STARTLING LINK BETWEEN BONE INTEGRITY AND OVERALL HEALTH

Exclusive Interview With Dr. Bruce Ames

FDA Claims Walnuts Are Illegal Drugs

Lipoic Acid Reverses Mitochondrial Decay

Plus—
Lung Disease Patients Benefit From Vitamin D
Topical DNA Repair for Youthful Skin
Memory Loss Linked to Metabolic Syndrome
Curcumin is the health-promoting trace compound derived from the Indian spice turmeric. But not all turmeric is alike.

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

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

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

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

In recent studies comparing the effects of standard curcumin against turmeric extracts comparable to Super Bio-Curcumin®, researchers observed:

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

A separate study indicated powerful support for heart health using a comparable extract.

Unrivaled Potency and Absorbability with BCM-95®

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

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

Absorption studies further demonstrate that just one 400 mg vegetarian capsule per day of Super Bio-Curcumin® supplies the equivalent of 2,500-2,800 mg of commercial curcumin supplements.

A bottle containing 60 vegetarian capsules of Super Bio-Curcumin® retails for $38. If a member buys 4 bottles, the price is reduced to only $26.25 per bottle.

Contains rice.

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.

References

To order Super Bio-Curcumin®, 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.
7 FDA SAYS WALNUTS ARE ILLEGAL DRUGS
Life Extension® has published 57 articles documenting the many health benefits of walnuts. When Diamond Foods referenced scientific data detailing these benefits on its website, the FDA classified Diamond’s walnuts as “illegal drugs.” Here we examine the scientific blackout caused by this outrageous bureaucratic act and what you can do to support a bill in Congress that prohibits this kind of police state censorship.

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The exceptional nutritional value of walnuts is universally acknowledged among researchers. From beneficial phenolic acids and tannins to vitamins and omega-3s, the array of nutrients they contain have been shown to prevent cancer, diabetes, and cognitive decline.
Since Life Extension introduced CoQ10 in 1983, our scientists have continued to develop increased potency and absorbability.

Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ contains PrimaVie® shilajit that doubles levels of CoQ10 in the mitochondria.¹

Combining CoQ10 and shilajit produced a 56% increase in cellular energy production in the brain, and in muscle there was a 144% increase in cellular energy production.²

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

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

Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ Combining ubiquinol CoQ10 with shilajit generates a powerful synergy that supports more youthful cellular energy production than CoQ10 alone.²,⁴,⁵

References:

PrimaVie® is a registered trademark of Natreon, Inc. Kaneka QH® is a registered trademark of Kaneka Corporation.
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That Can Save Your Life
Natural Strategies for

Rusell L. Blaylock, MD, is a board-certified neurosurgeon, author, and lecturer. He recently retired from his neurosurgical practice to devote his time to nutritional studies and research. He has written numerous journal articles and three books (Excitotoxins: The Taste That Kills, Health and Nutrition Secrets That Can Save Your Life, and Natural Strategies for the Cancer Patient) and currently publishes a monthly nutrition newsletter, The Blaylock Wellness Report.

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

High-Potency Resveratrol with Synergistic Activators

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

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

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Contains yeast.

Item #01430

References
10. Xenobiotica. 2006 Sep;36(9):857-66

To order Optimized Resveratrol, 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.
Life Extension® has published 57 articles that describe the health benefits of walnuts.

Some of this same scientific data was featured on the website of Diamond Foods, Inc., a distributor of packaged walnuts.

Last year the FDA determined that walnuts sold by Diamond Foods cannot be legally marketed because the walnuts “are not generally recognized as safe and effective” for the medical conditions referenced on Diamond Foods’s website.

According to the FDA, these walnuts were classified as “drugs” and the “Unauthorized health claims” cause them to become “misbranded,” thus subjecting them to government “seizure or injunction.”

Diamond Foods capitulated and removed statements about the health benefits of walnuts from its website.

Let’s take a look at the science supporting the consumption of walnuts to see what the FDA censored…and what you can do to stop it in the future!
Ingesting nuts used to be considered unhealthy because of their high fat content. This misconception has changed over the past 18 years as human studies have revealed sharply reduced incidence of heart disease in those who consume walnuts.1-12

Unlike some nuts, walnuts provide a unique blend of polyunsaturated fatty acids (including omega-3s), along with nutrients like gamma-tocopherol that have demonstrated heart health benefits.13-24 The March 4, 1993, issue of the New England Journal of Medicine published the first clinical study showing significant reductions in dangerous LDL and improvement in the lipoprotein profile in response to moderate consumption of walnuts.14 Later studies revealed that walnuts improve endothelial function in ways that are independent of cholesterol reduction.1, 25-27

One study published by the American Heart Association journal Circulation on April 6, 2004, showed a 64% improvement in a measurement of endothelial function when walnuts were substituted for other fats in a Mediterranean diet.1

As most Life Extension members are aware, the underlying cause of atherosclerosis is progressive endothelial dysfunction.28 Walnuts contain a variety of nutrients including arginine, polyphenols, and omega-3s that support the inner arterial lining and guard against abnormal platelet aggregation.2,13,29-31 These favorable biological effects explain why walnut consumption confers protection against coronary artery disease.

The US National Library of Medicine database contains no fewer than 35 peer-reviewed published papers supporting a claim that ingesting walnuts improves vascular health and may reduce heart attack risk.

Excerpt from FDA Letter

“Based on our review, we have concluded that your walnut products are in violation of the Federal Food, Drug, and Cosmetic Act (the Act) and the applicable regulations in Title 21, Code of Federal Regulations (21 CFR).”

“Because of these intended uses, your walnut products are drugs within the meaning of section 201(g)(1)(B) of the Act [21 U.S.C. § 321(g)(B)]. Your walnut products are also new drugs under section 201(p) of the Act [21 U.S.C. § 321(p)] because they are not generally recognized as safe and effective for the above referenced conditions. Therefore, under section 505(a) of the Act [21 U.S.C. § 355(a)], they may not be legally marketed with the above claims in the United States without an approved new drug application.”

