.⁸⁸ Still another study looked at the effects of D-glucarate on the initiation and promotional stages of mammary cancer. The results showed a reduction in incidence of **18%** during the initiation stage, while tumor multiplicity was reduced by **42%** during the promotion stage.⁸⁹ Inhibition at the initiation stage is a very important part of D-glucarate's actions, as it reduces the risk that cancer will even start.

Eating lots of the right fruits (grapefruit, apples, cherries) and vegetables (broccoli, Brussels sprouts) supplies the body with D-glucarate, though it is also available in dietary supplements designed to support breast health.²¹



How Lignans Protect the Breast

A number of published studies indicate that dietary lignans may protect against cancer by favorably altering estrogen metabolism, inhibiting angiogenesis, and inducing cancer cells to self-destruct.⁹⁰⁻⁹² The greatest support for a role of lignans in cancer prevention has been shown for premenopausal breast cancer.⁹⁰

Researchers in New York assessed breast cancer risk and dietary lignan intake in more than 3,000 women, including about 1,100 patients with confirmed breast cancer and approximately 2,000 women who served as controls. The scientists determined that premenopausal women with the highest lignan intake had a **34% reduced** risk of developing breast cancer.⁹⁰

Scientists in Italy suggest a mechanism for the protective effect. Their research indicates that higher blood levels of a phytoestrogen called enterolactone—the primary lignan derived by the body from flaxseed—are associated with a lower risk of breast cancer.^{93,94} Conversely, the researchers noted, *“Median values of serum enterolactone were significantly lower in women who subsequently developed breast cancer,”* leading them to conclude that the enterolactone “had a strong protective effect on breast cancer risk.”⁹⁴

Scientists at the University of Toronto reported that **flax lignans** can *slow down the growth of breast cancer* in women.⁹³ Thirty-two women awaiting surgery for breast cancer were randomized to receive a muffin containing **25 grams** of flaxseeds or a muffin that did not contain flaxseed (control group). Analysis of the cancerous tissue after surgery revealed that markers of tumor growth were reduced by **30-71%** in the flaxseed group, while the control group did not experience any reduction in markers of tumor growth. The scientists concluded that *“Dietary flaxseed has the potential to reduce tumor growth in patients with breast cancer.”*⁹³

Lignans may also protect against endometrial cancer, a condition largely associated with prolonged exposure to unopposed estrogens (this means estrogen administered without progesterone).^{70,95} Researchers in California assessed lignan intake and cancer status among nearly 1,000 women in the San Francisco area and determined that women with the highest dietary lignan intake experienced a promising trend toward a lower risk of developing this carcinoma of the uterine lining.⁷⁰ The relationship between lignans and endometrial cancer risk reduction was slightly stronger among postmenopausal women.⁷⁰

Based on a lot of favorable publicity, health-conscious people are increasingly adding flaxseed to their diet for the purpose of obtaining the beneficial lignans. Highly concentrated lignan extracts are also available in dietary supplements.

Green Tea's Anti-Cancer Effects

Green tea is rich in plant compounds known as polyphenols.⁹⁶ The predominate group of green tea polyphenols is the catechins, particularly *epigallocatechin gallate* (EGCG).⁹⁶ Copious evidence supports a role for these compounds in preventing breast cancer. In laboratory studies, green tea polyphenols and EGCG have been shown to suppress the growth and invasion of human breast cancer cells.^{97,98} Of even greater interest, these beneficial compounds in green tea delay the appearance of tumors in experimental models of breast cancer and cut down on the total tumor burden (amount of cancer in the body) when human breast cancer cells are injected into laboratory mice.^{98,99}

Other exciting benefits of green tea include inhibition of *vascular endothelial growth factor* (VEGF) production,^{99,100} which cuts off the blood supply needed for tumor growth; down-regulation of estrogen receptor-alpha function in breast cancer cells;¹⁰¹ reduction of tumor invasiveness;⁹⁹ and increased apoptosis, or programmed cell death, in cancer cells.¹⁰²

One experiment showed that EGCG, **50-100 mg/kg/day**, added to the drinking water of female mice inhibited growth of breast cancer. After five weeks of EGCG treatment, the weight of breast tumors was **reduced** by **68%** in mice consuming EGCG daily.¹⁰³

But green tea's benefits aren't restricted to animal or laboratory models. An investigation found a **47% decreased** risk of breast cancer in women who drank more than one-third cup (>85.7 mL) per day of green tea, compared to those who did not consume any green tea.¹⁰⁴



The medical establishment questions the use of *bioidentical hormones* out of concern about cancer risks. Earlier in this article, we outlined persuasive data showing the anti-cancer properties of many specific nutrients.

When factoring in the potent anti-cancer effects that occur in response to consuming healthy foods (such as broccoli and Brussels sprouts) and supplements (such as vitamin D and fish oil), while avoiding carcinogenic foods (such as sugar and well-done meat), the argument that maturing women should forever be denied their full complement of *natural* sex hormones does not stand up to scientific scrutiny.

Summary

Estrogen does far more than ease menopausal symptoms. It protects a woman's brain, bones, arteries, muscles, eyes, skin, and overall sense happiness and well-being.^{1,2}

A number of studies show higher mortality rates in **estrogen-deficient** women under age 60.^{108,109}

Recognizing that even **natural estrogen** drugs stimulate breast cell proliferation, proponents of natural estrogen replacement advocate consumption of fruits and vegetables, along with supplements such as indole-3-carbinol (I3C),^{43,56,57} resveratrol,^{110,111} gamma tocopherol,¹¹²⁻¹¹⁴ melatonin,¹¹⁵⁻¹¹⁷ genistein,^{118,119} and green tea.⁹⁷⁻¹⁰³ The potential cancer-preventive effects of these dietary modifications and supplements are well substantiated in the scientific literature.

Most important, postmenopausal women with an intact uterus taking even natural estrogen drugs should use **natural progesterone** cream to protect their cells against the excess stimulation that estrogen can sometimes cause.⁵ An analysis of the scientific literature links lack of progesterone to the health problems doctors have related to estrogen.

When taking the right dose of topical natural estrogen (with progesterone), the many youth-restoring effects quickly become apparent. When estrogen is deficient, aging is accelerated. ●

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

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

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

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

TAKE BACK CONTROL OF YOUR SLEEP!

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

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

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

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

NEW MELATONIN LIQUID DROPS!

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

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

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

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



ITEM# 01734

WHY WE NEED SLEEP

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

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

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

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

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

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

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

The daily dose of two capsules supplies:

Cruciferous Vegetable Proprietary Blend	550 mg
Broccoli (<i>Brassica oleracea</i> L.) GMO-free Extract [standardized to 4% glucosinolates]	
Watercress (<i>Nasturtium officinale</i>) 4:1 extract (leaf)	
Sawasabi™ Wasabi (<i>Wasabia japonica</i>) powder (rhizome) [standardized to 12,000 ppm Total Isothiocyanate]	
Indole-3-Carbinol (I3C)	100 mg
Isoflavones (from Novasoy® soy isoflavone concentrate)	35 mg
DIM (3,3'-Diindolylmethane)	14 mg
D-Glucarate	137.5 mg
Vitamin D3 (as cholecalciferol)	1000 IU
Enterolactone Precursors Proprietary Blend	25 mg
HMRlignan™ Norway spruce (<i>Picea abies</i>) standardized lignan extract (knot wood) and Secoisolariciresinol diglucoside from ActiFlax™ flax (<i>Linum usitatissimum</i> L.) lignan extract (seed)	
Iodine (as potassium iodide)	2 mg

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

ActiFlax™ is a trademark of Pharma Science Nutrients, Inc., all rights reserved; SoySelect® is a registered trademark of Indena S.p.A.; HMRlignan™ trademark is used under license from Linnea SA™; Sawasabi™ is a trademark of B&D Nutritional Ingredients, Inc. Novasoy® is a registered trademark of Archer Daniels Midland company.

To order, call toll-free
1-800-544-4440 or visit
www.LifeExtension.com/breasthealth

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

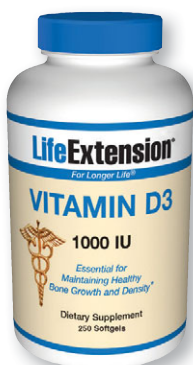
D₃

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**.

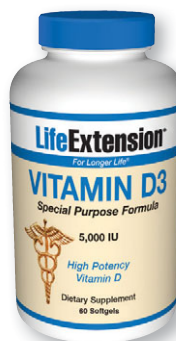


VITAMIN D₃ 1,000 IU 250 softgels

Retail: \$12.50

Four-bottle Member Price: **\$8.44 ea.**

Commercial companies offered only **400 IU** vitamin D products when Life Extension long ago introduced a **1,000 IU** version. For most people, 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**

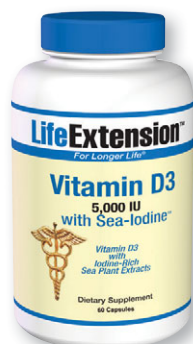


VITAMIN D₃ 5,000 IU 60 softgels

Retail: \$11

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

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



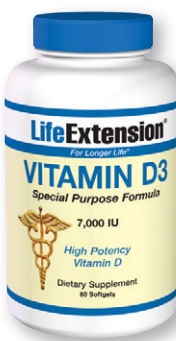
VITAMIN D₃ 5,000 IU WITH SEA-IODINE™* 60 capsules (non-softgel)

Retail: \$14

Four-bottle Member Price: **\$9.38 ea.**

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

Item # 01573



VITAMIN D₃ 7,000 IU 60 softgels

Retail: \$14

Four-bottle Member Price: **\$9.45 ea.**

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

Item # 01718



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

Retail: \$28

Four-bottle Member Price: **\$18.75 ea.**

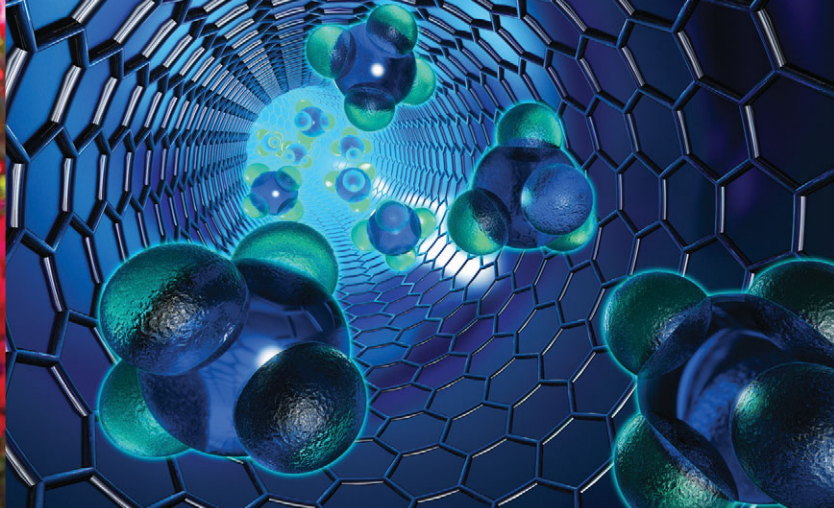
For those rare individuals who have difficulty absorbing enough vitamin D₃ from softgels, this liquid of vitamin D can be used.

Item # 01732

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.



AUTHOR INTERVIEW

I'm Too Young For This!

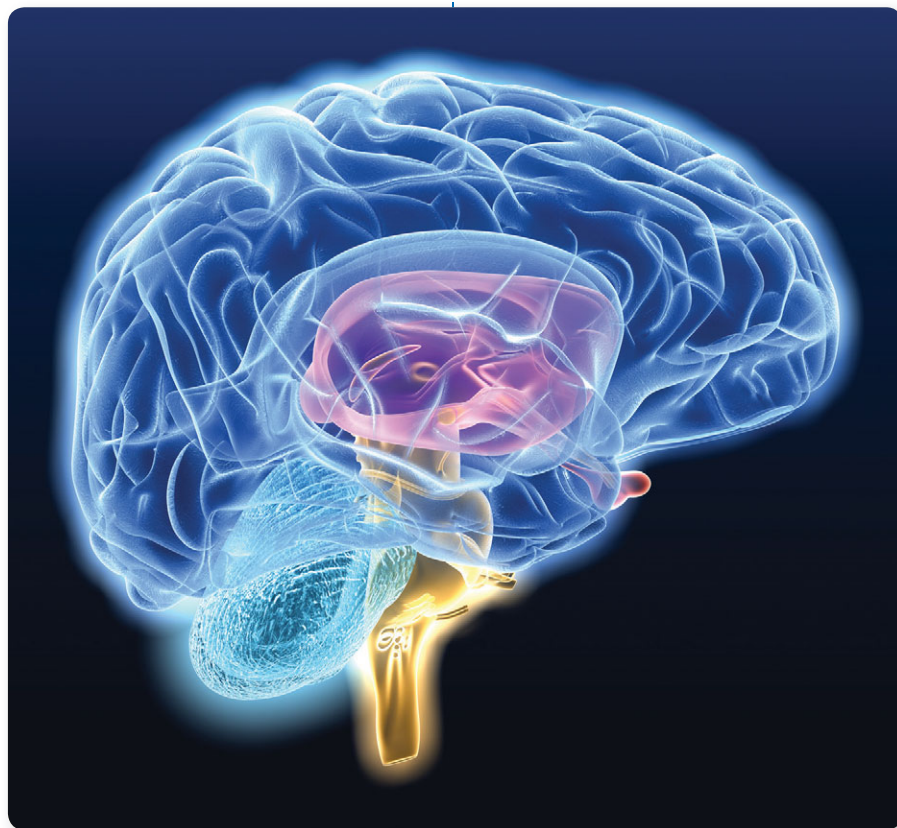
The Natural Hormone Solution to Enjoy Perimenopause

Suzanne Somers has been dubbed a health “pioneer” by Oprah Winfrey and been told by Dr. Mehmet Oz that she is “crazy smart.” She is the author of twenty-four books and has appeared on hundreds of national broadcasts to discuss her cutting-edge views on how medicine should be practiced. The *Wall Street Journal* says she writes with “the passion of a prophet.”

In this interview, Somers sits down with **Life Extension®** to discuss some of the highlights of her latest book, ***I'm Too Young For This! The Natural Hormone Solution to Enjoy Perimenopause***.

LE: In your book you talk a lot about understanding how hormone loss can affect women as they age. You talk specifically about a period known as *perimenopause* that may make women feel very unlike themselves. What happens during this phase?

SS: Hormonal loss can make you feel like you are going crazy. You don't know who you are anymore, and you can't rely on feeling good each day. Perimenopause is the transitional stage from normal menstrual periods to no periods at all. It may start in your thirties or forties and it will continue until you reach the final stage, menopause, probably sometime in your fifties. You are transitioning. This process and the cluster of symptoms that often come with it can start ten years before full-blown menopause. Perimenopause is a natural phase of life, and in many cases it is a difficult transition. When you don't understand what's happening and don't know how to manage it, then your health and your sanity can be challenged.



LE: How does having low thyroid levels affect weight gain during perimenopause?

SS: One of the most common complaints of perimenopause is unexplained weight gain. You start getting “thick,” especially around the middle. Your belly bloats and you retain water, even when you never did before. You may eat less and exercise more yet you still can’t lose the weight; instead, often you gain weight. Low thyroid, a major metabolic hormone, is usually the culprit. When it’s too low, you don’t metabolize food effectively and the calories you consume turn into fat instead of being used for energy; this is why exercising and dieting helps a little, but you just can’t achieve the weight loss you desire. Low thyroid weight tends to be distributed evenly on your

body. When low pituitary function is at the root of your low thyroid function it’s generally confined to the area from your abdomen to just above your knees.

LE: Other problems many women face include foggy thinking and forgetfulness. Why are these such common symptoms?

SS: Brain fog is a result of a complex series of events that happens to women. First, it’s about estrogen depletion. The brain needs estrogen to function properly. When a woman is deficient in estrogen, she develops senior moments—whatever description you can handle to take the edge off your embarrassment with your friends and make for a big laugh. You may be laughing off your embarrassment on the outside, but on the inside there is nothing funny about it.

When it happened to me, I secretly harbored a fear that that this was the first stage of Alzheimer’s, the most frightening of all diseases to me. Estrogen depletion also causes headaches and migraines.

LE: You talk about depression relief in your book. What are maturing women missing other than their hormones?

SS: Serotonin profoundly affects the brain, where it impacts brain cells by various mechanisms. Serotonin activity is essential for enjoying a relaxed and happy brain. This is the feel-good neurotransmitter that many women lack.

LE: Many women may not understand the essential role that neurotransmitters play in vital brain function. Specifically, what are we talking about here?