“Additionally, your walnut products are offered for conditions that are not amenable to self-diagnosis and treatment by individuals who are not medical practitioners; therefore, adequate directions for use cannot be written so that a layperson can use these drugs safely for their intended purposes. Thus, your walnut products are also misbranded under section 502(f)(1) of the Act, in that the labeling for these drugs fails to bear adequate directions for use [21 U.S.C. § 352(f)(1)].”

This verbiage makes it clear that the FDA does not even consider the underlying science when censoring truthful, non-misleading
health claims. The chilling effect on the ability of consumers to discover lifesaving medical information is a wake-up call for all who recognize the ramifications of this latest act of FDA malfeasance.

**What the FDA Allows You to Hear**

The number of people logging on to the website of Diamond Foods was miniscule. I suspect that before the FDA took this draconian action, hardly anyone even knew this website existed.

What the public hears loud and clear, however, are endless advertisements for artery-clogging junk foods. Fast food chains relentlessly promote their 99-cent double-cheese burger as being bigger than their rivals. These advertisements induce many consumers to salivate for these *toxic calories* that are a contributing cause of coronary artery disease. Yet the FDA does not utter a peep in suggesting that their advertising be curtailed.

On the contrary, the FDA has issued waves of warning letters to companies making foods (pomegranate juice, green tea, and walnuts) that *protect* against atherosclerosis. The FDA is blatantly demanding that these companies stop informing the public about the scientifically validated health benefits these foods provide.

The FDA obviously does not want the public to discover that they can reduce their risk of age-related disease by consuming healthy foods. They prefer consumers only learn about mass-market ed garbage foods that shorten life span by increasing degenerative disease risk.

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**FDA Allows Potato Chips to Be Advertised as “Heart Healthy”**

Frito-Lay® is a subsidiary of the PepsiCo, Inc., makers of Pepsi-Cola. Frito-Lay® sells $12 billion a year of products that include:

- Lays® Potato Chips
- Doritos®
- Tostitos®
- Cheetos®
- Fritos®

You might not associate these mostly-fried snack foods as being good for you, but the FDA has no problem allowing the Frito-Lay® website to state the following:

“Frito-Lay® snacks start with real farm-grown ingredients. You might be surprised at how much good stuff goes into your favorite snack. Good stuff like potatoes, which naturally contain vitamin C and essential minerals. Or corn, one of the world’s most popular grains, packed with thiamin, vitamin B6, and phosphorus—all necessary for healthy bones, teeth, nerves and muscles.

“And it’s not just the obvious ingredients. Our all-natural sunflower, corn and soybean oils contain good polyunsaturated and monounsaturated fats, which help lower total and LDL ‘bad’ cholesterol and maintain HDL ‘good’ cholesterol levels, which can support a healthy heart. Even salt, when eaten in moderation as part of a balanced diet, is essential for the body.”

Wow! Based on what Frito-Lay® is allowed to state, it sounds like we should be living on these snacks. Who would want to ingest walnuts, pomegranate, or green tea (which
For the FDA to allow Frito-Lay® to pretend there are heart benefits to ingesting their unhealthy snack products, while censoring the ability of walnut companies to make scientifically substantiated claims, is tantamount to treason against the health of the American public.

**Don’t Forget the Acrylamides**

When carbohydrate foods are cooked at high temperature (as occurs when potatoes are fried in sunflower oil to make potato chips), a toxic compound called acrylamide is formed.46

According to the National Cancer Institute, “acrylamide is considered to be a mutagen and a probable human carcinogen, based mainly on studies in laboratory animals. Scientists do not yet know with any certainty whether the levels of acrylamide typically found in some foods pose a health risk for humans.”47

In response to these kinds of concerns, the FDA funded a massive study to ascertain the acrylamide content of various foods. The FDA found that potato chips and other fried carbohydrate foods were especially high in acrylamides.48

The FDA, however, has not stopped companies selling high acrylamide–containing fried carbohydrates from promoting these foods as “healthy.”

**Pharmaceutical Companies Benefit From FDA’s Misdeeds**

As the aging population develops coronary atherosclerosis, pharmaceutical companies stand to reap tens of billions of dollars each year in profits. An obstacle standing in their way is scientific evidence showing that a healthy diet can prevent heart disease from developing in many people.

It is thus in the economic interests of pharmaceutical giants that the FDA forcibly censor the ability of companies making heart healthy foods to inform the public of the underlying science. The fewer consumers who know the facts about walnuts, pomegranate, and green tea, the greater the demand will be for expensive cardiac drugs, stents, and coronary bypass procedures.

Once again, the FDA overtly functions to enrich Big Pharma, while the public shoulders the financial burden of today’s health care cost crisis.

In this particular case, however, processed food companies also stand to profit from the FDA’s attacks on healthy foods as competition from walnut growers is stifled.
The reality is that natural foods do not carry high prescription drug price markups, so it would be economically impossible to conduct the same kinds of voluminous clinical studies as pharmaceutical companies do. As readers of this column know, many of the clinical studies the FDA relies on to approve new drugs are fraudulent to begin with. So even if it were feasible to conduct more clinical research on foods and supplements, that still does not guarantee the precise accuracy the FTC is seeking.

In response to independent scientific studies validating the health benefits of walnuts, Diamond Foods made financial investments to educate the public and supply them with walnuts. With one misguided letter issued by the FDA, all of Diamond Foods’s good work was undone.

This kind of bureaucratic tyranny sends a strong signal to the food industry not to innovate in a way that informs the public about foods that protect against disease. While consumers increasingly reach for healthier dietary choices, the federal government wants to deny food companies the ability to convey findings from scientific studies about their products.

Chilling Effect on Innovation

Headquartered in Stockton, California, Diamond Foods is a processor and marketer of nuts, with distribution in over 80% of US supermarkets. Most of Diamond’s 1,700 walnut growers are family farmers with orchards in the heartland of California’s Central Valley. Their association with Diamond guarantees a market for their crops and provides the company with high-quality walnuts.

In response to independent scientific studies validating the health benefits of walnuts, Diamond Foods made financial investments to educate the public and supply them with walnuts. With one misguided letter issued by the FDA, all of Diamond Foods’s good work was undone.

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Companies That Sell Healthy Foods Try to Fight Back

The combined sales of the companies attacked by the FDA are only a fraction of those of food giant Frito-Lay®. Yet some of these companies are fighting back against the FDA’s absurd position...
that it is illegal to disseminate scientific research showing the favorable effects these foods produce in the body. The makers of pomegranate juice, for example, have sued the FTC for censoring their First Amendment right to communicate scientific information to the public.

As a consumer, you should be outraged that disease-promoting foods are protected by the federal government, while nutritious foods are censored. There is no scientific rationale for the FDA to do this. On the contrary, the dangerous foods ubiquitously advertised in the media are replacing cigarettes as the leading killers in modern society.

The federal government is heavily lobbied by companies selling processed foods. As Life Extension revealed long ago, an insidious activity of lobbyists is to incite federal agencies and prosecutors to eliminate free competition in the marketplace.

The simple fact is that walnuts are healthy to eat, while carbohydrates fried in fat are not. The FDA permits companies selling disease-promoting foods to deceive the public, while it suppresses the dissemination of peer-reviewed scientific information about healthy foods.

**Now the Good News...**

On April 5, 2011, a bipartisan bill was introduced into the House of Representatives called the **Free Speech About Science Act** (H.R. 1364). This landmark legislation protects basic free speech rights, ends censorship of science, and enables the natural health products community to share peer-reviewed scientific findings with the public.

The **Free Speech About Science** bill has the potential to transform medical practice by educating the public about the real science behind natural health.

For this very reason, the bill will encounter opposition. It will be opposed by the FDA since it restricts their ability to censor the dissemination of published scientific data. It will be opposed by drug companies fearing competition from natural health approaches based on diet, dietary supplements, and lifestyle.

The public, on the other hand, wants access to credible information they can use to make wise dietary choices. Please don’t let special interests stop this bill.

I ask that each of you log on to our Legislative Action Website (www.lef.org/lac) that enables you to conveniently email and ask your Representative to co-sponsor the **Free Speech About Science Act** (H.R. 1364).

Passage of the **Free Speech About Science Act** will stop federal agencies from squandering tax dollars censoring what you are allowed to learn about health-promoting foods.

Our Legislative Action Website provides you direct contact with your Representative to let them know that you want H.R. 1364 (**Free Speech About Science Act**) enacted into law.

The letter on the right-hand page is what you can easily send to your Representative by logging on to www.lef.org/lac. Those who don’t have Internet access can copy and mail this letter to their Representative in Congress.

For longer life,

William Faloon

“When the people fear their government, there is tyranny; when the government fears the people, there is liberty.”

—Thomas Jefferson
To the Honorable:

Please co-sponsor the Free Speech About Science Act (H.R. 1364).

This is critical because more Americans are taking charge of their personal health—determined to improve their diets and emphasize preventive care in order to stay or get healthy. Consumers are looking for reliable information backed by legitimate scientific research to assist in making informed choices.

But FDA regulations currently prohibit producers of food from referring to any scientific study documenting the potential effect of the substance on a health condition. Violation of this ban can result in the FDA declaring common foods to be “unapproved drugs,” the sale of which is subject to large fines and jail. Even cherry growers have been told by the FDA that they face jail if they link to Harvard and other studies outlining the health benefits of cherries for gout or arthritis pain. The FDA has taken these actions against walnut growers as well.

The Free Speech About Science Act of 2011 provides a limited and carefully targeted change to FDA regulations so that legitimate, peer-reviewed, scientific studies may be referenced by manufacturers and producers without converting a healthy food into an unapproved drug. The bill amends the appropriate sections of current law to allow the flow of legitimate scientific and educational information while still giving the FDA and FTC the right to take action against misleading information and against false and unsubstantiated claims.

The Free Speech About Science Act:

1. Provides a clear definition of the types of research that may be referenced by growers and manufacturers;
2. Ensures that referencing such research does not convert a food or dietary supplement into an “unapproved [and therefore illegal] new drug;”
3. Does not in any way limit FDA and FTC authority to pursue any fraudulent and misleading statements.

All of us, no matter what our party or views about healthcare, are coming to see the importance of preventive care, or preventing illnesses before they start. Diet, dietary supplements, and lifestyle play a large role in prevention. The FDA should be at the forefront of this. Instead, it is blocking producers from giving consumers truthful scientific information about healthy foods.

The FDA responds that cherries and the like should be subjected to the full FDA approval process. But this would cost as much as a billion dollars. With few exceptions, it is not possible for food producers to assume such costs for natural and therefore non-patentable products.

This is the great Catch-22 of contemporary American medicine. The FDA should find a less expensive way to “vet” natural products. Respected university research suggests that in many cases natural products are safer, more efficacious, and of course much cheaper than drugs. In the meantime, we should modify the law to at least let producers cite valid peer-reviewed science.

Please help me gain the information I need to stay healthy; co-sponsor the Free Speech About Science Act (H.R. 1364)!
References


a brand new, clinically validated solution: *Advanced Anti-Adipocyte Formula with AdipoStat.*

*AdipoStat* is the first dietary intervention to support healthy body weight using these innovative approaches. Through multiple pathways, it targets the mechanisms by which fat-storing cells or *adipocytes* become bloated and metabolically dysfunctional.

This widely overlooked cellular condition leads to excess fat accumulations in the belly and throughout your body.

After careful scientific analysis of over 1,000 plant extracts, researchers identified the *two* species included in *AdipoStat* that target adipocytes: *Sphaeranthus indicus* flower (S. indicus) and the *mangosteen* fruit (*Garcinia mangostana*).

Optimal results were shown in studies when these two *plant extracts* were combined.

*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.*
Three Ways to Fight Fat Cell Derangements

AdipoStat functions via the following mechanisms to support healthy body weight:

1. **AdipoStat** targets adipocyte (fat cell) creation.
2. **AdipoStat** impedes adipocyte growth (adipogenesis).
3. **AdipoStat** induces fat in adipocytes to break down (lipolysis).

Success in Clinical Trials

*AdipoStat*’s performance in clinical studies indicates it can safely deliver impressive results.