SS: Neurotransmitters that become depleted as we women age include dopamine, serotonin, and GABA. PMS symptoms are really an indicator of serotonin deficiency, and because a woman’s levels are deficient or low, she will experience depression, anxiety, insomnia, and often brain fog. Most women at this point need something to take the “pain” of anxiety, worry, and bodily aches away. So they go to alcohol or over-the-counter or prescription drugs like Prozac®, Oxycontin®, or Xanax®.

LE: It’s no wonder then that even something as simple as headaches can be a result of a hormonal imbalance.

SS: Headaches, sadly, are part of the perimenopausal and menopausal experience for so many women. Women suffer migraines,

a particularly debilitating type of headache, about three times more frequently than men, affecting up to **60%** of all women at some point in their lives. They occur before, during, or immediately after a period, or during ovulation. They range from mild to “migraine fierce.” Why do these debilitating headaches occur more frequently during perimenopause? The brain requires estrogen to operate optimally. Low, imbalanced, or fluctuating estrogen levels can trigger migraines; menstrual migraines are primarily caused by estrogen, and when the levels of estrogen and progesterone change, women are more vulnerable to migraine headaches. Too much or too little estrogen causes blood vessels to dilate. If your progesterone is too low to balance your estrogen, leaving you estrogen dominant, the swelling blood vessel dilation caused by unchallenged estrogen can be a catalyst.

LE: You also write that magnesium intake may be related to headaches as well. How so?

SS: Insufficient magnesium levels make arteries more susceptible to spasm and are another common cause of other types of headaches. One possible reason for this deficiency in magnesium is a chronic imbalance of estrogen to progesterone. This imbalance is not only uncomfortable, but a dangerous setup for cancer.

LE: You recommend to your readers that getting blood tests is of the utmost importance. Why do you feel this way?

SS: It's crucial to test your blood hormone levels so your doctor can initiate a customized bioidentical hormone program that's just right

for you. After you are placed on bioidentical hormones, some doctors will suggest a urine test that monitors the amount of estrogen and other hormones you are making over a twenty-four-hour period to get a more accurate picture of where you are hormonally. The first step is to identify your baseline hormone status. This is to know the ranges of all your hormones and gives you and your doctor the best picture for your symptoms. If you suspect you are entering perimenopause, it is extremely important to test your hormone levels.

LE: You spoke to Life Extension's own Bill Faloon on this very topic, correct?

SS: Yes. My question to him was: If a woman concludes that she is symptomatic and her decline has begun, should she get hormones replaced without testing her hormone levels? He replied: “Think about this. . . . Would you drive your car without being able to see outside the windshield? That, regrettably, is how most conventional doctors treat their patients' problems. When a woman complains of symptoms related to sex hormone deficiency, if she's not with a qualified doctor, he may prescribe the same dose of estrogen, and possibly a synthetic progestin drug. The doctor hopes this blindly prescribed dose will alleviate perimenopausal symptoms. In other cases, the physician may not recognize the symptoms as being a hormone deficit and instead prescribes side-effect-laden antidepressant drugs, addictive antianxiety drugs, and/or sleeping pills. But with blood test results in hand, a qualified physician can determine the best individualized dose

of natural estrogen, natural progesterone, DHEA, and other hormones required for preservation of healthy vitality.”

LE: Your book, *I'm Too Young for This*, offers incredible information, however, one of the takeaways seems to be that mainstream medicine is falling woefully short in terms of helping out aging women. How has this happened and what does it mean moving forward?

SS: At present, our medical schools are teaching fifty-year-old medicine. Every answer to every disease and condition has a pill attached to it. If you look around at our senior generation, you see for yourselves that they are not doing very well on all the pills they have been given over the years. It's a cruel hoax; they trusted and they believed that medicine knew best. We get confused because we have been raised to believe doctors are supposed to know everything. That's a lot of pressure for your doctor. Stay with your doctor for the things he or she knows, but go to the right doctor if you are looking for hormone balance (someone who specializes in BHRT). Doctors are good people we hire to take care of our bodies. But they are not *in charge* of our bodies . . . that is our responsibility.

LE: Is personal responsibility the main message you want women to take away from your new book?

SS: The message in this book is not to go to the doctor as a child anymore. Empower yourself with information about how your body works; it will allow you to discuss your health intelligently with your doctor. Together you can decide a personalized plan for your

ongoing health. It's up to you to choose optimal health. Remember, you hire your doctor! *You* are the contractor. As you continue to age, you will hire other doctors specializing in new medicine to manage and maintain all your other parts. Perimenopause is a passage . . . a passage into the next phase of your life called menopause.

LE: What has been your greatest frustration in recommending maturing women replace their sex hormones?

SS: I never worried about the criticism. I always knew they just didn't understand that I was advocating a natural individualized approach to hormone replacement, whereas conventional doctors were prescribing synthetic drugs on a one-size-fits-all basis. The problem was women were reading my books and asking their doctor for natural hormones, but

most doctors didn't know the difference and either refused to prescribe sex hormones or put women on drugs like Premarin®, Provera® or Prempro®, which are unnatural to the human body and dangerous as far as I was concerned.

LE: So after ten years of being on the right side of the science, what is your solution to the problem of widespread physician apathy and ignorance?

SS: For the first time, I believe the problem in finding knowledgeable physicians has been solved. A network of anti-aging doctors has been established so that women can log onto a website (ForeverHealth.com) and find a doctor in their area who will interpret their blood test results and prescribe the precise amount of natural estrogen and progesterone to meet each woman's individual requirements.

LE: This would be unprecedented. For the past 33 years we at Life Extension have been challenged in identifying knowledgeable physicians to refer our members to. If women can take their blood test results to a physician who can individually restore youthful hormone balance, the age-reversal impact on a societal scale would be monumental.

SS: That's my dream. There are now ForeverHealth.com doctors in most major cities with more coming on board. These anti-aging physicians are dedicated to addressing the hormonal replacement needs of maturing women on an individualized basis. The quality-of-life enhancements I and other women I've helped have experienced are profound. Most say they have never felt better. All women have to do to see if a doctor is in their area is log on to ForeverHealth.com

LE: That's tremendous, Suzanne. With your new book (*I'm Too Young For This!*), the incredible amount of media attention you're now receiving, and the availability of knowledgeable physicians, the average female now has an opportunity to enjoy the multiple anti-aging effects of natural hormone replacement.

If you have any questions on the scientific content of this article, or you'd like to order a copy of *I'm Too Young For This!*, please call a Life Extension® Health Advisor at 1-866-864-3027 or visit www.LifeExtension.com.

Suzanne Somers is the author of twenty-four books including numerous *New York Times* best sellers.



I'M TOO YOUNG FOR THIS!

The Natural
Hormone Solution
to Enjoy
Perimenopause

By Suzanne Somers

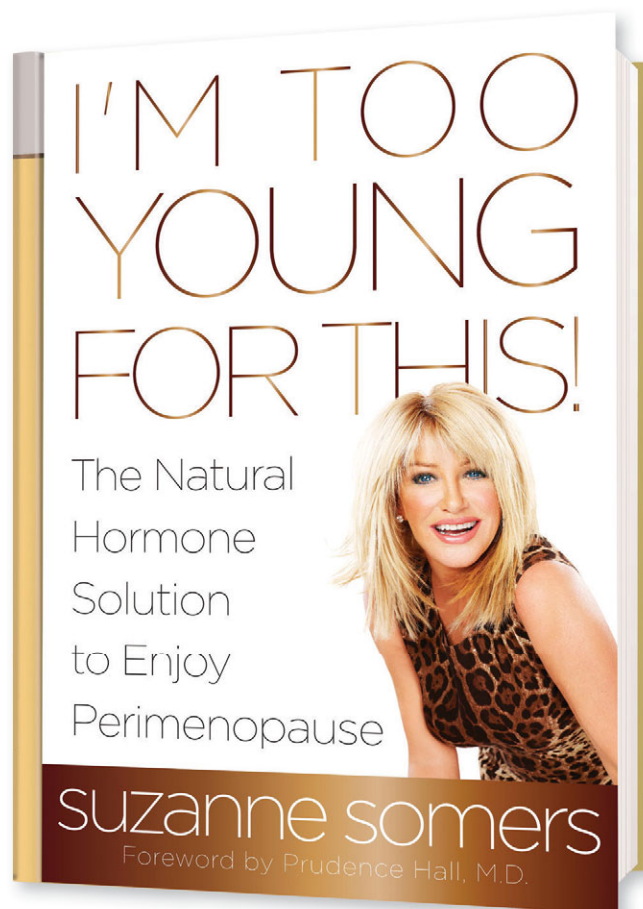
Are you tired of being at the mercy of your hormones?
Do you refuse to accept the grim side effects of menopause?

THEN WHY WAIT TO FEEL GOOD AGAIN?

Suzanne Somers' groundbreaking book *I'm Too Young For This!* reveals how maturing women can utilize natural **hormones** to reverse the premature aging process throughout their bodies. Suzanne's latest book describes:

- How women's hormones transition from puberty through perimenopause.
- The common complaints of perimenopause and hidden factors that may keep you symptomatic.
- The minor and major hormones, and the important role they play in feeling good and staying healthy.
- What to eat—including Perimenopausal Power Foods—and other lifestyle shifts that are critical to your successful transition.
- Cutting-edge research that proves the safety and efficacy of bioidentical hormone replacement.
- The Symptom Solver: a guide to relieve your hormonal complaints; plus, how to find the right doctor.
- Answers by expert hormone specialists to your most frequently asked questions.

Your life is about to change for the better. You *can* feel **great** and be **vibrant, healthy, thin, and sexy!**



Item# 33862 • Retail price \$26 • Member price \$18.20

To order your copy of *I'm Too Young For This!*,
call 1-800-544-4440 or visit www.LifeExtension.com

GREEN TEA EXTRACT

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

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

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

These highly concentrated **Mega Green Tea Extract Caps** contain **725 mg** of either **lightly caffeinated** or **decaffeinated 98% standardized** green tea extracts. The retail price for **100 vegetarian capsules** of **Mega Green Tea Extract** is **\$30**.

If a member buys four bottles of **725 mg Mega Green Tea Extract** capsules, the price is reduced to **\$21 per bottle**. Most people take just one capsule daily.



To order Mega Green Tea Extract,
call 1-800-544-4440 or
visit www.LifeExtension.com

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
Vitamin K2 (as menaquinone-4)	1000 mcg
Vitamin K1 (as phytonadione)	1000 mcg
Ginkgo extract	120 mg
Sesame lignans	20 mg
Chlorophyllin	100 mg

Gamma Tocopherol	197.45-296.25 mg
Lycopene	10 mg
Lutein	2 mg
Vitamin B12	300 mcg
Vitamin C	95 mg

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

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

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

Contains soybeans.

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

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

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

BY WILLIAM LANCASTER

LACTOSE INTOLERANCE

Novel Method to *Mitigate* LACTOSE INTOLERANCE

The **majority** of the world's population—*often starting before age five*—experiences a decrease in the intestinal enzyme ***lactase***, which creates **digestive problems**.

Left untreated, **lactose intolerance**—the inability to digest lactose—can lead to **nutritional deficiencies**.^{1,2}

Milk products are found in a wide range of foods. People with **lactose intolerance** have to carefully avoid milk products to prevent **diarrhea, gas, nausea, abdominal bloating, and cramps**.

To mitigate this problem, researchers in Europe have developed an advanced lactase enzyme formulation that targets the underlying *cause* of the problem—and **helps restore the ability to digest lactose!**^{3,4}

This novel enzyme, called **neutral lactase**, acts in the small intestine, instead of the stomach.⁵ This gives the digestive system much longer exposure to lactose-degrading molecules than conventional products!³

In this article, you'll learn how **neutral lactase** *breaks down more lactose*, helping to prevent the painful and embarrassing **digestive** symptoms of **lactose intolerance**.⁴ >





Lactose Intolerance and Nutritional Deficiencies

All humans are born with the ability to drink and digest milk, which makes the abundant nutrition in milk readily available to newborns and young children.

But as we grow older, our levels of the digestive enzyme lactase decline. The result is that some of us **lose our ability to break down lactose**, the major sugar in milk.⁶ That makes sense, since in nature, milk consumption ends at weaning.

The only human populations that continue to consume liquid, unfermented milk in sizable quantities are those from Northern Europe and the northwestern territories of the Indian subcontinent.⁷ But even

in those groups, and people descended from them, the prevalence of lactose intolerance hovers around **25%**—and in other ethnic groups, can affect up to **90%** of the adult population!^{6,7} ***That's a huge number of people who suffer significant gastrointestinal upset from milk products!***

In fact, lactose intolerance and the resulting avoidance of milk products is a known risk factor for osteopenia, the steady loss of bone mineral content that leads ultimately to osteoporosis.^{8,9} It is regrettable that doctors don't better advise patients with lactose intolerance to supplement with bone-protecting nutrients such as vitamin D, calcium, magnesium, and vitamin K2.

How Lactose Intolerance Develops

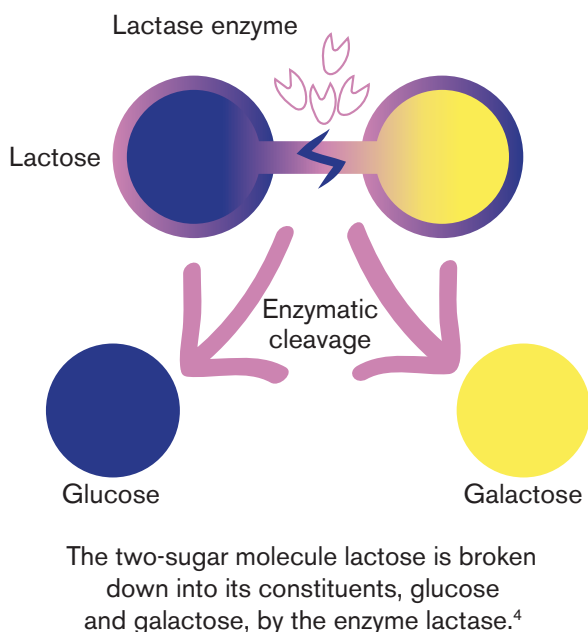
The biology of lactose intolerance is simple. But it is devastating in its consequences.

Milk always contains a sugar called lactose.¹⁰ In fact, a liter of milk contains about **50 grams** of lactose—that's about **12 grams** per cup.¹¹ Lactose is composed of two simple sugars: *glucose*, the most common sugar in the world, and *galactose*, a sugar found primarily in milk products.¹² Each lactose molecule consists of one molecule of glucose and one of galactose, **bonded together**.

Lactose by itself can't be absorbed in the human small intestine. The two component molecules, glucose and galactose, must first be split by a special enzyme—lactase.^{6,10}

Lactase is found in the tips of the cells lining the small intestine, which are directly in contact with intestinal contents.¹³ As lactase goes to work, glucose and galactose are separated from one another—and then each is **separately absorbed** (Figure 1).^{6,13}

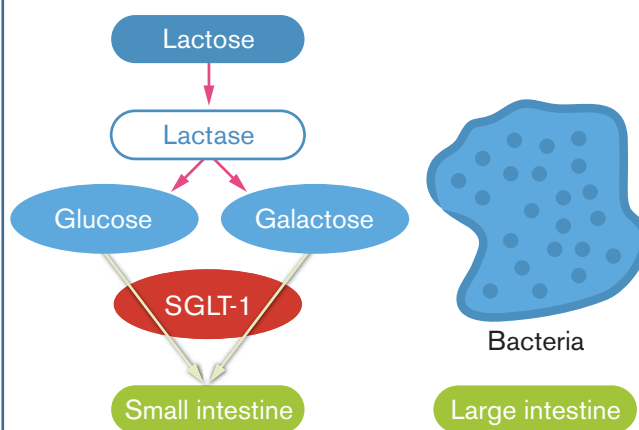
FIGURE 1: Breakdown of Lactose by Lactase Enzyme



So the material that finally reaches the *large* intestine, or colon, is normally free of lactose, allowing colonic bacteria to live normally (Figure 2).

Newborns and toddlers have ample supplies of lactase in their intestines. That means they can readily digest lactose—**along with the various other important nutrients contained in milk**.⁶

FIGURE 2: Normal Absorption of Glucose and Galactose



With normal levels of the lactase enzyme in the small intestine, lactose is rapidly broken down into glucose and galactose, which are immediately absorbed into the body. Bacteria in the large intestine never come into contact with intact lactose.⁴

But as they age, most children—and virtually all of those not from Northern European ancestry—lose much of their original lactase enzymes. By the time most of these children reach adulthood, lactase levels are very low.⁶

When a lactase-deficient person ingests lactose-containing milk products in quantities of more than about two cups per day, the small amount of lactase enzyme simply can't deal with all of the lactose.¹⁴

And what happens next can be extremely distressing.