In a key study, 30 adults with difficulty maintaining healthy body weight ingested **800 mg per day** of *AdipoStat* while following a 2,000-calorie-per-day diet and were asked to walk just 30 minutes five days a week. A group of equal size was given placebo.1 After just eight weeks, the *AdipoStat* group:

- Lost **4.05 inches** of harmful belly fat—2.0 times the placebo group.
- Experienced a **2.05 drop** in body mass index (BMI)—3.9 times over placebo.
- Shed **11.4 pounds** of total body weight—3.7 times over placebo.

These improvements began to emerge after just **14 days**.2

After eight weeks, the *AdipoStat* group saw a noticeable drop in **waist-to-hip ratio**, indicating they experienced **fat loss** in the **abdominal** area, where excess fat mass is associated with serious health issues.

They also exhibited favorably elevated levels of a hormone called **adiponectin**.3 Adiponectin sends command signals that determine how big your fat cells get, how much they break down (lipolysis), and how often they are produced (adipogenesis).4

A second human clinical trial yielded similar results, confirming *AdipoStat*’s beneficial effects.2

The New AdipoStat Formulas

There are two ways you can easily incorporate *AdipoStat* into your daily supplement program.

The first option is to take *AdipoStat* by itself. The daily dose of **one vegetarian capsule** of *Advanced Anti-Adipocyte Formula* taken 30 minutes before each of the two heaviest meals of the day provides:

**AdipoStat** Proprietary Blend ................................................. **800 mg**

(Sphaeranthus indicus extract and 
Garcinia mangostana extract)

The second option enables consumers to obtain the same dose of *AdipoStat* along with the highly popular **Integra-Lean™** (*Irvingia gabonensis*). *Irvingia* operates via additional mechanisms to combat surplus fat storage, including inhibition of **glycerol-3-phosphate dehydrogenase**, an enzyme involved in the conversion of glucose and triglycerides into adipocyte fat storage.

The **Advanced Anti-Adipocyte Formula with AdipoStat and Integra-Lean™** supplies **800 mg** of **AdipoStat** and **300 mg** of proprietary *Irvingia* extract in the same suggested daily serving of **one vegetarian capsule** before each of the two heaviest meals.

Advanced Anti-Adipocyte Formula with AdipoStat

Item # 01510

A bottle containing **60 vegetarian capsules** of **Advanced Anti-Adipocyte Formula with AdipoStat** retails for **$35**. If a member buys four bottles, the price is reduced to just **$24** per bottle.

Advanced Anti-Adipocyte Formula with AdipoStat and Integra-Lean™

African Mango Irvingia

Item # 01509

A bottle containing **60 vegetarian capsules** of **Advanced Anti-Adipocyte Formula with AdipoStat and Integra-Lean™** African Mango Irvingia retails for **$39**. If a member buys four bottles, the price is reduced to just **$27** per bottle.

Integra-Lean™ Irvingia is protected by U.S. Patent No. 7,537,790. Other patents pending.

Advanced Anti-Adipocyte Formula with AdipoStat: 1-800-544-4440

To order either of the new **Advanced Anti-Adipocyte Formulas** call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)
**Critical Importance of Mitochondria**

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

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

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

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

Until recently, the only natural ways for aging individuals to increase the number of mitochondria in their bodies were long-term calorie restriction or exhaustive physical activity—which are difficult or impractical for most people to implement.

PQQ offers a viable alternative.

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

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

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

- **Antioxidant power.** Like CoQ10, PQQ is a highly potent antioxidant. Its extraordinary molecular stability enables it to facilitate thousands of biochemical reactions in the mitochondria without breaking down, for maximum antioxidant and bioenergetic support.\(^5\)

- **Favorably modulates gene expression.** PQQ activates genes that promote formation of new mitochondria— and beneficially interacts with genes directly involved in mitochondrial health. These same genes also support healthy body weight, normal fat and sugar metabolism, and youthful cellular proliferation.\(^6\)

- **Mitochondrial defense.** Mitochondria possess their own DNA, distinct from the DNA contained in the nucleus. Unfortunately, compared to nuclear DNA, mitochondrial DNA is relatively unprotected. PQQ’s antioxidant potency and favorable gene expression profile act to support mitochondrial defense.

Vital Protection for the Aging Heart and Brain

PQQ is an essential nutrient, meaning your body cannot make it on its own. A growing body of research indicates that PQQ’s unique nutritional profile supports heart health and cognitive function— alone and in combination with CoQ10.\(^17,18\) This comes as no surprise, given how much energy these vital organs need.

Research shows that PQQ supports heart cell function in the presence of free radicals and promotes blood flow in heart muscle.\(^19\)

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

References


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.
Large volumes of published scientific findings validate the multiple health benefits of green tea. The active constituents in green tea are polyphenols, with epigallocatechin-3-gallate (EGCG) being the most powerful. The antioxidant activity of EGCG is about 25-100 times more potent than vitamins C and E.

When Life Extension® introduced the first 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 prices charged just five years ago.

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. Each capsule of Mega Green Tea Extract provides more polyphenols than are found in three cups of 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 a 100 vegetarian capsules bottle of Mega Green Tea Extract is $28.

If a member buys four bottles of 725-mg Mega Green Tea Extract capsules, the price is reduced to $19.88 per bottle.

Contains rice.

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

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.
Green Tea Polyphenols Protect and Benefit Skin

A report published in the *Journal of Nutrition* describes protective benefits of green tea polyphenols against ultraviolet light–induced skin damage, as well as an ability to improve skin elasticity and density.*

Sixty women were assigned a green tea beverage or a control beverage daily for twelve weeks. Before the treatment period and at six and twelve weeks, participants received a dose of irradiation to the skin from a solar simulator.

Ultraviolet-induced reddening of the skin was reduced by 16% after six weeks and 25% at 12 weeks compared to pretreatment responses among those who received green tea, indicating increased photoprotection. Skin elasticity, density, hydration, blood flow, and oxygen saturation increased in those who received green tea, while roughness, volume, and scaling declined.

“These observed skin changes were probably an outcome associated with long-term consumption of green tea polyphenols and not likely a transitory response,” the authors note.

**Editor’s note:** The authors remark that, “The mechanisms underlying photoprotective effects of flavonoids in humans have not been elucidated; however, they are efficient antioxidants contributing to photoprotection in plants.”

—D. Dye

* *J Nutr.* 2011 Apr 27.

Apigenin May Help Protect Against Synthetic Hormone Replacement Risk

A flavonoid found in celery, apples, and other plant foods could help decrease the likelihood of developing breast cancer experienced by women using progestins: synthetic hormones which have been associated with increased breast cancer risk.

Salman M. Hyder and colleagues describe their findings in an article published in *Cancer Prevention Research.* They evaluated the effect of apigenin in a rat model of progestin-accelerated mammary cancer in which tumors were induced by the carcinogen DMBA. Three weeks following injection with DMBA, rats received apigenin or a control substance daily for one week, followed by implantation with the progestin medroxyprogesterone acetate or a placebo.

The researchers observed a delay in the development of tumors as well as a reduction in their incidence and multiplicity among animals that received apigenin compared with those that did not receive the compound. Dr. Hyder believes the finding could benefit women who currently use progestins in combination with estrogen as hormone therapy for menopausal symptoms.

**Editor’s note:** Dr. Hyder noted that, “It appears that keeping a minimal level of apigenin in the bloodstream is important to delay the onset of breast cancer that progresses in response to progestins such as MPA. It’s probably a good idea to eat a little parsley and some fruit every day to ensure the minimal amount. However, you can also find this compound in pill supplements in the health food section of many stores.” This study corroborates the carcinogenic effect of synthetic progestin drugs and provides further rationale to use natural progesterone instead.

—D. Dye

* *Cancer Prev Res.* 2011 Apr 19.
IN THE NEWS

Epicatechin Extends Life Span in Fruit Flies and Diabetic Mice

The Journal of Nutrition published the finding of researchers at Virginia Tech University of increased survival in fruit flies and obese diabetic mice that were given epicatechin, a flavonoid compound that occurs in tea and cocoa.*

Five-week-old diabetic mice were divided to receive regular drinking water or water containing epicatechin for 15 weeks. At the end of the study, 50% of the untreated diabetic mice had died, compared with only 8.4% of those that received epicatechin. Treatment with epicatechin was associated with a reduction in aortic vessel and liver degeneration, as well as less liver fat deposition compared to untreated animals.

In another experiment, the researchers gave fruit flies diets that provided varying concentrations of epicatechin or no epicatechin for up to 72 days. Flies that received the three highest concentrations of epicatechin exhibited a significant increase in mean life span.

Editor’s note: Mice that received epicatechin also experienced decreases in low-density lipoprotein cholesterol, insulin-like growth factor-I (IGF-I) and markers of inflammation, as well as increases in skeletal muscle function and liver antioxidant glutathione and superoxide dismutase (one of the body’s antioxidants) activity, all of which are associated with a healthier and longer life span.

Lower Testosterone May Lead to Glucose Intolerance in Men

An article in the journal Endocrinology and Nutrition submitted by the Hospital Universitario Central de Asturias, Ovieda, Spain, studied the relationship between glucose tolerance and plasma testosterone concentrations in men.* The objective of the study was to evaluate circulating levels of total testosterone, SHBG, and bioavailable testosterone in the cohort of the Asturias Study and their association with the degree of glucose tolerance and metabolic syndrome.

The study included the evaluation of 282 men aged 36 to 85 years old with normal concentrations of total testosterone. Serum concentrations of testosterone and bioavailable testosterone were negatively correlated with age, body mass index, waist circumference, blood glucose, glycated hemoglobin levels, and insulin. Serum concentrations of total testosterone, bioavailable testosterone and SHBG were lower in men with glucose intolerance or diabetes than in those with normal glucose tolerance.

The study concluded that men with lower plasma concentrations of total testosterone—even when within the normal range—have an increased risk of glucose intolerance or diabetes, regardless of age and body mass index.

Curcumin Compound Boosts Head and Neck Cancer Therapy

Archives of Otolaryngology—Head and Neck Surgery published the finding of a benefit for a derivative of curcumin, which occurs in the spice turmeric, in the treatment of head and neck cancer with cisplatin, a platinum-based chemotherapeutic drug.* The development of chemotherapy-resistant tumor cells is a major cause of treatment failure in head and neck cancer, resulting in relapse or metastasis.

University of Michigan professor of otolaryngology and pharmacology Thomas Carey, PhD, and his associates evaluated the effects of varying doses of cisplatin or cisplatin combined with the curcumin-derived compound FLLL32 on cisplatin-sensitive and cisplatin-resistant cultured head and neck cancer cell lines. FLLL32 added to a low dose of cisplatin was found to be as effective at inducing programmed cell death in cisplatin-resistant cells as four times as much cisplatin alone.

“With work opens the possibility of using lower, less toxic doses of cisplatin to achieve an equivalent or enhanced tumor kill,” he remarked.

Editor’s note: FLLL32 reduced activation of the protein known as signal transducer and activator of transcription 3 (STAT3), which is elevated in approximately 82% of head and neck cancers and has been associated with cisplatin resistance.

* Endocrinol Nutr 2011 Jan 5.


Review Recommends Bone-Building Nutrients Before Drugs

A review published in the journal *Nutrients* concludes that calcium and vitamin D supplements should be tried before resorting to drugs to help maintain normal bone density. *

For their review, Karen Plawecki and Karen Chapman-Novakofski of the University of Illinois selected 62 human studies conducted over the past decade that evaluated the impact on bone health of calcium and vitamin D from food, calcium and vitamin D from supplements, other bone health-related nutrients, and portfolio diets, such as the DASH and Mediterranean diets. The researchers confirmed a benefit for supplements, food-based interventions and educational strategies on bone health. The findings suggest nutrition therapies as first-line treatments for those at risk of osteoporosis, particularly in light of the side effects associated with pharmaceutical agents used to treat the condition.

“I suspect that many doctors reach for their prescription pads because they believe it’s unlikely that people will change their diets,” Dr. Chapman-Novakofski remarked.