First, the undigested lactose in the *small intestine* draws water and electrolytes out of the bloodstream by osmosis. All that water dilates the small intestine, causing bloating.⁶

The dilated small intestine speeds up the rate of peristalsis—or wavelike contractions—of the small intestines, producing cramping. This faster rate of peristalsis means that undigested food moves more rapidly through the small intestine, **further impeding normal nutrient absorption**. This triggers still more fluid loss as well as bloating and cramping.⁶

Once this mass of undigested material reaches the *large intestine*, colonic bacteria attack the intact lactose and digest it themselves. That process generates odorous hydrogen, methane, and carbon dioxide, along with short-chain fatty acids (Figure 3).^{6,13} This causes more bloating and discomfort, accompanied by the release of these gases in the form of flatulence.¹⁵

Finally, all that excess water, gas, and undigested food produces the signature symptom of lactose intolerance: watery, often “explosive” diarrhea.¹⁶

Diagnosing Lactose Intolerance

The majority of people with lactose intolerance never undergo formal testing to make the diagnosis. Physicians typically think they recognize the symptoms and often recommend a “lactose-free” diet.¹³

Alternatively, since lactose intolerance runs in families, many people simply assume they have the condition because of a parent or relative.¹³

Several laboratory tests exist that can be used to diagnose lactose intolerance. A small intestinal biopsy can allow direct measurement of the enzyme, but this test is invasive, uncomfortable, and expensive—and may not be entirely reliable.¹³

The “hydrogen breath test” has been developed, which is relatively cheap and quite simple. After ingesting a known amount of lactose, a person simply breathes into a device that measures exhaled hydrogen, one of the byproducts of lactose malabsorption.¹⁷ The higher the hydrogen levels in the exhaled breath, the worse the lactose intolerance is.¹⁷

Hydrogen breath testing is now used in most studies of treatment of lactose intolerance to determine treatment effectiveness. It is the gold standard

in clinical practice to diagnose patients with lactose intolerance.¹⁵

Let’s now look at standard treatment of lactose deficiency to understand what sufferers are up against.

Standard Treatment of Lactose Intolerance

Most people with lactose intolerance—formally diagnosed or not—are told to “avoid dairy products.” In many cases, that’s as specific of a “treatment” as they receive.

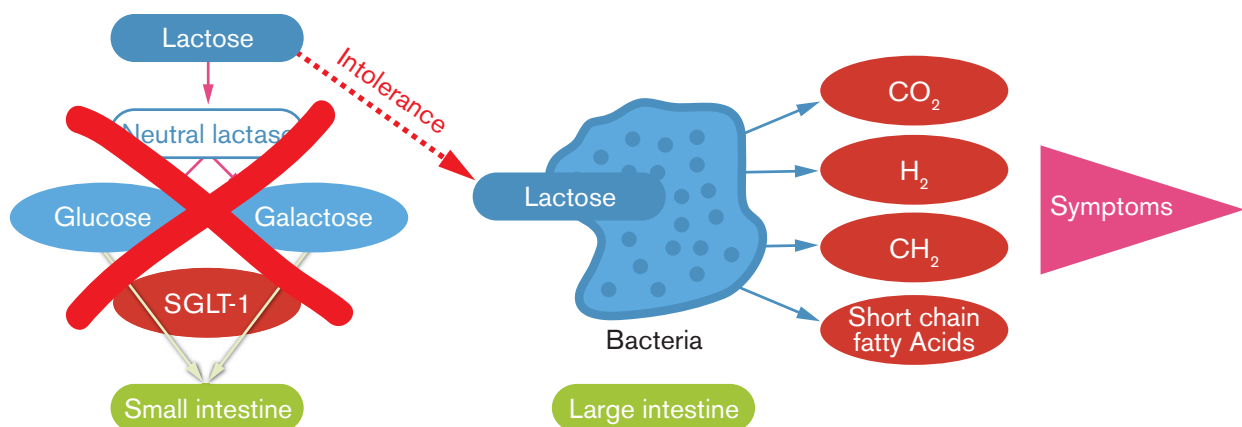
The alternative is to **replace the missing lactase enzyme**, either by mixing it with milk ahead of time, or by taking a supplement containing the enzyme right before consuming milk.¹⁸

Commercial products have been available for decades that contain a form of lactase that can be taken orally before milk consumption.

But these products, derived from molds in the genus *Aspergillus*, are stable only at the highly acid pH of the *stomach*.¹⁹

The result is that **standard lactase supplements have a very brief window of time during which they can attack the lactose load** contained in a milk-containing meal or drink.⁵ After that, they are not effective.

FIGURE 3: How Lactase Deficiency Produces Symptoms of Lactose Intolerance



When there's insufficient lactase enzyme in the small intestine, lactose can't be broken down. But intact lactose can't be absorbed. Instead, it passes into the large intestine, where normal bacterial action converts it into hydrogen, methane, and carbon dioxide gasses, and forms short-chain fatty acids. These, together with the excess water drawn into the intestine by osmosis, produce symptoms of bloating, flatulence, abdominal pain, and diarrhea.⁴

The average time for that stomach exposure is limited to roughly 15 to 45 minutes, which may not be sufficient time for the entire lactose load to be broken down for absorption.³ Scientists have, therefore, been seeking an alternative approach, one that would allow active lactase enzymes to reach the *small intestine*—**its normal site of action**—along with the load of lactose from the stomach.

That would permit much longer contact between the lactose load and the lactase enzyme, allowing more complete digestion of lactose in a more natural and appropriate setting.^{4,13}

Fortunately, just such an enzyme has finally been developed and packaged in **a form that can survive the acid environment of the stomach**.

New Neutral Lactase Works in the Small Intestine!

Neutral lactase is a novel form of the lactase enzyme that was developed and tested in Europe. It is derived not from the molds in the *Aspergillus* genus but from a simple yeast commonly used to make cheese, *Kluyveromyces lactis*.³

Unlike the mold-derived enzyme, which is active only at the acid pH of the stomach, *K. lactis*-derived lactase is **active at the nearly neutral pH of the small intestine**.^{19,20}

Lactose Intolerance or Milk Allergy?

There's a world of difference between the very common condition of lactose intolerance and the much rarer, and more dangerous, true allergy to milk.

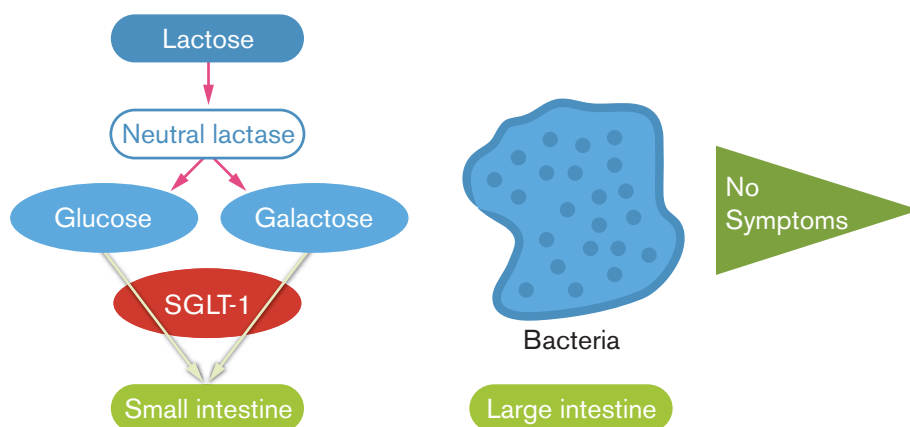
Lactose intolerance is caused by low levels of the enzyme lactase that your body uses to break down lactose (milk sugar).^{3,4} While it can produce many distressing and uncomfortable signals, lactose intolerance is not a true allergy because it does not result in the body developing an antibody-mediated immune reaction.

True milk allergy, on the other hand, involves a potent immune reaction to specific proteins in milk.²⁷ It causes an elevation in various markers of inflammation and heightened immunity. Though rare, some life-threatening allergic reactions to milk proteins have been reported.²⁷ Lactose intolerance causes symptoms of bloating, flatulence, abdominal pain, and watery diarrhea.¹³ Milk protein allergy generally afflicts children and produces symptoms more commonly associated with allergic reactions, including itching, rash, and wheezing.²⁷

Lactose intolerance is common, but a true milk allergy is rare in adults.²⁷ While neutral lactase has

been shown to be effective in decreasing the symptoms of lactose intolerance,³ it will have no effect on milk allergy.

FIGURE 4: Neutral Lactase In Action



Naturally acquired lactase deficiency can be treated by supplying sufficient neutral lactase to the small intestine, the site of its normal action.

This restores the small intestine's ability to break down lactose into glucose and galactose, which are absorbed. Just as in the normal situation (Figure 2), no intact lactose reaches the bacteria in the large intestine, and no symptoms result.⁴

That range of activity gives neutral lactase a much longer amount of time to work on ingested lactose, so **more of that lactose can be broken down and absorbed**.¹³ Neutral lactase, derived from yeast, has been shown to be more effective than mold-derived lactase at digesting lactose in milk.¹³

This has been evidenced by the significant decrease in the excretion of hydrogen in the breath to near-normal levels, and by the suppression of symptoms when added to milk before consumption.^{18,21-23}



What You Need to Know

Next Generation Support for Lactose-Induced Digestive Disturbance

- Lactose intolerance—the inability to digest milk sugar—afflicts more than 50 million Americans with gas, cramps, bloating, and diarrhea following ingestion of milk products. Its cause is the loss of the lactase enzyme, responsible for breaking down lactose for absorption in the intestine.
- Standard treatment for lactose intolerance includes either avoidance of milk products—which raises the risk of serious nutritional deficiencies—or supplementation with a short-acting lactase enzyme derived from molds.
- Mold-derived lactase works only in the stomach, limiting the amount of time the enzyme has to work on ingested lactose.
- Neutral lactase, derived from a common yeast, can work in the small intestine—the natural site of lactase activity—resulting in a large increase in the amount of time available for the lactase to digest lactose and help prevent symptoms.
- Neutral lactase is manufactured in a novel, acid-resistant form that rapidly passes through the stomach to deliver the active enzyme to the small intestine, the natural site of lactose metabolism.
- Studies show that neutral lactase is more effective than mold-derived acid lactase at reducing signs and symptoms of lactose intolerance

Neutral lactase has passed stringent safety testing, and no safety concerns have been identified.²⁴ It has a long history of use in the food industry to rid milk products of lactose.^{19,24,25}

Originally, the major barrier to the use of neutral lactase was the highly acidic, protein-digesting environment of the stomach. Unprotected, neutral lactase would simply be digested itself in the stomach, leaving no activity for the small intestine.

But scientists in Europe have developed a means of protecting neutral lactase by incorporating it into **tiny acid-resistant pellets**.⁴

The pellets are packaged in a vegetarian capsule that dissolves in the stomach within minutes of swallowing. Once released in the stomach, the pellets are transferred—**without digestion**—into the small intestine.³ There, the acid-resistant covering of the pellet is dissolved, releasing **100% of the enzyme for breakdown of lactose, working in the small intestine—just like your body's own natural lactase enzyme**.⁴

The result?

As shown in Figure 4, the complete digestion of lactose occurs within the small intestine, as **neutral lactase** immediately releases its glucose and galactose components for rapid absorption. This **leaves no intact lactose to pass into the large intestine** and trigger the painful and often embarrassing symptoms of lactose intolerance.

A human study of the new formulation showed it to be easily acceptable to patients, and highly effective.³ Among 64 individuals with lactose intolerance, scientists observed that **58% had reduction** in abdominal pain, **75% had reduced** bloating, **67% had less** diarrhea, and nausea was **reduced** in **58%** of subjects.³

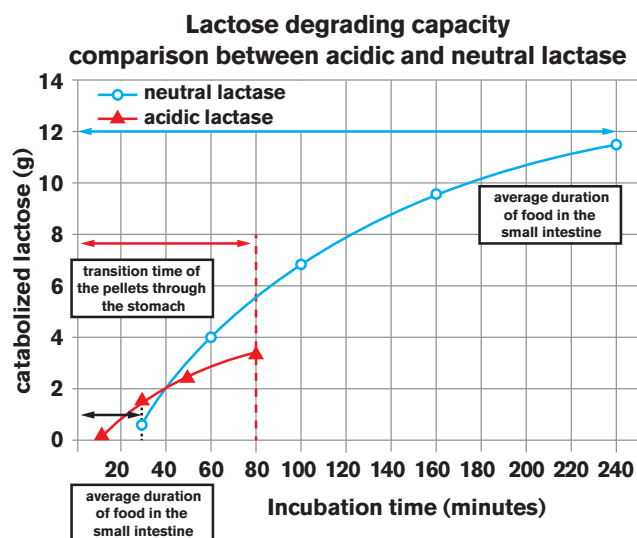
The results of a laboratory study graphically demonstrate the difference in performance between **traditional acid lactase** and the **new acid-stable, neutral lactase**. You can see the difference for yourself in Figure 5, which illustrates the **short** duration of action of the acid lactase in the *stomach*, compared with the **much longer** period of time the neutral lactase has to work in the small *intestine*.⁴

Summary

Lactose intolerance is one of the most common forms of food intolerance, afflicting upwards of 50 million people in America alone with **gas, bloating, cramping, and diarrhea**. Its cause is often an age-related loss—frequently beginning before age five²⁶—of the enzyme lactase that's required for breaking down the unique milk sugar, lactose.

Many sufferers simply avoid milk products.

FIGURE 5: Greater Lactose-Digesting Capacity of Neutral Lactase



Standard acid lactase (red) can act only in the acid environment of the stomach. But gastrointestinal contents are present in the stomach for only a relatively short period. Neutral lactase (blue) acts in the neutral pH of the small intestine, where digesting food remains for up to 4 hours. This allows neutral lactase to break down substantially more lactose than acid lactase. The size of this effect is shown in grams on the vertical axis, while the horizontal axis indicates time.⁴

Another option is replacing the lactase enzyme, but current lactase formulations work only in the acidic environment of the stomach. That limits their usefulness to the 15-45 minutes that a load of lactose remains in the stomach. A substantial amount of undigested lactose, therefore, still reaches the intestinal tract to cause symptoms.

A superior form of the lactase enzyme, **neutral lactase**, works in the small intestine instead, allowing it to continue breaking down lactose for *up to 4 hours!* Neutral lactase is packaged in a unique, acid-resistant form that allows it to pass through the stomach rapidly, and *reach the small intestine intact.*

Treatment with neutral lactase has been shown to reduce symptoms of lactose intolerance more effectively than treatment with standard, acid lactase supplements.

If you suffer from lactose intolerance, you owe it to yourself to use neutral lactase as a means of reducing—or even eliminating—your symptoms.

Warning

If one suffers **lactose intolerance** and can avoid milk in their diet, they may be better off than taking a product like **neutral lactase**. The reason is that most people already have excess amounts of **glucose** in their bloodstream. A lactose intolerant individual who starts consuming milk products because they take **neutral lactase** may be unwittingly spiking **after-meal** glucose blood levels, which increases risk of every disease and may accelerate aging.

While lactose intolerance is associated with loss of bone mass, this problem can be solved by supplementing with calcium, magnesium, vitamins D and K2, along with nutrients one would find in their multi-vitamin/mineral formula.

The only bone mineral not commonly found in supplements is **phosphorous**. A typical adult needs about **700 mg** a day. Those who eat meat (or lots of whole grain cereals and breads) should be assured of adequate phosphorous. Those who avoid dairy, meat, and even grains should consider a **500 mg** a day phosphorous supplement to ensure they get enough of this critical component of bone. Please know that most people get enough phosphorous from their diet and don't need to supplement with any more. ●

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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ITEM # 01707

REMARKABLE WEIGHT REDUCTION WITH **CoffeeGenic®** **Green Coffee Bean Extract (GCA®)**



In a placebo-controlled human study, subjects took **350 mg of green coffee extract** three times daily (before meals).

Study subjects were not asked to change their calorie intake or exercise level, but people participating in weight loss trials often do make lifestyle changes in order to increase their odds of shedding body fat.

The impressive findings, published in January 2012, noted that men and women lost an average of **17.6 pounds**—over **10%** of body weight—after **12 weeks** of **green coffee extract** supplementation! There was also an average **4.44%** reduction in body fat percentage!¹

The conclusion is that **green coffee extract** supports the ability to lose weight.¹ The form of **green coffee bean extract** used in this successful weight loss study is **CoffeeGenic® Green Coffee Extract (GCA®)**.

How CoffeeGenic® Works

The active ingredient in **green coffee bean extract** is **chlorogenic acid**.

Published studies on **chlorogenic acid** demonstrate a wide range of supportive properties related to insulin sensitivity² and to glucose formation^{3,4} and absorption.⁵

Clinical research has shown that **chlorogenic acid** helps limit after-meal glucose surges, supporting healthy blood sugar levels for those already within the normal range.⁶

CoffeeGenic® Green Coffee Extract (GCA®) provides a standardized dose of **chlorogenic acid** extracted from **green coffee beans**.