* Editor’s note: Dr. Plawecki, who is the director of the University of Illinois’ dietetics program, recommends adopting a portfolio diet that provides numerous beneficial nutrients, including high amounts of magnesium and potassium in addition to calcium. —D. Dye

Study Reveals That Many Americans Are Not Getting Enough Calcium

The *Journal of the American Dietetic Association* published the conclusion of researchers at Yale University and the University of Connecticut that many older Americans have an insufficient intake of calcium. *

Jane E. Kerstetter, RD, PhD, and her associates analyzed data from 9,475 adults enrolled in the National Health and Nutrition Examination Survey 2003-2006. Dietary interviews ascertained calcium intake from both food and supplements. While total calcium intake increased with age, insufficiency remained prevalent among older adults.

“In light of evidence that energy intake declines with aging, calcium dense foods and calcium supplements become vital factors in maintaining adequate calcium intake across the life span,” Dr. Kerstetter commented. “Encouraging calcium supplementation is an established approach to addressing this issue in the clinical setting—one that needs additional emphasis in order to promote more frequent and sufficient supplementation in meeting adequate intake levels.”

* Editor’s note: Adequate intake of the mineral has been defined by the Institute of Medicine as 1,000 milligrams per day for adults aged 19 to 50 years and 1,200 milligrams per day for those over 50. —D. Dye


Lung Disease Patients Benefit From High-Dose Vitamin D

A new study suggests that among people who have chronic obstructive pulmonary disease (COPD), taking a high-dose supplement of vitamin D may increase their exercise capacity and strength of respiratory muscles. *

The findings, which were presented at the recent American Thoracic Society conference in Denver, show that a monthly dose of 100,000 IU (international units) of vitamin D given to COPD patients showed significant improvements in exercise capacity and respiratory muscle strength compared to a placebo group.

COPD is an affliction suffered mostly by smokers. It is described as chronic inflammation in the small airways of the lung and leads to too much mucous production, excessive fibrous connective tissue development, otherwise known as fibrosis, and degradation of proteins (proteolysis).

The United States government currently recommends 600 IU of vitamin D per day for adults up to age 70 and 800 IU daily for people over 70 years old, which are woefully inadequate doses.

“Low levels of vitamin D in the blood have been related with muscle weakness, a major target for respiratory rehabilitation and increased risk of falls,” said Miek Hornikx from the Katholieke Universiteit Leuven in Belgium.

“These results support the idea that correcting vitamin D deficiency by adding vitamin D supplements to training programs allows COPD patients to achieve better results from rehabilitation, including improvements in muscle strength and exercise capacity,” she added.

* Editor’s note: This study validates the safety and efficacy of roughly 3,333 IU daily of vitamin D. Life Extension has long stated that the recommended amount of vitamin D for adults by the FDA was low. —J. Finkel


IN THE NEWS

Memory Loss Linked to Metabolic Syndrome

Aging humans with indications of the metabolic syndrome, which include high blood pressure, increased fat around the waist, and other risk factors may be more susceptible to succumbing to memory loss, according to a recent study published in the online issue of Neurology, the medical journal of the American Academy of Neurology.

Metabolic syndrome is often defined as having three or more of the following risk factors: high blood sugar and low high-density lipoprotein (HDL), high blood pressure, excess fat around the waist, and higher than normal triglycerides (a type of fat found in the blood).

Seven thousand eighty-seven people age 65 and older from three French cities were used in the study. After initial testing, 16% of the subjects had metabolic syndrome. All the people in the study were given a series of memory and cognitive function tests over two- and four-year periods. The tests included a memory test, a test of visual working memory and a test of word fluency. The results indicated that people who had metabolic syndrome were 20% more likely to have cognitive decline on the memory test than those who did not have metabolic syndrome. Similar negative outcomes were shown with the other tests as well.

—J. Finkel


Johnson & Johnson Settles Bribery Complaint for $70 Million

Big Pharma giant Johnson & Johnson admitted bribing European doctors and agreed to pay $70 million in civil and criminal court, according to a recent article in The New York Times.*

The bribes were so egregious that one copy of an internal company e-mail stated that providing “cash incentives to surgeons is common knowledge in Greece,” and that, were the company to stop paying bribes, “we’d lose 95% of our business by the end of the year.”

Robert Khuzami, director of the Securities and Exchange Commission’s division of enforcement, said that the company tried to hide its activities by “using sham contracts, off-shore companies and slush funds.”

These heinous acts are just the most recent in a string of missteps by Johnson & Johnson, which has issued more than 50 product recalls since the start of last year involving such household brands as Tylenol®, Motrin®, Rolaids®, and Benadryl®. It also recalled two popular hip implants that a recent study suggested might fail soon after surgery in close to half of the patients who received them.

“We are deeply disappointed by the unacceptable conduct that led to these violations,” said William C. Weldon, Johnson and Johnson’s chairman and chief executive, said.

—J. Finkel


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For Life Extension readers who own the Amazon Kindle e-reader, you can now download your favorite magazine to your device and read it on the go. Once you set up your subscription to your Kindle, your Life Extension Kindle Magazine is auto-delivered wirelessly to your device when the physical issue hits the newsstand. Kindle magazines are fully downloaded onto your Kindle so you can read them even when you’re not wirelessly connected. For set-up and ordering information, type in “Life Extension Magazine” in the search engine of the Kindle Store on Amazon.com. You must have a Kindle device to order this product.
When it comes down to it, honesty is all most people really want from the medical field. What works? What doesn’t work? Those are the main questions people want answered. Unfortunately, with Big Pharma money lining the pockets of the FDA with one hand and cutting doctors checks behind the backs of regulators with the other, very few doctors are in a position to offer objective advice about any of the available remedies for traditional deadly diseases. That’s where award-winning health care blogger Julia Schopick’s book *Honest Medicine* comes in.

The book is written in honor of her late husband, Timothy Fisher, who lived fifteen years after having surgery for a brain tumor the size of an orange. The doctors only gave him three years to live, but through Schopick’s tireless research, she and her husband discovered diet changes and supplements that kept Mr. Fisher alive for twelve years beyond his original prognosis.

In Schopick’s own words: “This book is written because of Tim. And this book is written for you and your loved ones. Because I want you to find the potentially lifesaving treatments your doctor probably doesn’t know about—treatments like those that helped Tim live years beyond his doctors’ prognoses—so that you can find them before it’s too late.”

The focus of this book addresses three treatments, all available in the United States, the United Kingdom, and Canada: intravenous alpha-lipoic acid, the ketogenic diet, and low-dose naltrexone. As you’ll see in this book, these treatments have been around for decades and have benefited thousands of patients, from those that are extremely sick to those with chronic, debilitating diseases. In addition, the shocking reality is that these treatments often work for conditions where conventional medicine doesn’t offer successful solutions.

To highlight the success of the treatments she writes about, Schopick shines a light on what she calls “Champions,” or people who have it “as their mission to get the message out about treatments that have saved many, many lives.” As she says, “with all three of these treatments, my heroes would not let people keep dying or get worse by using the standard-of-care treatments their doctors were encouraging them to use.”

In the example of intravenous alpha-lipoic acid, Dr. Burt Berkson writes about his time as the principal FDA investigator for the intravenous use of alpha-lipoic acid (ALA). What did he find? His words are chilling, but will be very familiar to *Life Extension®* readers: “Personally, I also believe that because ALA is effective for many different diseases, no pharmaceutical company wants to go through the expensive clinical trial approval process. In order to make the most money, they want one medication per disease… In other words, alpha-lipoic acid could save lives, but because it was such an inexpensive substance and natural product, it would not make anyone a significant amount of money.”

For those not familiar with the concept of Big Pharma placing profits over saving lives, the above words are a brisk eye-opener. *Honest Medicine* is filled with examples and tales of average people going from passive patients to powerful advocates for their own health. Readers will be hooked as they follow along with the people Schopick has chosen as they discover the overlooked cures that saved their lives, and may one day save yours or a loved one’s.

As we age, structural alterations occur in our joints, leading to painful inflammation, discomfort, and loss of mobility.

**ArthroMax™** is a multi-nutrient formula designed to provide broad-spectrum support for aging joints and cartilage. Based on recent scientific findings, **ArthroMax™** has been improved with higher potencies and an exciting new ingredient.

**ArthroMax™** contains more glucosamine sulfate along with a special Boswellia extract known as 5-LOXIN®. Glucosamine sulfate provides underlying structural foundation for joints, while 5-LOXIN® inhibits the 5-lipoxygenase enzyme, thereby reducing levels of pro-inflammatory leukotriene B4.*

**Key New Ingredient...**
**Black Tea Theaflavins**

Inflammatory reactions are regulated by a series of “cytokines” produced in the body. Normal aging results in an unfavorable balance of these cytokines that contributes to persistent inflammatory conditions. New studies have shown that a special fraction found in black tea suppresses proinflammatory cytokines at the genomic level. Scientists have found that these compounds called theaflavins uniquely down-regulate the expression of genes and cytokines associated with inflammatory conditions.

5-LOXIN® is used under license by P.L. Thomas-Laila Nutra LLC and is registered in the United States and other countries. International Patents Pending.

FruiteX B® and OsteoBoron® are a registered trademark of VDF FutureCeuticals, Inc. U.S. Patent #5,962,049.

**ArthroMax™** formula provides these bioactive theaflavin fractions, along with methylsulfonyl-methane (MSM), which contains sulfur components that are critically important in maintaining comfortable joint function.* **ArthroMax™** also contains FruiteX B® OsteoBoron®, a patented form of boron that is identical to natural plant forms found in food. Considered more bioavailable than other forms of boron, FruiteX B® OsteoBoron® also supports healthy bones and joints.*

Four vegetarian capsules of new **ArthroMax™** with Theaflavins provide the following nutrients in one convenient, joint-protecting formula:

- Black tea theaflavins with TF-2a fraction 440 mg (decaffeinated)
- Glucosamine sulfate 2KCl (from corn) 2000 mg
- MSM (methylsulfonylmethane) 1000 mg
- 5-LOXIN® 100 mg
- Boron 1.5 mg (as patented FruiteX B® OsteoBoron®)

The retail price of a bottle of 120 vegetarian capsules of **ArthroMax™** with Theaflavins is $44. If a member buys four bottles, the price is reduced to only $30 a bottle. Contains corn.

Item #01317

To order **ArthroMax™** with Theaflavins, 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.
Study after study confirms the vital importance of maintaining optimal levels of vitamin D for broad-spectrum health benefits. Research often indicates that a blood level of 50 ng/mL of 25-hydroxyvitamin D is ideal. Because people have individual requirements, Life Extension® has created the largest selection of vitamin D supplements available 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 formula.

Which VITAMIN D is Right for You?

Vitamin D3 1,000 IU
250 capsules
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 this 1,000 IU version. For most people, this 1,000 IU potency is insufficient to attain optimal vitamin D blood levels. For smaller individuals who obtain 2,000-3,000 IU in their multi-nutrient formulas (and children), this potency of vitamin D may be suitable.

Vitamin D3 5,000 IU
60 capsules
Retail: $11
Four-bottle Member Price: $7.43 ea.
For those obtaining 1,000-3,000 IU of vitamin D in their multi-nutrient formulas, this 5,000 IU potency is what most need to achieve optimal vitamin D blood levels.

Vitamin D3 7,000 IU
60 capsules
Retail: $14
Four-bottle Member Price: $9.45 ea.
Some individuals (such as those weighing more than 180 pounds) may require higher potencies of vitamin D. When combined with 1,000-3,000 IU obtained from multi-nutrient formulas, this 7,000 IU vitamin D3 capsule should enable these individuals to attain 25-hydroxyvitamin D blood levels above the desired range of 50 ng/mL.

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

Vitamin D3 Liquid Emulsion 2,000 IU
1 ounce
Retail: $28
Four-bottle Member Price: $18.75 ea.
For those rare individuals who have difficulty absorbing enough vitamin D3 from powdered capsules, this liquid emulsion of vitamin D can be used.