Based on the latest research, **CoffeeGenic® Weight Management™ with Green Coffee Extract (GCA®)** has been formulated to provide in each capsule:

CoffeeGenic® Green Coffee Bean Extract [Standardized to 50% <i>chlorogenic acids</i>]	350 mg
Integra-Lean® African Mango <i>(Irvingia gabonensis)</i> proprietary extract (seed)	100 mg
Chromium [as Crominex® 3+ chromium stabilized with Capros® <i>(Phyllanthus emblica)</i> extract (fruit) and PrimaVie® Shilajit]	150 mcg
Iodine (as potassium iodide)	100 mcg
Green Tea decaffeinated extract [98% polyphenols (49%), 45% EGCG (22.5 mg)]	50 mg

The suggested dose is just one capsule before each meal. A bottle of **90 vegetarian capsules** of **CoffeeGenic® Weight Management™ with Green Coffee Extract (GCA®)** retails for \$48. If a member buys four bottles, the price is reduced to **\$31.50 per bottle**.

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

Caution: If you are taking blood glucose lowering medication, consult your healthcare provider before taking this product.

Integra-Lean® *Irvingia* is protected by U.S. Patent No. 7,537,790. Other patents pending. IG08-131® proprietary extract is a registered trademark of Gateway Health Alliances, Inc. CoffeeGenic® contains GCA® brand green coffee extract, which is a registered trademark of Applied Food Sciences, Inc.

**To order CoffeeGenic® Weight Management™ with Green Coffee Extract (GCA®),
call 1-800-544-4440 or visit www.LifeExtension.com**

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

From European Scientists!



A Longer-Lasting Form of **LACTASE** For Digestive Support!

Some people experience occasional digestive issues when consuming **lactose**—the milk sugar found in **dairy** products.

Commercial **lactase supplements** may not provide sufficient protection or relief. The reason is that most lactase supplements quickly lose their protective ability.¹

As a result, many people still continue to experience **digestive discomfort** from eating dairy foods even after taking standard lactase supplements.

Fortunately, scientists in Europe have developed a **long-lasting lactase** called **LACTOSOLV™** that provides an effective solution.

Long-Lasting Support

Most lactase supplements function best in a highly **acidic** pH environment such as that of the stomach.^{2,3} This means that standard **lactase** supplements have a very brief window of time during which they can attack the lactose load. Several capsules may be needed to break down an average lactose-containing meal.^{1,3}

But **LACTOSOLV™ enteric-coated pellets** become active upon entering the nearly neutral pH environment of the **small intestine**.¹ The small intestine is where the digestive enzyme **lactase** is naturally produced to break down **lactose**.

LACTOSOLV™ greatly extends the window of activity of supplemental lactase, working over hours instead of merely minutes.¹

This results in **longer-lasting** support for the digestion of foods containing lactose!

Enjoy Dairy Again with Less Worry!

When you take a **LACTOSOLV™ Long-Lasting Lactase** capsule 10-15 minutes before your first bite of dairy, you're free to enjoy your favorite dairy food while minimizing concern about later discomfort—secure in the assurance that your lactase supplement **won't quit on you before its job is done!**¹

The suggested dosage of one (1) capsule of Life Extension® **LACTOSOLV™ Long-Lasting Lactase** taken 10 to 15 minutes prior to consuming lactose-containing foods or beverages provides:

Lactase (from *Kluyveromyces fragilis*)

212 LAU**

** Lactase Activity Units

A box of 30 capsules of Life Extension® **LACTOSOLV™ Long-Lasting Lactase** retails for \$30. If a member buys four boxes, the price is reduced to **\$20.25** per box.



Item #01702

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LACTOSOLV™ is a trademark of SCITEC Diagnostic Technologies GmbH.

To order **Life Extension® LACTOSOLV™ Long-Lasting Lactase**,
call 1-800-544-4440 or visit www.LifeExtension.com

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



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 table-spoons** of polyphenol-rich extra-virgin **olive oil** a day.¹

LIFE EXTENSION® MEMBERS LONG AGO BENEFITED

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

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

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

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

SUPER OMEGA-3 WITH SESAME LIGNANS AND OLIVE FRUIT EXTRACT

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

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

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

EPA (eicosapentaenoic acid)	1,400 mg
DHA (docosahexaenoic acid)	1,000 mg
Olive Fruit 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

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

Discover the European "Secret" to **Youthful, Healthy Legs**

Combat Unsightly Veins with This High-Potency Extract

30 YEARS OF CLINICAL EVIDENCE BRINGS LONG-AWAITED RELIEF

It is estimated that *half* of all women in the United States will develop unsightly veins by age 50.¹ While dermatologists often suggest surgery to correct this "age-related" issue, European women have enjoyed access to a **natural solution for 30 years!**

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

Derived from the sweet orange, **European Leg Solution** featuring **Certified Diosmin 95** contains a flavonoid called **diosmin** and is available in a one tablet per day formula.

MICRONIZED FOR GREATER EFFECTIVENESS

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

Life Extension®'s proprietary extract undergoes a complex, highly purified process called **micronization**. It yields the only *form* of diosmin clinically proven to support healthy vascular function in the legs.^{1,2}

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

As with so many age-related conditions, *inflammation*³ is the chief culprit behind the presence of unsightly veins.

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

THE PREFERRED TREATMENT AMONG EUROPEAN WOMEN FOR BEAUTIFUL LEGS IS HERE

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

Contains corn.

Caution

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



Item # 01042

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

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

*Product not for sale outside the United States.

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

References: 1. <http://www.womenshealth.gov/faq/varicose-spider-veins.cfm>. 2. *Angiology*. 2003 Jul-Aug;54 Suppl 1:S33-44.
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These statements have not been evaluated by the Food and Drug Administration.
This product is not intended to diagnose, treat, cure, or prevent any disease.

2012 MOLECULAR GENETICS OF AGING CONFERENCE

Twenty-four years ago the field of aging research was galvanized when it was discovered that modification of a single gene could more than double the maximum life span of nematode worms.¹ Since that time genetic manipulations have been used to increase the life span of many species, including the creation of Ames dwarf mice, which live nearly **50%** longer than their genetically normal siblings.² Many researchers hope that similar results can be achieved for humans.

That longevity is controlled by genetics seems obvious from the facts that mice age to death in a few years, cats in less than two decades, and humans live much longer. Some scientists think aging is entirely due to control over production and repair of damaging agents from metabolism, others think genes produce substances that induce aging, while still other researchers believe aging results from a decline in gene control. >





For the last decade, Cold Spring Harbor Laboratory on Long Island, New York, has been holding “**Molecular Genetics of Aging**” conferences every two years. The most recent such meeting featured more than 100 eight-minute presentations and about 80 posters by most of the world’s leading scientists in the field of the

genetics of aging. Scientific conferences often include poster sessions in which scientists who do not present their work in front of an audience can present their work in the form of a poster that can be viewed and discussed with other scientists. Poster sessions allow for much more personal interaction between the scientists.

Among the key candidates as regulators of aging has been a family of enzymes known as **sirtuins**. Sirtuin was first discovered to extend life span in yeast³ and later discovered to extend the life span of nematode worms and fruit flies.⁴ Deleting sirtuins prevents the life span-increasing benefits of calorie restriction in many species.⁵ **Resveratrol**, a chemical found in the skin of red grapes that stimulates sirtuin activity, has been shown to increase the life span of worms and flies.⁶ Resveratrol has also extended the life span of mice fed a high-fat diet.⁷ Complicating the question of how sirtuins affect aging is the fact that mammals have at least seven different sirtuins, designated SIRT1 - SIRT7.⁸ SIRT1 is the mammalian analog of the sirtuin found in yeast, worms, and flies. Resveratrol activates SIRT1, but not the other sirtuins.

At the conference **Haim Cohen, PhD**, Bar-Ilan University, Faculty of Life Sciences, Israel, reported on his work comparing the effects of SIRT1 and SIRT6.



Mice induced to make extra amounts of SIRT6 showed similar protection against the damaging effects of a high fat diet as mice that have been fed resveratrol, despite the fact that resveratrol stimulates SIRT1 but not SIRT6.^{7,9} SIRT6 promotes insulin signaling and protects against the metabolic diseases often associated with obesity and aging. Cohen noted that SIRT6 levels become lower in obese humans. In his more recent research, Cohen showed that male (but not female) mice over-expressing SIRT6 live **10-15%** longer than normal mice.¹⁰ It had been discovered many years earlier that mice engineered to produce no SIRT6 will age prematurely.¹¹ In trying to understand why SIRT6 extends male but not female mouse life span, scientists have referred to the higher cancer incidence normally seen in male mice and the higher serum IGF-1 hormone in males.¹²

Vera Gorbunova, PhD, Professor, University of Rochester Department of Biology, New York, reported on her research on SIRT1 and SIRT6 using human cell cultures. Cells contain special enzymes that repair various kinds of breaks in DNA strands. Dr. Gorbunova found that SIRT1 had no effect on repair of double-strand breaks, but increasing SIRT6 could more than triple both mechanisms for repair of double-strand DNA breaks.¹³ Her more recent research has shown that the benefits of SIRT6 on DNA repair are due to the ability of SIRT6 to recruit various DNA repair proteins to the site of DNA damage.¹⁴ Because DNA



damage leads to cancer and other maladies of aging, finding molecules that stimulate SIRT6 just as resveratrol stimulates SIRT1 has the potential to extend human life span and healthspan.



Yelena Budovskaya, PhD, Assistant Professor, University of Amsterdam, Swammerdam Institute for Life Sciences, Netherlands, holds the view that aging is not the result of accumulated damage, but rather is the result of "developmental pathways that go awry late in life."¹⁵ Her study of nematode worms supports her view. **Wnt** is a protein found in all multi-cellular organisms that is essential for growth and development. In a yet-to-be-published study, Budovskaya found that on the fifth day of worm adulthood, the level of Wnt is **5 times** greater than on the first day of adulthood, and on the tenth day of adulthood it is **10 times** greater. By inactivating Wnt function on the first day of adulthood, she was able to extend the life span of her nematode worms by **40-50%**. Inactivation later than the first day of adulthood was less beneficial. In mammals, Wnt protein increases with age, and this increase causes muscle stem cells to age.¹⁶ So there is a potential for a Wnt-blocking molecule to delay aging in adult humans.

Telomeres are structures that protect the end of chromosomes, much like the caps on shoelaces protect shoelaces from becoming frayed. Many aging researchers believe that telomere length is a critical determinant of aging, because cells stop dividing when telomeres become too short. Short telomeres



Henriques

in humans are associated with diseases of aging and reduced longevity. Mice have often been used as model mammals for many aspects of aging research, including research on telomeres.¹⁷ But mice, with their long telomeres, short life spans, and high levels of telomerase (an enzyme that lengthens telomeres) might be a poor model for studying the effects of telomere length on human aging. **Catarina Henriques, PhD**, Instituto Gulbenkian de Ciencia, Telomeres and Genome Stability Lab, Portugal, has found that telomere length in zebrafish is comparable to that in humans, and that zebrafish with experimentally reduced telomerase showed symptoms of premature aging. Dr. Henriques believes that, with their four-year life span and telomere behavior more similar to humans than mice, zebrafish would be a more relevant human model than mice for studying the relationship between telomeres and aging.

In separate presentations, both **Darren Baker, PhD**, Assistant Professor, Mayo Clinic College of Medicine, Department of Biochemistry and Molecular Biology, Rochester, Minnesota, and his supervisor (Jan van Deursen) discussed Baker's research results. Dr. Baker has been studying mutant mice that contain low levels of a protein called **BubR1**, which is necessary for cell division. BubR1 protein normally declines with age. Baker showed that graded reductions



Baker

of BubR1 in his mutant mice resulted in increasing signs of aging and chromosomal abnormalities associated with cancer.¹⁸ His mutant mice also displayed endothelial dysfunction similar to the blood vessels of aging humans.¹⁹ Many of the cells in Baker's mutant mice became prematurely senescent (non-dividing). He found the proteins that caused this change.²⁰ His *tour de force* was in 2011, when he demonstrated that using the protein marker he discovered to eliminate senescent cells in mice resulted in rejuvenating effects in the mice.²¹ Needless to say, there is hope that similar procedures can be applied to humans.

During her eight-minute presentation, **Nirinjini Naidoo, PhD**, University of Pennsylvania Perelman School of Medicine, Division of Sleep Medicine, summarized the studies and reviews she has published on the subject of endoplasmic reticulum stress (ER stress), sleep deprivation, and aging. The **endoplasmic reticulum** is the area of cells where proteins are folded into a conformation that will allow those proteins to function properly. **ER stress** occurs when too many proteins have been incorrectly folded in the endoplasmic reticulum. A cell can often correct ER stress by reducing the rate of protein production, increasing the number of protein-folding molecules, or by increasing protein degradation. These corrective responses become increasingly defective with aging. Unresolved ER stress leads to cell death (apoptosis). Dr. Naidoo has shown a **30%** reduction in a protein-folding molecule in the cerebral cortex of old mice compared to young mice.²² Many key ER molecules become increasingly oxidized with age.²³

Naidoo said that both sleep and wakefulness become increasingly fragmented with age. Another study by Dr. Naidoo demonstrated ER stress in the mouse cerebral cortex with 6 hours of sleep deprivation.²⁴ Although she can experimentally induce ER stress with sleep deprivation, Naidoo said she has still not determined the exact mechanism by which this occurs. Protein misfolding is a key process in many age-related neurodegenerative diseases, including Alzheimer's Disease, Huntington's Disease, and Parkinson's Disease.²⁵ Accumulated cholesterol in the endoplasmic reticulum caused ER stress in macrophages and is a key factor in atherosclerosis.²⁶ ER stress is a central feature of insulin resistance with type II diabetes.^{27,28} Reducing ER stress by getting more sleep may be a way for people to delay many of these age-related diseases. Dr. Naidoo asserts that, *"Sleep is a basic need that is made secondary to work schedules and some leisure activities for many adults"* and *"It is imperative to educate the public about the very real damage of abnormal sleep/wake cycles."*²⁹



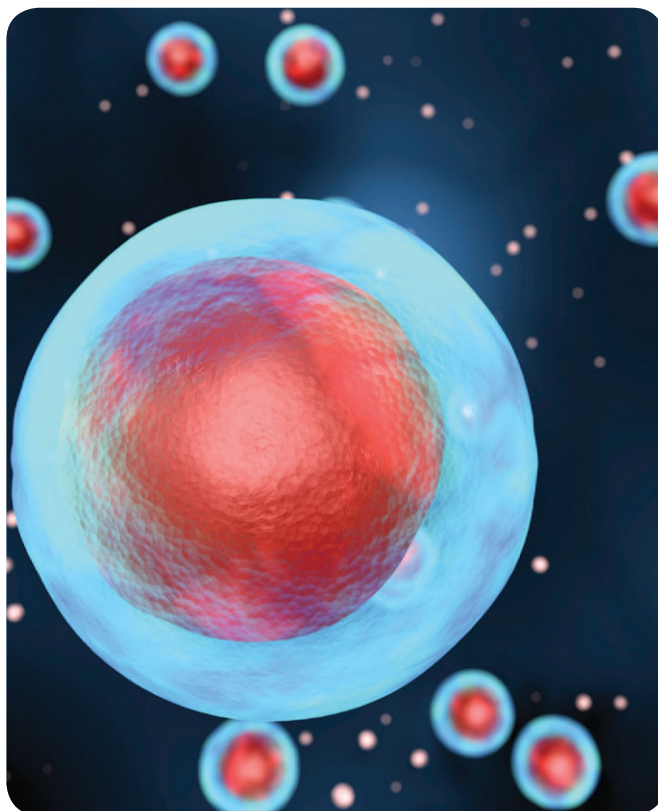
Life extensionists hearing the work of these scientists can be eager to see the results applied immediately. In some cases this is possible, such as getting more sleep to reduce ER stress.

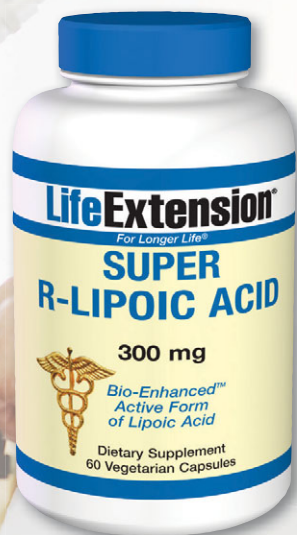
In most cases, however, we should appreciate that the research results are leading scientists closer to developing therapies to eventually enable humans to gain greater control over aging. While more research is required, the exponential rate of understanding as to why we age, and what can be done to slow and eventually reverse it, provides a tantalizing glimpse into a future where humans will live significantly longer without suffering early onset of degenerative disease. ●

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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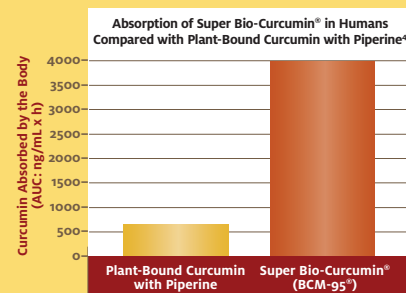


Chart 1. Super Bio-Curcumin® (BCM-95®) showed 6.3 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with plant-bound curcumin with piperine (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin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

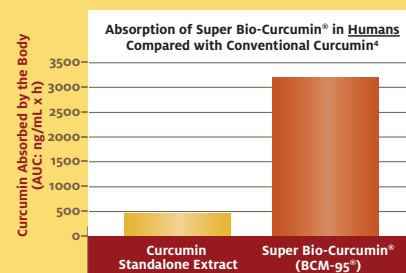


Chart 2. Super Bio-Curcumin® (BCM-95®) showed 6.9 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with conventional curcumin (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin absorbed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

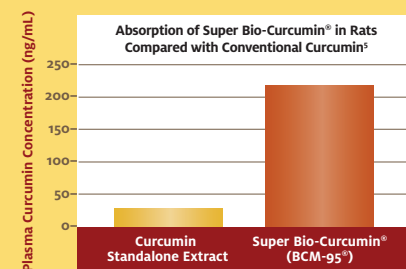


Chart 3. Bioavailability in rats fed with BCM-95® is 7.8 times higher than conventional curcumin.

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BY GARY GOLDFADEN, MD AND ROBERT GOLDFADEN

FIGHT SKIN AGING *with* COFFEE EXTRACTS

While various factors influence skin aging (including stress and environmental pollutants), long-term sunlight exposure is a primary environmental accelerator.¹

As you grow older, your face is the first area to exhibit the visible effects of ultraviolet (UV) radiation, also known as **photoaging**, with the manifestation of fine lines, wrinkles, loose and dry skin, and discoloration.²

These unsightly changes reflect the deteriorating condition of the components that make up the inner layer of the skin, the dermis.³ This **extracellular matrix** is a combination of the fibrous proteins **collagen** and **elastin**, along with water-binding **glycosaminoglycans**.⁴ Together, these substances form a strong and resilient framework of connective tissue that gives the skin elasticity, strength, and compressibility—ultimately supporting the appearance of youthful and vibrant skin.³

Ultraviolet rays from sunlight wreak havoc on the skin by generating the production of free radicals that break down the vital components of the extracellular matrix.⁵ Over time, this contributes to the tell-tale signs of photoaging.¹ >





International teams of researchers stretching from Brazil to Japan have discovered that ingredients extracted from **coffee beans** have been *scientifically shown* to rejuvenate aging skin.⁶⁻⁹ In one study, treated subjects experienced *significant* improvements in the appearance of wrinkles, firmness, redness, and texture of facial skin.⁹

Coffea Arabica Seed Oil

Americans consume more than 580 million cups of coffee each day as part of their daily ritual.¹⁰ Research is emerging that green, *unroasted* coffee beans provide numerous skin-related benefits when applied topically.⁶ This is especially true of one of the most commonly grown species of the coffee plant, *Coffea arabica*.^{6,11}

Coffea arabica seed oil is extracted by cold pressing green coffee beans.^{6,12} Its high concentration of essential fatty acids, sterols, and vitamin E make it a potent antioxidant that can offer protection against skin damage such as sunburn cell formation and DNA degradation. It can also assist in the prevention of the development of photoaging and inflammatory skin disorders.⁶

In a placebo-controlled clinical study of 40 female participants, a topical mixture containing *Coffea arabica* was applied twice daily as a facial wash and once per day as a lotion and night cream. After 12 weeks, treated subjects experienced significant improvements in the appearance of wrinkles, firmness, redness, and texture, compared to the control group.⁹

These impressive results were due to *Coffea arabica*'s ability to increase production of collagen and elastin and to protect against the loss of moisture.⁶

When Brazilian scientists tested *Coffea arabica* seed oil on human skin, they found a **1.5-fold** increase in *elastin* production and a nearly **2-fold** increase in *collagen* production compared to the controls.⁶ These two proteins are essential for smoothing wrinkles and preserving the firmness and flexibility of facial skin.

In addition, treated skin cells had nearly **7-fold** higher expression of **aquaglyceroporins-3** (AQP-3) and a **2-fold** increase in the amount of **glycosaminoglycans**.⁶ These proteins act as a tag-team to halt moisture loss and improve skin hydration. First,

glycosaminoglycans behave like a sponge to bind and trap water molecules in a water reservoir, then **AQP-3** transports them to the upper layers of the skin where they reduce excessive facial dryness and fine lines.⁶

Coffea Robusta Seed Extract

Robusta coffee is native to western Africa and contains a greater quantity of **caffeine** and **active constituents** than Arabica coffee due to its processing method.¹³ These compounds possess strong antioxidant properties that minimize the adverse effects of cumulative UV exposure.⁷⁻⁹

In an *in vitro* study conducted by Japanese researchers, topical **chlorogenic acid** reduced redness induced by excess ultraviolet exposure.⁷

And in another study, scientists tested topical **caffeine's** ability to protect against photoaging.⁸ For the study, researchers exposed hairless mice to ultraviolet B (UVB) and then applied topical caffeine three times per week for 11 weeks. The results revealed that *caffeine administration limited photodamage*.

This protection could be related to caffeine's ability to increase apoptosis (programmed cell death) of UVB damaged keratinocytes, which remove damaged skin cells before they cause photoaging and skin cancer.⁸

Caffeine also effectively targets and diminishes the appearance of crow's feet.¹⁴ In a study involving 35 women between 30 and 70 years old, a cream containing caffeine was applied to the skin surrounding the eye on one half of the face twice daily while the other half of the face received no treatment. After four weeks, researchers observed a significant improvement in overall skin smoothness and the depth of wrinkles in the skin around the treated area, as measured with a three dimensional optical imaging technique.¹⁴



Summary

Researchers have designed an innovative facial cream that includes ingredients that have been documented to improve the appearance of wrinkles, firmness, redness, and texture.^{9,14}

Coffea arabica seed oil and *Coffea robusta* seed extract (which contains **chlorogenic acid** and **caffeine**) defend against photoaging and support the skin's structure to restore moisture and hydration for the appearance of brighter and firmer youthful-looking facial skin.⁶ ●

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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What You Need to Know

Coffee Rejuvenates Aging Facial Skin

- Your face is the first area to exhibit the visible effects of ultraviolet (UV) radiation, also known as photoaging, with the manifestation of fine lines, wrinkles, discoloration, and loose, dry skin.
- Extracts from the two most common species of coffee plant directly combat UV damage to improve the strength, resilience, and elasticity of your facial skin.
- *Coffea arabica* seed oil significantly improves collagen and elastin production.
- *Coffea robusta* has a high concentration of chlorogenic acid (which reduces redness associated with excessive sunlight exposure) and caffeine (which limits photodamage, decreases skin roughness and wrinkle formation, and reduces the appearance of crow's feet).

NEW

EFFERVESCENT VITAMIN C- MAGNESIUM CRYSTALS

Effervescent Vitamin C-Magnesium Crystals contains no harsh, synthetic chemicals.^{12,13}

Effervescent Vitamin C-Magnesium Crystals is safe for up to three times per week, since it contains only nutrients that can provide other benefits.

Effervescent Vitamin C-Magnesium Crystals is not a fiber—so it never creates more fecal bulk than you can easily evacuate.^{14,15}

Occasional constipation is one of the most frequent gastrointestinal complaints in the United States, particularly among women and the elderly.¹ To address this issue, Life Extension® offers a dose-adjustable nutritional solution—**Effervescent Vitamin C-Magnesium Crystals**—to provide immediate **relief from occasional constipation**.

THE PROBLEM

A series of rhythmic muscle contractions move food through the digestive tract.² But highly processed foods and a lack of quality nutrition can occasionally result in normal but temporarily ineffective movement of waste through the colon.

NUTRITIONAL SUPPORT

Vitamin C is an antioxidant that scavenges free radicals in the body and protects tissues from oxidative stress.^{3,5} Vitamin C is a vital cofactor to the formation of collagen, the connective tissue that supports arterial walls, skin, bones, and teeth.^{4,5}

Magnesium is a cofactor in hundreds of enzymatic processes within cells, helps maintain healthy blood pressure levels already within normal range, improves the metabolic profile, beneficially impacts insulin resistance and inflammation. Research shows many Americans do *not* obtain adequate magnesium in their diets.⁶⁻¹¹

Effervescent Vitamin C-Magnesium Crystals has been developed to help provide relief from occasional constipation.

Effervescent Vitamin C-Magnesium Crystals can be used in varying doses depending on individual need. The suggested starting dose should be one (1) level teaspoon of **Effervescent Vitamin C-Magnesium Crystals**, taken on an **empty stomach**, mixed in 8 ounces of water. Follow immediately with drinking 8 additional ounces of water.

Each level teaspoon (approx 6 grams) provides:

- **4,500 milligrams** of vitamin C (as ascorbic acid)
- **4 milligrams** of vitamin B6 (as pyridoxine hydrochloride) and
- **250 milligrams** of magnesium (as magnesium carbonate)

Some people will need to take one teaspoon of **Effervescent Vitamin C-Magnesium Crystals** on an empty stomach up to three times a week. Always follow by drinking an additional 8 ounces of water.

A bottle of 180 grams of Life Extension® **Effervescent Vitamin C-Magnesium Crystals** retails for \$20. If a member buys four bottles, the price is reduced to only **\$13.50 per bottle**.



Item #01736

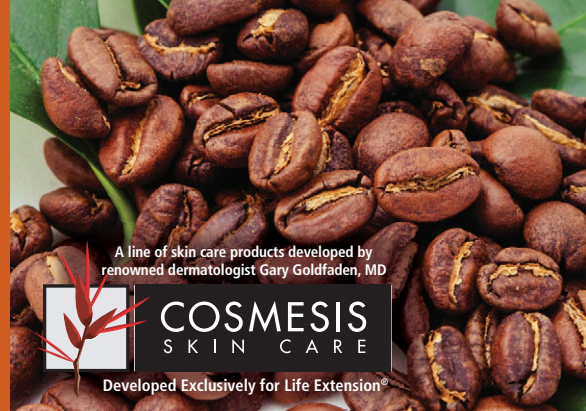
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**To order Life Extension® Effervescent Vitamin C-Magnesium Crystals,
call 1-800-544-4440 or visit www.LifeExtension.com**

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

COFFEE EXTRACTS FOR THE SKIN



It is now possible to diminish visible signs of facial-skin **photoaging**—by harnessing the power of **coffee compounds**.

Facial skin retains its youthful, vibrant glow thanks to a resilient framework of connective tissue formed by the proteins *collagen* and *elastin* and water-binding *glycosaminoglycans*.¹ These molecules make up the skin's **extracellular matrix** that supports the suppleness of the skin.^{1,2}

However, free radicals generated by the pervasive ultraviolet rays of the sun are associated with a normal decline in this extracellular matrix.^{2,3} Over time, unsightly, tell-tale signs of photoaging may appear—**wrinkles, redness, and roughness**—especially in the sun-vulnerable regions such as the face.^{4,5}

Concentrated **coffee extracts** can target multiple factors involved in facial skin aging.

THE POWER OF TOPICALLY APPLIED COFFEE COMPOUNDS

Scientists have shown that topical application of the highly active **coffee compounds** supports the natural capacity of the extracellular matrix to replenish connective tissue and restore water-binding molecules.⁶⁻⁸

Topically applied **caffeine**, for instance, helps support the body's normal removal of ultraviolet light-damaged *keratinocyte cells*—the process a healthy body employs to inhibit skin photoaging.⁸

This promotes the appearance of firmer, more **youthful-looking** facial skin.⁹

IMPACT ON AGING SKIN

Studies have demonstrated the effectiveness of coffee compounds—*Coffea arabica* seed oil as well as *Coffea robusta* seed extract, which is known to contain both **chlorogenic acid** and **caffeine**—on aging facial skin.

When applied directly to facial skin...

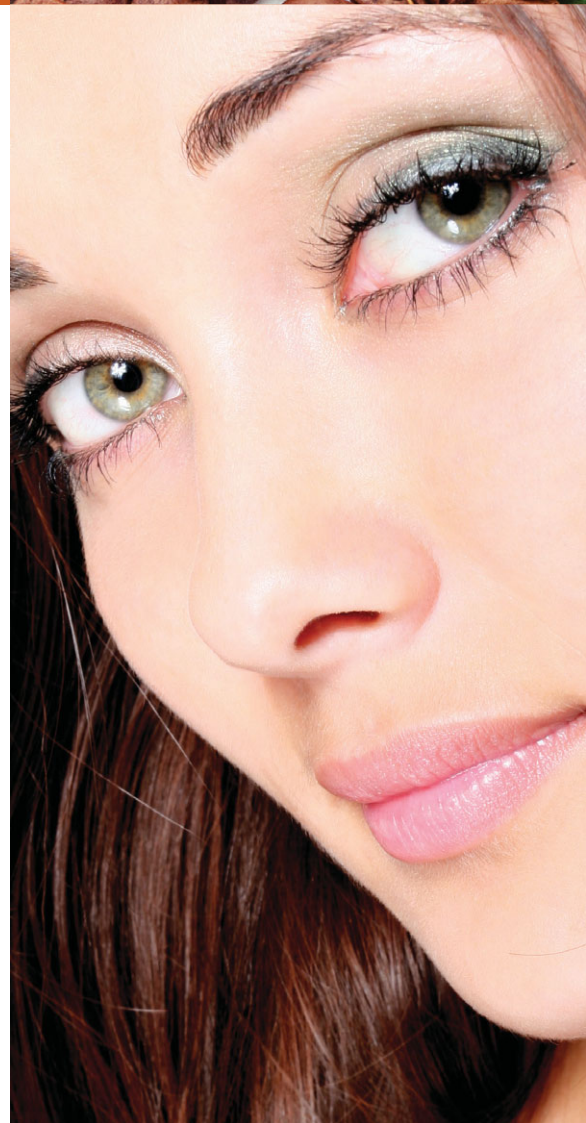
- **Arabica seed oil** improved skin dryness and promoted the body's natural production of collagen and elastin.⁶
- **Coffea arabica** supported improvement of the appearance of wrinkles, redness, and rough texture in a clinical trial—after **just 12 weeks** of twice daily application.⁹
- **Chlorogenic acid** helped reduce the normal redness associated with prolonged ultraviolet exposure.⁷
- **Caffeine** enhanced the visibility of skin smoothness and promoted a reduction in wrinkle depth—with clinical results seen in **only 4 weeks**.¹⁰

These **coffee extracts** have been combined into the new **Cosmesis Anti-Aging Rejuvenating Face Cream** to help provide support against the visible signs of *photoaging*. Suggested use is to apply this rejuvenating face cream to clean skin twice a day, morning and night.

A net weight **2 oz** jar of **Cosmesis Anti-Aging Rejuvenating Face Cream** retails for \$65. If a member buys two jars, the price is reduced to **\$42.75** per jar.

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Item # 80151

To order Cosmesis
Anti-Aging Rejuvenating Face Cream,
call 1-800-544-4440 or
visit www.LifeExtension.com

SAMe FOR BRAIN HEALTH

Life Extension® first introduced SAMe in 1997. Since then, researchers continue to discover impressive benefits of this versatile nutrient. Largely known for its effects on optimal mood, SAMe has also shown benefits for the liver, brain, and joints.

A recent study conducted at Harvard Medical School and Massachusetts General Hospital cited the impressive benefits of SAMe for mood elevation.¹

A report published in Germany indicates that SAMe may help maintain healthy neurological function.* The impressive results showed that:

- SAMe increased glutathione levels by 50% and glutathione enzyme activity by 115%.²
- SAMe decreased a measurement of free radical activity by 46%.²
- SAMe inhibited lipid peroxidation by 55% in culture.²

In addition to these findings, SAMe also improves brain cell **methylation**, thereby facilitating youthful **DNA enzymatic actions** (which may help account for SAMe's mood-elevating properties). These enzymatic reactions are required for the healthy conversion of neurotransmitters such as **serotonin** and **dopamine**.



Item # 00557

The good news is that **SAMe** prices continue to **plummet**. Compared to when SAMe was first introduced to the United States in 1997, Life Extension members can now obtain it for **78% less**. On an inflation-adjusted basis, the savings are even greater.

A box of 20 **400 mg** SAMe tablets retails for \$28. When a member buys six boxes, the price is reduced to only **\$18 a box—a savings of 35%!**

(SAMe is also available in bottles containing 50 400 mg tablets. Retail price is \$66. If a member buys four bottles, the price is reduced to \$45 per bottle.) (Item # 01055)

References

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**To order your supply of premium-grade SAMe,
call 1-800-544-4440 or visit www.LifeExtension.com**

CAUTION: SAMe should not be taken by those diagnosed with bipolar disorder.

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

Are You Travelling This Summer?

DAILY **GRAB 'N GO** PACKS

Convenient
Daily Individual
Packs
Containing
Five Protective
Formulas



For people on the go, it's easy to forget to take your supplements. Life Extension® has created daily **Comprehensive Nutrient Packs Advanced** with five protective formulas—in one convenient grab 'n go pack. Specially designed by Life Extension, the **Comprehensive Nutrient Packs Advanced** provides you with broad-spectrum nutrient protection—at no additional cost when compared to buying each product separately!

Each pack contains the following supplements:

- **Two-Per-Day Multi-Nutrient Tablets** (2 tablets)
- **Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract** (2 softgels, yielding **700 mg** EPA and **500 mg** DHA)
- **Super Bio-Curcumin®** (1 capsule provides **400 mg** of Bio-Curcumin® that can provide blood levels equal to **2,500-2,800 mg** of commercial curcumin supplements)
- **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support** (1-100 mg softgel)
- **Super Booster Softgels with Advanced K2 Complex** (1 softgel)

The Best Way to Manage Your Daily Supplement Regimen

These vital nutrients, bundled at no extra cost into a single packet, combine convenience with superior value when compared to buying each product separately.

A box containing a **30-day** supply of **Comprehensive Nutrient Packs Advanced** retails for \$90. If a member buys four boxes, the cost is just **\$61.50 per box. Item# 01796**

Kaneka QH® is a registered trademark of Kaneka Corporation. Tomat-O-Red® is a registered trademark of LycoRed LTD. SelenoPure™ is a trademark of Nutrition 21. OptiZinc® is a registered trademark of InterHealth Nutritionals, Inc. Biolut™ is a trademark of Biolut SA de CV. Crominex® 3+, Capros® and PrimaVie® are registered trademarks of Natreon, Inc. Albion® is a registered trademark of Albion Laboratories, Inc. Bio-Curcumin® and BCM-95® are registered trademarks of Dolcas- Biotech, LLC. U.S. Patent Nos. 7,883,728, 7,736,679 and 7,879,373.

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

To order Life Extension® Comprehensive Nutrient Packs Advanced, call 1-800-544-4440 or visit www.LifeExtension.com

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

Magnesium and Brain Health

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

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

New Cognitive Benefits Revealed!

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

Capsules or Powder...Value Priced

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

This same brain-health supporting magnesium is also available in a natural lemon flavor called **Neuro-Mag™ Magnesium-L-Threonate with Calcium and Vitamin D3 Powder**. In addition to its fresh lemon flavor, the one-scoop per day serving supplies the same amount of magnesium as the capsules plus **500 mg** of highly soluble calcium and **1,000 IU** of vitamin D3.

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

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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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Item # 01602



Item # 01603



SUPER FOODS

BY WILLIAM GAMONSKI

THE REVERED RASPBERRY

While blueberries and strawberries usually gain recognition for their health-enhancing properties, raspberries have quietly built an impressive resume of vast health benefits that match any berry. The fruit's potent anti-inflammatory power contributes to fighting obesity, enhancing cardiovascular support, battling cancer, and combating diabetes.¹

Raspberries' History

Although the exact origin of raspberries (*Rubus spp.*) is unknown, it's believed they were cultivated in Europe more than 2,000 years ago and introduced to North America from eastern Asia through trading. The edible fruit is one of the most popular berries in the world, with top producers in Russia, the United States, Serbia, and Poland. Red and black raspberries are the most common varieties you will find at your local grocery store.¹



Antioxidant Powerhouse

While all berries are recognized for their antioxidant value, raspberries stand out for their large quantities of hard-to-find **ellagitannins**, which provide cancer fighting and anti-inflammatory properties.¹ These potent phenolic compounds, combined with the fruit's wealth of vitamin C and **anthocyanins** (evident by its deep rich red color), have contributed to raspberries possessing nearly **50%** more antioxidant capacity than strawberries and ten times that of apples, making them one of the richest sources of dietary antioxidants.²

Anti-Inflammatory Properties

Raspberries' ability to suppress inflammation has sparked interest in its potential to treat arthritic conditions, which affect an estimated 46 million American adults.³ While non-steroidal anti-inflammatory drugs (NSAIDs) have become a mainstay for treating arthritic conditions by decreasing the production of cyclooxygenase-2 (COX-2), an important enzyme in the formation of inflammatory compounds that induce pain, they are often accompanied by unwanted side effects.⁴ Researchers at Michigan State University tested the cyclooxygenase inhibitory properties of anthocyanins in popular fruits, including raspberries, strawberries, blackberries, cherries, and cranberries. The findings showed that raspberries were second only to cherries in their ability to inhibit COX-2, with the fruit reducing the enzyme by **45%**. This effect was comparable to NSAIDs and demonstrates that raspberries have



promise as an effective and safe alternative to these drugs for quelling inflammation associated with arthritic conditions.⁵

The strong COX-2 inhibitory effect of raspberries might be responsible for the results reported in a study published in the *Journal of Agricultural and Food Chemistry*.⁶ Scientists induced rats with arthritis and administered either raspberry extract or water for 30 days. At the end of the study, the experimental group had less severe arthritis compared to the control group, as raspberry extract significantly decreased inflammation and cartilage damage by **54** and **67%**, respectively.⁶

The anti-inflammatory benefits of the fruit also extend to those who suffer from ulcerative colitis, a chronic inflammatory bowel disorder. Individuals with ulcerative colitis produce excessive amounts of cytokines, which damage the colonic lining and significantly increase the risk for colon cancer.⁷ Scientists at Ohio State University found that mice with ulcerative colitis supplemented with black raspberry powder for 7 days experienced a favorable reduction in the expression of pro-inflammatory cytokines, thereby protecting the colonic lining against inflammation and injury.⁷

Cancer Protection

Although cancers differ from one another in certain characteristics, most share the common key initiator of DNA damage. Researchers discovered that mice adhering to a raspberry-rich diet for three weeks significantly reduced DNA damage by **59%**. This was attributed to its high ellagic acid content that increased DNA repair, which prevented the occurrence of mutations that lead to cancerous cells.⁸

A recent study published in the journal of *Cancer Prevention Research* shows promise for black raspberries against colon cancer. Mice were implanted with a specific DNA strand intended to accelerate intestinal tumor progression and then were randomized to a typical Western diet with or without freeze-dried black raspberries for 12 weeks. Compared to the control group, mice supplemented with black raspberries had a **45%** reduction in tumor incidence and a **60%** decrease in the number of tumors. Researchers believe that black raspberries suppress the production of beta-catenin, a protein involved in promoting tumor growth.⁹

Black raspberries might also reduce cancer-promoting oxidative stress in individuals with Barrett's



Selecting and Storing Raspberries¹

1. Raspberries are available from mid-summer through early fall.
2. Select fully ripe, firm, and deep rich red color raspberries.
3. Avoid soft, mushy, and molded raspberries.
4. Since raspberries are highly perishable, consume upon purchase or keep fresh in refrigerator for up to two days.

esophagus, a complication of gastroesophageal reflux disease (GERD) that induces chronic injury to the esophagus lining and substantially increases the risk for fatal esophageal cancer.¹⁰ In a human study conducted by Ohio State researchers, patients with Barrett's esophagus consuming **32 to 45 grams** of black raspberry powder (equivalent to **1 to 1.5 ounces**) for six months lowered 8-isoprostane and 8-OHdG concentrations, both markers of oxidative stress.¹⁰

Cardioprotective Effects

Growing evidence indicates that raspberries can favorably affect heart health by modulating high blood pressure and inhibiting LDL oxidation. With one in three Americans suffering from hypertension, raspberry consumption offers a powerful dietary strategy for combating this silent killer.¹¹ In a study reported in the *Pharmacognosy Magazine*, Chinese researchers evaluated the efficacy of raspberry extract to lower blood pressure in hypertensive rats. Compared to baseline, animals supplemented with raspberry extract reduced their mean systolic blood pressure by **12.2-16.1 mmHg** after five weeks. The anti-hypertensive effect of raspberry is accomplished by promoting the availability of nitric oxide to endothelial cells, leading to arterial dilation that helps lower blood pressure.¹²

LDL oxidation is a better predictor of cardiovascular disease than LDL cholesterol levels.^{13,14} Oxidized LDL cholesterol accumulates within macrophages, causing them to turn into foam cells that form the fatty plaques associated with atherosclerosis.¹⁴ Scientists at the University of California found that raspberries ranked second out of five tested fruits for inhibiting LDL oxidation, with a more potent effect than blueberries and strawberries.¹⁵

Battling Obesity

Over one-third of adults in the US are obese.¹⁶ Some of the leading causes of preventable death including heart disease, stroke, type II diabetes, and certain types of cancer are related to obesity. Even worse, this epidemic is now spreading to children. Since 1980, the obesity rate for children and



SUPER FOODS

adolescents has tripled.¹⁷ Nearly 15% of children under age 19 in the US are obese and obese children are more likely to become obese adults. In fact, childhood obesity is likely to lead to more severe obesity in adulthood.¹⁸

Raspberry ketone is a major aromatic compound of the red raspberry.¹⁹ Studies using experimental models of obesity have shown that raspberry ketones help prevent obesity and activate lipid metabolism. Specifically, when mice were fed a high-fat diet, raspberry ketones were shown to prevent the high-fat-diet-induced elevations in body weight, reduce accumulation of fat in the liver, and stimulate the breakdown of fat already stored in the fat cells.¹⁹

Summary

While raspberries usually don't receive the same research attention as other popular berries, they possess numerous health benefits that would match any berry. Their potent antioxidants, including ellagitannins and anthocyanins, along with their powerful ability to suppress inflammation make consuming raspberries an effective strategy for easing inflammatory arthritis, combating cancer, preventing diabetes, and enhancing cardiovascular support. ●

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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Raspberries Nutritional Facts, One Cup²⁰

Nutrients	Amount	DV(%)
Vitamin C	32.2 mg	54%
Manganese	0.8 mg	41%
Dietary Fiber	8.0 g	32%
Vitamin K	9.6 mcg	12%
Magnesium	27.1 mg	7%
Folate	25.8 mcg	6%
Copper	0.1 mg	6%

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Enhanced Berry Complete with Açai

Another Breakthrough in Antioxidant Defense!

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

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

ORAC: A Measure of Antioxidant Power

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

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

Why should this matter to you? It's more than a matter of antioxidant potency. In 2010, a team of researchers reported for the first time that **açai**, **blueberry**, and **strawberry** polyphenols may provide targeted support for cellular metabolic processes that promote neural and cognitive health in the aging brain.⁶ But you need the *complete* polyphenolic profile to get the benefit.

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

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



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

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

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To order **Enhanced Berry Complete with Açai**,
call 1-800-544-4440 or visit www.LifeExtension.com

Advanced RESVERATROL Formula

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

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

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

High-Potency Resveratrol with Synergistic Activators

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

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

Trans-Resveratrol	250 mg
Grape-Berry Actives	85 mg
Quercetin	60 mg
Trans-Pterostilbene	0.5 mg
Fisetin	10 mg

Item # 01430



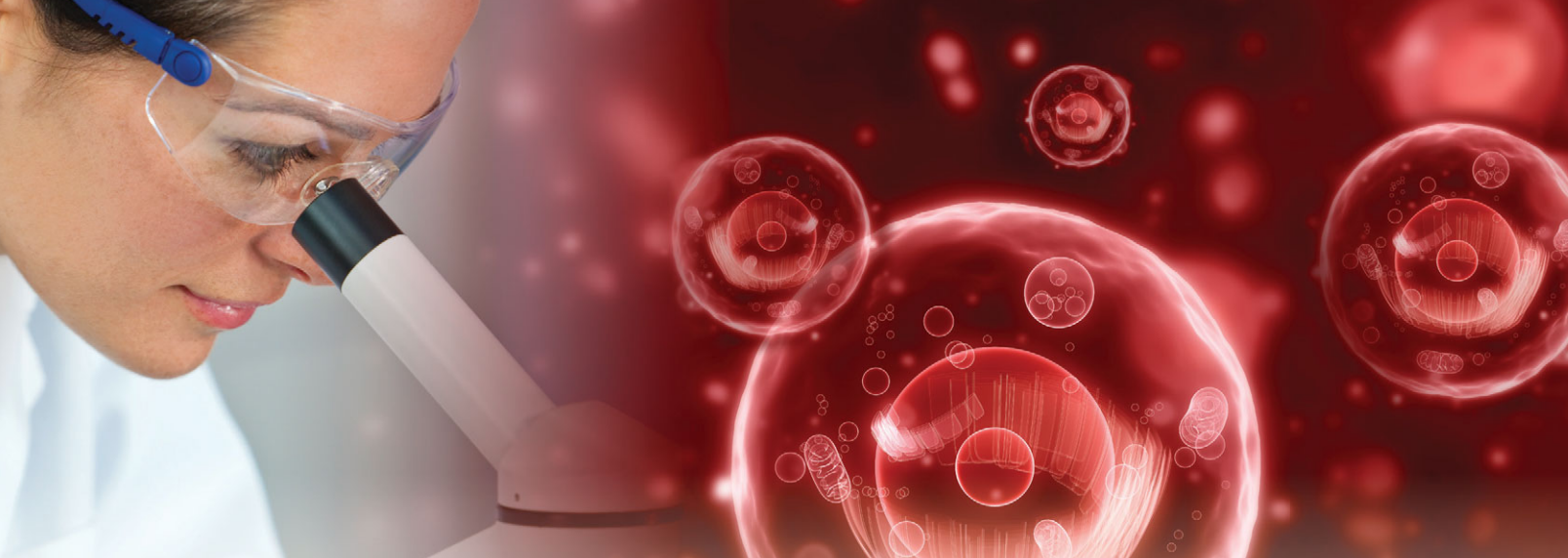
CAUTION: If you are taking anti-coagulant or anti-platelet medications or have a bleeding disorder, consult your healthcare provider before taking this product.

References

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To order Optimized Resveratrol with Synergistic
Grape-Berry Actives, call 1-800-544-4440
or visit www.LifeExtension.com

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



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, the price is reduced to **\$63 per bottle**.

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

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



Item # 01768

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9. Entrez Gene: CREBBP CREB binding protein [Homo sapiens] GeneID: 1387.
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Bio-Enhanced® is a registered trademark of GeroNova Research, Inc. ArginoCarn® is a registered trademark of Sigma-tau HealthScience, and is manufactured exclusively under U.S. production patent 6,703,042 and worldwide production patent EP1202956. The combination of Acetyl-L-Carnitine and Alpha Lipoic Acid is patented by Sigma-tau under U.S. patent 6,365,622. BioPQQ® is a registered trademark of MGC (Japan).

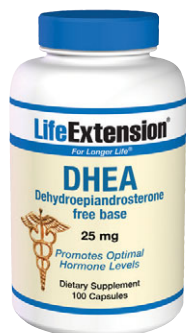
To order Mitochondrial Energy Optimizer with BioPQQ®, call 1-800-544-4440 or visit www.LifeExtension.com

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



Most Popular DHEA Dosages

DHEA is a critically important hormone, but its production declines sharply as we age. Scientists are discovering numerous health benefits when aging people restore their DHEA to youthful ranges. Life Extension offers a wide range of DHEA supplements to satisfy individual needs.



Item #00335

DHEA 25 mg • 100 Capsules

The minimum dose of DHEA for most healthy aging people is 25 mg a day, though optimal doses are often higher in men. These 25 mg capsules are a popular way to consume the precise amount of DHEA your body may need. A bottle containing 100 **25 mg** capsules of **DHEA** retails for \$18; if a member orders four bottles, the price is reduced to **\$11.25 per bottle**.
Contains rice.



Item #00882

DHEA 50 mg • 60 Capsules

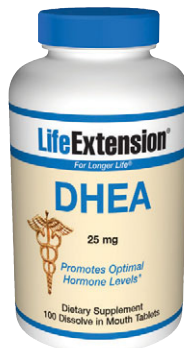
The optimal daily dose of DHEA for most people is 50 mg. These economical 50 mg capsules enable most people to conveniently consume the optimal dose of DHEA in just one capsule. A bottle containing 60 **50 mg** capsules of **DHEA** retails for \$19; if a member orders four bottles, the price is reduced to **\$12.75 per bottle**.



Item #00454

DHEA 15 mg • 100 Capsules

While published studies show the greatest benefit occurs when 50-75 mg of DHEA is consumed each day, some women only need a low dose of DHEA. Just one of these 15 mg capsules a day is all some women need to bring DHEA levels back to youthful levels. A bottle containing 100 **15 mg** capsules of **DHEA** retails for \$14; if a member orders four bottles, the price is reduced to **\$9 per bottle**.



Item #00607

DHEA 25 mg • 100 Dissolve-in-Mouth Tablets

A bottle containing 100 **25 mg dissolve-in-mouth** tablets of **DHEA** retails for \$14; if a member orders four bottles, the price is reduced to **\$8.81 per bottle**.
Some people want to take DHEA in sublingual tablet form to avoid first pass through the liver, though published studies show that swallowing DHEA capsules consistently boosts blood DHEA levels already within normal range.

CAUTION: Do not use DHEA if you are at risk for or have been diagnosed as having any type of hormonal cancer, such as prostate or breast cancer.

To order the DHEA supplement that's right for you,
call 1-800-544-4440 or visit www.LifeExtension.com

Olive Leaf

VASCULAR SUPPORT



Many of the validated benefits of the **Mediterranean diet** derive from heart-healthy compounds contained in the **olive fruit**, including the polyphenols **tyrosol** and **hydroxytyrosol**.¹⁻⁴

When it comes to olive's power to **support blood pressure already within a healthy range**, research shows the bioactive compound **oleuropein**⁵⁻⁸ is primarily responsible.

The problem is that optimal amounts of oleuropein are not found in the fruit. The highest concentrations of oleuropein are contained in the **olive leaf**⁹⁻¹³—a part of the plant that is neither readily available nor commonly consumed.

Oleuropein *normally* degrades during standard food processing. For this reason, **Life Extension®** provides **Olive Leaf Vascular Support**.

Olive Leaf Vascular Support consists of a patented, standardized oleuropein extract using a unique, **gentle-processing** technique.

Researchers using **1,000 mg per day** of this formulation in a double-blind, controlled clinical trial documented an average **11.5-point** (mmHg) decline in *systolic* readings and **4.8-point** drop in *diastolic* readings in just eight weeks.¹⁴

The suggested daily serving of two **500 mg** vegetarian capsules of **Olive Leaf Vascular Support** supplies optimal concentrations of this proprietary, highly stable **oleuropein**, for maximum benefit.

CAUTION: Consult your healthcare provider before taking this product if you are being prescribed anti-hypertensive medication.

A bottle containing **60** vegetarian capsules of **Olive Leaf Vascular Support** retails for \$22. If a member buys four bottles, the price is reduced to **\$15** per bottle.

References

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To order
Olive Leaf Vascular Support
call 1-800-544-4440 or
visit www.LifeExtension.com



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

Five Easy Steps:

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

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

For Our Local Members:

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

Blood Testing The Ultimate Information

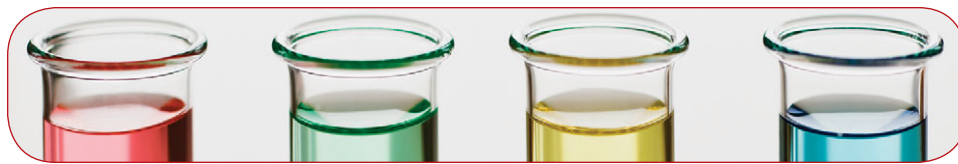
MOST POPULAR PANELS

Life Extension Member Pricing

COMPREHENSIVE PANELS		
MALE LIFE EXTENSION PANEL (LC322582) Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: DHEA-S TSH for thyroid function Estradiol Vitamin D 25- hydroxy Hemoglobin A1c		\$269
FEMALE LIFE EXTENSION PANEL (LC322535) Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: DHEA-S TSH for thyroid function Estradiol Progesterone Hemoglobin A1c		\$269
MALE WEIGHT LOSS PANEL (LCWLM) 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 SHBG Estradiol Free T3 TSH for thyroid function	C-Reactive Protein Homocysteine Free Testosterone Total Testosterone Vitamin D 25- hydroxy PSA (prostate-specific antigen)	\$299
FEMALE WEIGHT LOSS PANEL (LCWLF) 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 Progesterone Estradiol Free T3 TSH for thyroid function	C-Reactive Protein Insulin Free Testosterone Total Testosterone Free T4 SHBG	\$299
MALE HORMONE ADD-ON PANEL (LCADDM)* 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.		\$155
FEMALE HORMONE ADD-ON PANEL (LCADD)* 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.		\$125
LIFE EXTENSION THYROID PANEL (LC304131) TSH, T4, Free T3, Free T4.		\$75
FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		\$299
MALE COMPREHENSIVE HORMONE PANEL* (LC100010) CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.		\$299
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) TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA		\$199
FOOD SAFE ALLERGY TEST** (LCM73001) This test measures delayed (IgG) food allergies for 95 common foods.		\$198
ADRENAL FUNCTION PANEL (LC100021) DHEA-S, AM/PM Cortisol, Glucose, Insulin, Lipid Panel, RBC magnesium		\$136
OMEGA SCORE™*** (LCOMEGA) Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.		\$131.25
MITOCHONDRIAL FUNCTION PANEL* (LC100020) Carnitine (Free with Total), CoQ10, Glucose		\$159
VAP™ TEST* (LC804500) The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. Direct measurements, not estimations, are provided for total cholesterol, LDL, HDL, VLDL, and cholesterol subclasses.		\$90

* 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

<input type="radio"/> ENERGY PROFILE (LC100005) 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.	\$375	<input type="radio"/> HORMONES DHEA-SULFATE (LC004020) This test shows if you are taking the proper amount of DHEA. This test normally costs \$100 or more at commercial laboratories.	\$61
<input type="radio"/> ANEMIA PANEL* (LC100006) CBC/Chemistry Profile (see description), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.	\$86	<input type="radio"/> DIABESITY PANEL* (LC100019) Glucose, Insulin, HbA1c, VAP™, Cortisol, C-Reactive Protein	\$159
<input type="radio"/> INFLAMMATION PANEL (LC100007) CBC/Chemistry Profile (see description above), C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.	\$135	<input type="radio"/> MALE BASIC HORMONE PANEL (LC100012) DHEA-S, Estradiol, Free and Total Testosterone, PSA	\$75
<input type="radio"/> THYROID ANTIBODY PROFILE (LC100004) Thyroid Antithyroglobulin Antibody (ATA) and Thyroid Peroxidase Antibody (TPO).	\$99	<input type="radio"/> FEMALE BASIC HORMONE PANEL (LC100013) DHEA-S, Estradiol, Free and Total Testosterone, Progesterone	\$75
<input type="radio"/> CARDIAC PLUS* (LC100008) CBC/Chemistry profile (see description), Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine.	\$145	<input type="radio"/> DIHYDROTESTOSTERONE (DHT)* (LC500142) Measures serum concentrations of DHT.	\$99
<input type="radio"/> VAP™ PLUS* (LC100009) VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.	\$330	<input type="radio"/> ESTRADIOL (LC004515) For men and women. Determines the proper amount in the body.	\$33
<input type="radio"/> CARDIAC RISK COQ10* (COENZYME Q10) (LC120251) This test is used to check the blood level of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.	\$99	<input type="radio"/> INSULIN FASTING (LC004333) Can predict those at risk of diabetes, obesity, and heart and other diseases.	\$25
<input type="radio"/> Lp-PLA2 (PLAC® TEST) (LC123240) This test is used to aid in predicting risk for coronary heart disease, and ischemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries.	\$125	<input type="radio"/> PREGNENOLONE* (LC140707) Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing's syndrome.	\$116
<input type="radio"/> C-REACTIVE PROTEIN (HIGH-SENSITIVITY) (LC120766) 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.	\$42	<input type="radio"/> PROGESTERONE (LC004317) Primarily for women. Determines the proper amount in the body.	\$55
<input type="radio"/> FIBRINOGEN* (LC001610) High levels of this blood-clotting factor increase the risk of heart attack and stroke.	\$31	<input type="radio"/> SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016) This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens.	\$33
<input type="radio"/> HOMOCYSTEINE (LC706994) 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.	\$64	<input type="radio"/> BONE HEALTH VITAMIN D (25OH) (LC081950) This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.	\$47
<input type="radio"/> MALE HEALTH PSA (PROSTATE-SPECIFIC ANTIGEN) (LC010322) Can provide an early warning sign for prostate disorders and possible cancer.	\$31	<input type="radio"/> OSTEOCALCIN* (LC010249) Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.	\$91
<input type="radio"/> FREE-PSA (INCLUDES TOTAL PSA)* (LC480780) Recommended to determine if an elevated PSA is indicative of prostate cancer.	\$61	<input type="radio"/> DPD CROSS LINK URINE TEST (LC511105) The deoxypyridinoline (DPD) urine test can be used to measure bone re-absorption rates in healthy individuals and in those with enhanced risk of developing metabolic bone diseases. Deoxypyridinoline can be used to monitor therapies (which may include bisphosphonate drugs) in people diagnosed with osteoporosis.	\$79

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) / /

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State

Zip

Phone

Credit Card No.

Expiration Date /

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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

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the continental United States.
Not available in Maryland.**

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

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
CDP Choline Capsules
Cognitex® with NeuroProtection Complex
Cognitex® with Pregnenolone &
NeuroProtection Complex
Cognitex® Basics
DMAE Bitartrate
Ginkgo Biloba Certified Extract™
Huperzine A
Lecithin Granules
Methylcobalamin Lozenges
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
LACTOSOLV™ Long Lasting Digestion
Life Flora™
Natural EsophaGuard
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® Coffee
(Available in mocha, vanilla and decaffeinated)

HAIR CARE

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

HEART HEALTH

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

HERBAL/PHYTO PRODUCTS

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

HORMONES

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

IMMUNE ENHANCEMENT

AHCC® (Active Hexose Correlated Compound)
Black Cumin Seed Oil
Black Cumin Seed Oil w/Bio-Curcumin®
Buffered Vitamin C Powder
Echinacea Extract
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
Zinc Lozenges

INFLAMMATORY REACTIONS

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

LIVER HEALTH

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

MINERALS

Biosil
Bone Restore
Bone Strength Formula w/KoAct®
Bone-Up™
Boron Capsules
Calcium Citrate with D3
Chromium Ultra

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

SKIN CARE

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

SPECIAL PURPOSE FORMULA

Anti-Alcohol Antioxidants w/HepatoProtection Complex
Benfotiamine w/Thiamine
Breast Health Formula
Butterbur Extract w/Standardized Rosmarinic Acid
Chlorella
Chlorophyllin
Green Coffee Extract CoffeeGenic® (also w/Glucose control)
Coriolus Super Strength
CR Mimetic Longevity Formula
Cinsulin® w/InSea2® and Crominex® 3+
European Leg Solution Diosmin 95
Fem Dophilus

Femmenessence MacaPause®
GlycemicPro™ Transglucosidase
Migra-eeze™
Natural Female Support
Organic Total Body Cleanse
Pecta-Sol®
Potassium Iodide
PQQ Caps with BioPQQ®
PteroPure™
Prelox® Natural Sex for Men®
Pyridoxal 5' - Phosphate
Ultra Natural Prostate w/AprèsFlex® and Standardized Lignans

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

Alli® Refill Pack
Advanced Anti-Adipocyte Formula w/AdipoStat & Integra Lean®
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

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
A					
01524	ACETYL-L-CARNITINE - 500 mg, 100 veg. caps	\$34.00	\$25.50		
	Buy 4 bottles, price each	30.00	22.50		
01525	ACETYL-L-CARNITINE ARGINATE - 100 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	50.99	38.24		
01628	ADRENAL ENERGY FORMULA - 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01630	ADRENAL ENERGY FORMULA - 120 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	42.00	31.50		
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	ARTHRONAX® w/THEAFLAVINS & APRESFLEX® - 120 veg. caps	44.00	33.00		
	Buy 4 bottles, price each	40.00	30.00		
01618	ARTHRONAX® 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		
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		
01496	BERRY COMPLETE w/ACAI (ENHANCED) - 60 veg. caps	29.00	21.75		
	Buy 4 bottles, price each	26.00	19.50		

SUB-TOTAL OF COLUMN 1

No.		Retail Each	Member Each	Qty	Total
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		
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		
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		

SUB-TOTAL OF COLUMN 2

No.		Retail Each	Member Each	Qty	Total
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/INSEA® 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		
01697	COGNITEX® w/PREGNENOLONE & NEUROPROTECTION COMPLEX - 90 softgels	74.00	55.50		
	Buy 4 bottles, price each	66.60	49.95		
	Buy 8 bottles, price each	58.89	44.17		
01696	COGNITEX® w/o PREGNENOLONE w/NEUROPROTECTION COMPLEX - 90 softgels	72.00	54.00		
	Buy 4 bottles, price each	64.00	48.00		
	Buy 8 bottles, price each	56.96	42.72		

SUB-TOTAL OF COLUMN 3

No.		Retail Each	Member Each	Qty	Total
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/ L-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/ L-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 FACE CREAM w/COFFEE EXTRACTS - 2 oz jar	65.00	48.75		
	Buy 2 jars, price each	57.00	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		
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		

SUB-TOTAL OF COLUMN 4

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
C CONTINUED					
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		
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		

SUB-TOTAL OF COLUMN 5

NOVEMBER 2013

No.		Retail Each	Member Each	Qty	Total
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		
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		
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		

SUB-TOTAL OF COLUMN 6

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

To order online visit: www.LifeExtension.com

No.		Retail Each	Member Each	Qty	Total
01358	DIGEST RC - 30 tablets Buy 4 boxes, price each	\$19.95 17.00	\$14.96 12.75		
01272	DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
01671	D,L-PHENYLALANINE CAPSULES - 500 mg, 100 veg. caps Buy 4 bottles, price each	18.75 16.00	14.06 12.00		
01540	DMAE BITARTRATE - 150 mg, 200 veg. caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
00059	DMG - 125 mg, 60 tablets Buy 4 boxes, price each	22.80 21.00	17.10 15.75		
01570	DNA PROTECTION FORMULA - 60 veg. caps Buy 4 bottles, price each	34.00 32.00	25.50 24.00		
00544	DOG MIX - 100 grams powder Buy 4 jars, price each	19.50 16.00	14.63 12.00		
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 oz Buy 4 bottles, price each	39.95 32.00	29.96 24.00		
00320	DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 oz Buy 4 bottles, price each	24.95 22.00	18.71 16.50		
00899	DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 oz Buy 4 jars, price each	39.95 38.95	29.96 29.21		
E					
01528	ECHINACEA EXTRACT - 250 mg, 60 veg. caps Buy 4 bottles, price each	\$14.35 12.50	\$10.76 9.38		
01498	ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each	56.00 52.00	42.00 39.00		
00997	ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each	54.00 48.00	40.50 36.00		
00625	EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
01737	ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01042	EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01706	EXTRAORDINARY ENZYMES - 60 caps Buy 4 bottles, price each	26.00 24.00	19.50 18.00		
01514	EYE PRESSURE SUPPORT w/MIRTOGENOL® - 30 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
F					
01054	FACE MASTER® PLATINUM	\$199.00	\$199.00		
00965	FAST-ACTING JOINT FORMULA - 30 caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
01717	FAST-C® w/DIHYDROQUERCETIN - 120 veg. tabs Buy 4 bottles, price each	26.00 24.00	19.50 18.00		
20053	FEM DOPHILUS® - 30 caps	25.95	19.46		
20055	FEM DOPHILUS® - 60 caps	39.95	29.96		
01064	FEMMESENCE MACAPAUZE® - 120 veg. caps	34.99	26.24		
01728	FERNBLOCK® w/RED ORANGE COMPLEX (ENHANCED) - 30 veg. caps Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
01670	FIBER FOOD CAPS - 200 veg. caps Buy 4 bottles, price each Buy 10 bottles, price each	16.00 14.00 13.00	12.00 10.50 9.75		
00718	FIBRINOGEN RESIST™ - 30 veg. caps Buy 4 bottles, price each	49.00 44.00	36.75 33.00		

SUB-TOTAL OF COLUMN 7

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

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
01439	FOLATE (OPTIMIZED) (L-METHYLFOLATE) 1,000 mcg - 100 veg. caps Buy 4 bottles, price each	\$28.00 25.00	\$21.00 18.75		
01641	FOLIC ACID + B12 CAPSULES - 200 veg. caps Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
01544	FORSKOLIN - 10 mg, 60 veg. caps Buy 4 bottles, price each	16.00 14.00	12.00 10.50		
01513	FUCOIDAN w/MARITECH® 926 (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	36.00 33.00	27.00 24.75		
00993	FUCOXANTHIN-SLIM™ - 90 softgels Buy 4 bottles, price each	44.00 39.00	33.00 29.25		
G					
00559	GAMMA E TOCOPHEROL/TOCOTRIENOLS - 60 softgels Buy 4 bottles, price each	\$42.00 37.00	\$31.50 27.75		
00759	GAMMA E TOCOPHEROL w/SESAME LIGNANS - 60 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01394	(OPTIMIZED) GARLIC - 200 veg. caps Buy 4 bottles, price each	24.95 21.00	18.71 15.75		
01301	GH PITUITARY SUPPORT DAY FORMULA - 120 tabs Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01302	GH PITUITARY SUPPORT NIGHT FORMULA - 120 veg. caps Buy 4 bottles, price each	25.00 22.50	18.75 16.88		
01228	GINGER FORCE - 60 softgels	29.95	22.46		
01658	GINKGO BILOBA CERTIFIED EXTRACT™ - 120 mg, 365 veg. caps Buy 2 bottles, price each	46.00 43.50	34.50 32.63		
01648	GINKGO EXTRACT 28/7 (SUPER) - 120 mg, 100 veg. caps Buy 4 bottles, price each	29.00 26.50	21.75 19.88		
00756	GLA WITH SESAME LIGNANS (MEGA) - 60 softgels Buy 4 bottles, price each	19.50 18.00	14.63 13.50		
00345	(L) GLUTAMINE CAPSULES - 500 mg, 100 caps Buy 4 bottles, price each	14.95 13.50	11.21 10.13		
00141	(L)-GLUTAMINE POWDER - 100 grams Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
00522	GLUCOSAMINE/CHONDROITIN CAPSULES - 100 caps Buy 4 bottles, price each	38.00 32.00	28.50 24.00		
01541	GLUTATHIONE, CYSTEINE & C - 100 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00314	L-GLUTATHIONE (MEGA) - 250 mg, 60 caps	39.64	29.73		
01731	GLYCEMICPRO™ TRANSGLUCOSIDASE - 60 veg. caps Buy 4 bottles, price each	48.00 42.00	36.00 31.50		
01669	GLYCINE - 1,000 mg, 100 veg. caps Buy 4 bottles, price each	12.00 10.80	9.00 8.10		
01091	GRAPE EXTRACT w/RESVERATROL (WHOLE) - 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01411	GRAPE SEED EXTRACT w/RESVERATROL & PTEROSTILBENE - 100 mg, 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01604	GREEN COFFEE EXTRACT COFFEEGENIC® - 200 mg, 90 veg. caps Buy 4 bottles, price each	25.00 22.00	18.75 16.50		
01620	GREEN COFFEE EXTRACT COFFEEGENIC® - 400 mg, 90 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
00953	GREEN TEA EXTRACT (MEGA) - lightly caffeinated - 100 veg. caps Buy 4 bottles, price each	30.00 28.00	22.50 21.00		
00954	GREEN TEA EXTRACT (MEGA) - decaffeinated - 100 veg. caps Buy 4 bottles, price each	30.00 28.00	22.50 21.00		

SUB-TOTAL OF COLUMN 8

NOVEMBER 2013

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
H					
01074	5 HTP - 100 mg, 60 caps	\$27.95	\$20.96		
01738	HCA (GARCINIA) - 90 veg. caps	16.00	12.00		
	Buy 4 bottles, price each	14.00	10.50		
01393	HEPATOPRO - 900 mg, 60 softgels	50.00	37.50		
	Buy 4 bottles, price each	46.00	34.50		
01435	HOMOCYSTEINE RESIST - 100 caps	24.00	18.00		
	Buy 4 bottles, price each	21.60	16.20		
01527	HUPERZINE A - 200 mcg, 60 veg caps	40.00	30.00		
	Buy 4 bottles, price each	36.00	27.00		
00661	HYDRODERM ® - 1 oz	79.95	59.96		
	Buy 2 bottles, price each	65.33	49.00		
I					
*01060	i26® HYPERIMMUNE EGG - 140 grams powder	\$54.99	\$46.75		
01704	IMMUNE MODULATOR W/TINOFEND® - 60 veg. caps	17.00	12.75		
	Buy 4 bottles, price each	15.00	11.25		
00955	IMMUNE PROTECT W/PARACTIN® - 30 veg. caps	29.50	22.13		
	Buy 4 bottles, price each	26.55	19.91		
01049	INNERPOWER™ - 555 grams powder	42.00	31.50		
01674	INOSITOL CAPSULES - 1,000 mg, 360 veg. caps	62.00	46.50		
	Buy 4 bottles, price each	58.00	43.50		
01292	INTEGRA-LEAN® AFRICAN MANGO IRVINGIA - 150 mg, 60 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01002	IODORAL® - 180 tabs	50.00	37.50		
01677	IRON PROTEIN PLUS - 300 mg, 100 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	26.00	19.50		
01492	IRVINGIA W/PHASE 3™ - 120 veg. caps	56.00	42.00		
	CALORIE CONTROL COMPLEX (OPTIMIZED AFRICAN MANGO)				
	Buy 4 bottles, price each	48.00	36.00		
J, K					
00056	JARRO-DOPHILUS EPS™ - 60 veg. caps	\$22.95	\$17.21		
01387	JARRO-DOPHILUS ORAL PROBIOTIC GUM - Pom-Berry flavor, 8 pieces	4.95	3.71		
01388	JARRO-DOPHILUS ORAL PROBIOTIC LOZENGE - Pom-Berry flavor, 8 pieces	4.95	3.71		
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		
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		
01755	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		
01757	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		

SUB-TOTAL OF COLUMN 9

NOVEMBER 2013

No.		Retail Each	Member Each	Qty	Total
01754	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		
01756	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		
01765	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		
01767	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		
01764	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		
01766	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	28.00	21.00		
	PARTICLE SIZE - 120 veg. caps				
	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		
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		

SUB-TOTAL OF COLUMN 10

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

To order online visit: www.LifeExtension.com

No.		Retail Each	Member Each	Qty	Total
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		
01522	MILK THISTLE (CERTIFIED EUROPEAN) - 750 mg, 60 veg. caps	34.00	25.50		
	Buy 4 bottles, price each	30.00	22.50		
01517	MILK THISTLE (CERTIFIED EUROPEAN) - 120 veg. caps	52.00	39.00		
	Buy 4 bottles, price each	48.00	36.00		
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		
00984	NATURAL BP MANAGEMENT - 60 tablets	42.00	31.50		
	Buy 4 bottles, price each	37.80	28.35		
00913	NATURAL ESOPHAGUARD - 10 softgels	19.95	14.96		
	Buy 2 boxes, price each	19.00	14.25		
01692	NATURAL ESTROGEN w/POMEGRANATE EXTRACT - 60 caplets	38.00	28.50		
	Buy 4 bottles, price each	33.00	24.75		
01221	NATURAL FEMALE SUPPORT - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
01471	NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
01626	NATURAL SEX FOR WOMEN ® 50+ (ADVANCED) - 90 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	45.33	34.00		
01444	NATURAL SLEEP® - 60 veg. caps	13.00	9.75		
	Buy 4 bottles, price each	10.00	7.50		
01551	NATURAL SLEEP® w/ MELATONIN (ENHANCED) - 30 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
01511	NATURAL SLEEP® w/o MELATONIN (ENHANCED) - 30 caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01445	NATURAL SLEEP® MELATONIN - 5 mg, 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00987	NATURAL STRESS RELIEF - 30 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		

SUB-TOTAL OF COLUMN 11

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

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
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)	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) (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		
01701	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		
01070	ORGANIC TOTAL BODY CLEANSE™ - 14-day supply	34.99	26.24		
P					
00073	PANCREATIN - 500 mg, 50 caps	\$13.22	\$9.92		
01323	PEAK ATP® WITH GLYCO-CARN® - 60 veg. caps	54.00	40.50		
	Buy 4 bottles, price each	50.00	37.50		
00342	PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder	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	PHOSPHATIDYL SERINE 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		

SUB-TOTAL OF COLUMN 12

NOVEMBER 2013

Buyers Club Order Form

To order call: 1.954.766.8433 or 1.800.544.4440

No.		Retail Each	Member Each	Qty	Total
P CONTINUED					
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		
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		
01695	PROSTATE FORMULA W/APRESFLEX® STAND. LIGNANS (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		

SUB-TOTAL OF COLUMN 13

NOVEMBER 2013

No.		Retail Each	Member Each	Qty	Total
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		
01712	RICH REWARDS™ BLACK BEAN VEGETABLE SOUP - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01530	RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01705	RICH REWARDS™ LENTIL VEGETABLE SOUP - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
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		

SUB-TOTAL OF COLUMN 14

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

To order online visit: www.LifeExtension.com

No.		Retail Each	Member Each	Qty	Total
S					
01432	SAFFRON w/SATIREAL (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	11.75	8.81		
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 PHYTCERAMIDES w/LIPOHEAT® - 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		
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		
01408	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		
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		

SUB-TOTAL OF COLUMN 15

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
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		
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		
01716	TWO-PER-DAY - 60 tablets	10.50	7.88		
	Buy 4 bottles, price each	9.50	7.13		
01715	TWO-PER-DAY - 120 tablets	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
01714	TWO-PER-DAY - 120 caps	22.00	16.50		
	Buy 4 bottles, price each	20.00	15.00		
00326	L-TYROSINE - 500 mg, 100 tablets	12.98	9.74		
V					
00213	VANADYL SULFATE - 7.5 mg, 100 tablets	\$15.00	\$11.25		
	Buy 4 bottles, price each	12.50	9.38		
00408	VENOTONE - 60 caps	18.95	14.21		
	Buy 4 bottles, price each	16.00	12.00		
01327	VINPOCETINE - 10 mg, 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	14.00	10.50		
01526	VITAMIN B3 NIACIN - 1,000 mg, 100 veg. caps	12.75	9.56		
	Buy 4 bottles, price each	12.00	9.00		
00372	VITAMIN B3 NIACIN - 500 mg, 100 caps	7.65	5.74		
	Buy 4 bottles, price each	6.65	4.99		
00098	VITAMIN B5 - 500 mg, 100 caps (Pantothenic Acid)	10.50	7.88		
	Buy 4 bottles, price each	9.38	7.04		
01535	VITAMIN B6 - 250 mg, 100 veg. caps	12.50	9.38		
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00361	VITAMIN B12 - 500 mcg, 100 lozenges	8.75	6.56		
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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		

SUB-TOTAL OF COLUMN 16

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V CONTINUED					
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	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		
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		
00061	ZINC LOZENGES - 75 lozenges	9.50	7.13		
	Buy 4 bottles, price each	6.75	5.06		
01051	ZYFLAMEND® WHOLE BODY - 120 softgels	60.95	45.71		

* These products are not 25% off retail price.

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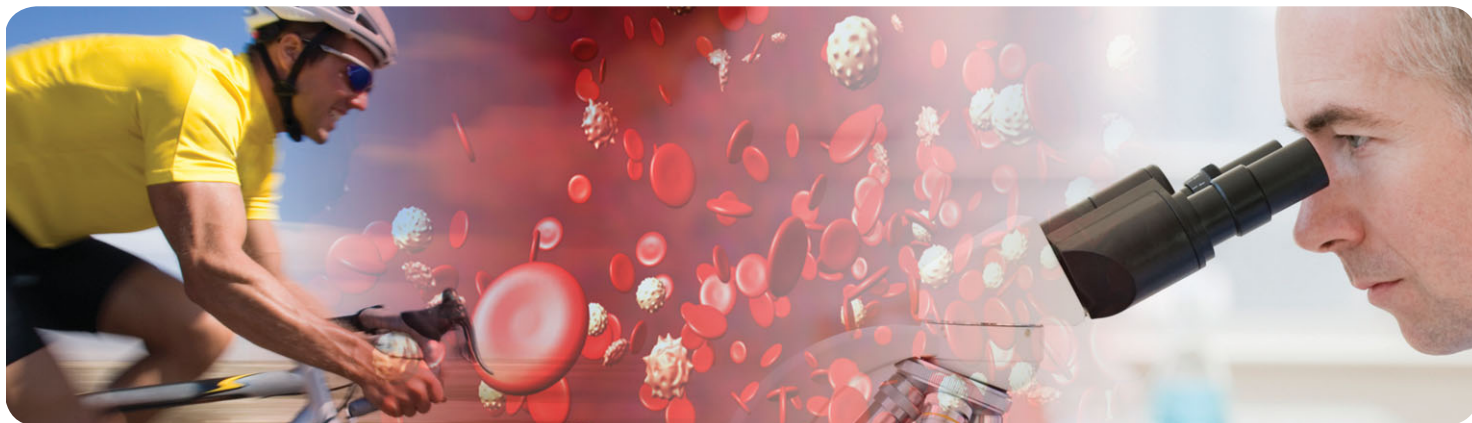
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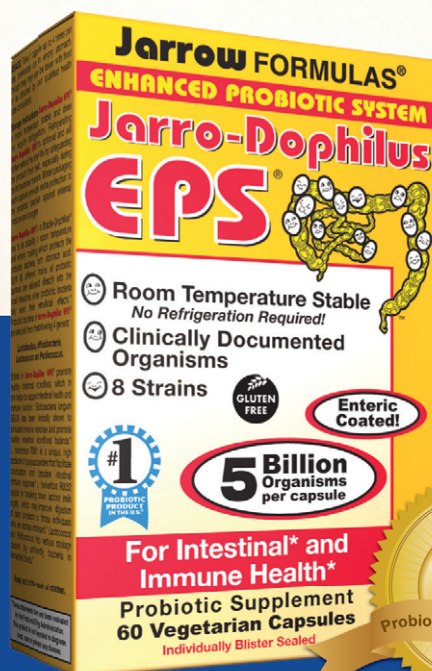
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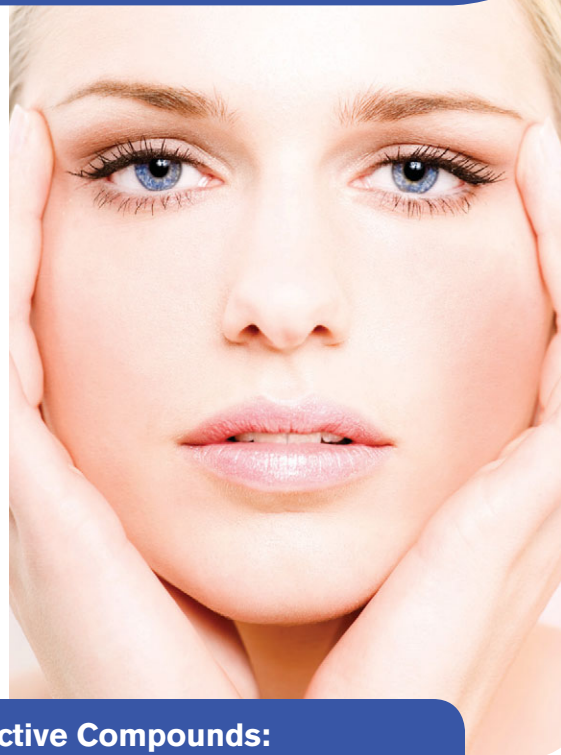
RejuveneX® Factor is a **serum**—a more concentrated format that is thinner than a cream and ensures superior **absorption** of its **28** skin enhancing compounds.

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Rejuvenex® Factor Firming Serum Provides 28 Active Compounds:

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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.

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Glycine soja (soybean) oil: Promotes collagen production and skin elasticity¹¹ and supports UV defense.

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

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ITEM# 01621

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PolyP (sodium polyphosphate): Supports production of collagen.

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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, and helps prevent breakouts.

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

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7 HORMONE THAT MAY PROTECT AGAINST BREAST CANCER

Concern about cancer is why more aging women do not restore their sex hormones to youthful levels. Compelling evidence indicates that **natural progesterone**, along with a healthy diet and nutrients such as **indole-3-carbinol** may slash this risk.



32 NOVEL METHOD BLOCKS ESOPHAGEAL REFLUX

A natural, **raft-forming alginate** can provide **esophageal relief** by blocking reflux of stomach contents into the esophagus...without drugs!



42 SURPRISE FINDINGS IN ESTROGEN DEBATE

An abundance of new studies show profound **life span increases** in women who replace their sex hormones. Naturally restoring hormones to youthful levels reduces disease incidence and results in significant improvements in quality of life.



57 SUZANNE SOMERS FIGHTS BACK AGAINST PREMATURE AGING

Suzanne Somers is a health advocate for women who refuse to accept premature aging. From battling **cancer** to restoring **natural hormone** balance, **Suzanne** has become today's crusader in defending women against degenerative aging.



64 NEW LACTASE COMBATS LACTOSE INTOLERANCE

Lactose intolerance causes a vast array of digestive discomforts. European scientists have developed an **enzyme** formula that restores one's ability to consume dairy products.



84 COFFEE EXTRACTS FIGHT SKIN AGING

Age and ultraviolet radiation cause unsightly alterations to facial skin. Coffee extracts have been shown to reduce fine lines, wrinkles, and **photoaging** damage.