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

CAUTION: Individuals consuming more than 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxyvitamin D measurement. Do not exceed 10,000 IU per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with hypercalcemia (high blood calcium levels). People with kidney disease, certain medical conditions (such as hyperparathyroidism or sarcoidosis), and those who use cardiac glycosides (digoxin) or thiazide diuretics should consult a physician before using supplemental vitamin D. * If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.

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.
Life Extension Two-Per-Day Tablets provide much higher potencies of key nutrients and represent a better value than many commercial brands.

A bottle of 120 Life Extension Two-Per-Day Tablets retails for $18.95. If a member buys four bottles, the price is reduced to $12.75 per bottle. (The retail price for 180 tablets of Centrum® is around $14.)

For many years, Life Extension members had to rely on commercial “one-a-day” supplements that provide very low potencies.

In response to requests for a science-based multi-nutrient, a special formula was compounded to provide the greatest potencies that can fit into two tablets. When compared to conventional “one-a-day” products, Life Extension Two-Per-Day contains up to 50 times more potency!

The box on this page reveals how much more potent the Two-Per-Day formula is compared to the leading commercial multi-vitamin. Few consumers realize that commercial supplements often contain the cheapest form of nutrients that don’t provide optimal benefits. For example, the 30 IU of synthetic vitamin E contained in Centrum® may provide relatively little vitamin E to the bloodstream. The 200 IU of natural vitamin E contained in Two-Per-Day provides about 14 times more vitamin E activity than does Centrum® because natural vitamin E is twice as bioavailable as synthetic.

The following table compares the daily dosage of key nutrients included in both the Life Extension® Two-Per-Day Tablet and Centrum®’s Daily Tablet:

<table>
<thead>
<tr>
<th>SAMPLE INGREDIENT COMPARISON</th>
<th>LIFE EXTENSION TWO-PER-DAY</th>
<th>CENTRUM®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin C</td>
<td>500 mg</td>
<td>60 mg</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>2,000 IU</td>
<td>400 IU</td>
</tr>
<tr>
<td>Vitamin B1</td>
<td>75 mg</td>
<td>1.5 mg</td>
</tr>
<tr>
<td>Vitamin B2</td>
<td>50 mg</td>
<td>1.7 mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>75 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>300 mcg</td>
<td>6 mcg</td>
</tr>
<tr>
<td>Niacin (as niacinamide)</td>
<td>50 mg</td>
<td>20 mg</td>
</tr>
<tr>
<td>Pantothentic acid</td>
<td>100 mg</td>
<td>10 mg</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>200 IU (natural)</td>
<td>30 IU (synthetic)</td>
</tr>
<tr>
<td>Natural Folate</td>
<td>400 mcg</td>
<td>400 mcg</td>
</tr>
<tr>
<td>Zinc</td>
<td>30 mg</td>
<td>11 mg</td>
</tr>
<tr>
<td>Selenium</td>
<td>200 mcg</td>
<td>55 mcg</td>
</tr>
<tr>
<td>Lutein</td>
<td>5 mg</td>
<td>(none)*</td>
</tr>
<tr>
<td>Lycopene</td>
<td>2 mg</td>
<td>(none)*</td>
</tr>
<tr>
<td>Biotin</td>
<td>300 mcg</td>
<td>30 mcg</td>
</tr>
<tr>
<td>Boron</td>
<td>3 mg</td>
<td>75 mcg</td>
</tr>
<tr>
<td>Chromium</td>
<td>200 mcg</td>
<td>35 mcg</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>100 mcg</td>
<td>45 mcg</td>
</tr>
<tr>
<td>Magnesium</td>
<td>100 mg</td>
<td>50 mg</td>
</tr>
<tr>
<td>Manganese</td>
<td>2 mg</td>
<td>2.3 mg</td>
</tr>
<tr>
<td>Iodine</td>
<td>150 mcg</td>
<td>150 mcg</td>
</tr>
<tr>
<td>Potassium</td>
<td>25 mg</td>
<td>80 mg</td>
</tr>
<tr>
<td>Vitamin A (preformed)</td>
<td>500 IU</td>
<td>1,015 IU</td>
</tr>
<tr>
<td>Vitamin A (as beta-carotene)</td>
<td>4,500 IU</td>
<td>2,485 IU</td>
</tr>
<tr>
<td>Choline (as bitartrate)</td>
<td>20 mg</td>
<td>(none)</td>
</tr>
<tr>
<td>Inositol</td>
<td>50 mg</td>
<td>(none)</td>
</tr>
<tr>
<td>PABA</td>
<td>30 mg</td>
<td>(none)</td>
</tr>
<tr>
<td>Calcium</td>
<td>12 mg</td>
<td>200 mg</td>
</tr>
</tbody>
</table>

Compared to Centrum®, Two-Per-Day Tablets provide about:

- 5 times more Vitamin D
- 8 times more Vitamin C
- 7 times more Vitamin E
- 10 times more Biotin
- 40 times more Boron
- 4 times more Selenium
- 37 times more Vitamin B6
- 50 times more Vitamin B1
- 50 times more Vitamin B12
- More than twice as much niacin, zinc, and many other nutrients

Life Extension Two-Per-Day Tablets provide much higher potencies of key nutrients and represent a better value than many commercial brands.

A bottle of 120 Life Extension Two-Per-Day Tablets retails for $18.95. If a member buys four bottles, the price is reduced to $12.75 per bottle. (The retail price for 180 tablets of Centrum® is around $14.)

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

Contains soybeans, rice, and corn.

* Centrum® no longer contains significant amounts of lycopene nor lutein.

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.
Enhanced Night Vision!

**EYE PROTECTION FORMULA**

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

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

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

**Maintain Macular Density**

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

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

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

**Combat “Eye Fatigue”**

Staring at a fixed-distance object such as a computer screen for a long period of time can cause the muscles that focus your eyes (called the ciliary body) to tire or go into spasm. This can result in physical symptoms such as head discomfort, sensitivity to glare, tiredness, soreness, dryness, and blurry vision.

**Super Zeaxanthin** contains a potent dose of **astaxanthin**, a carotenoid found in red algae. Studies show that taking astaxanthin with other carotenoids protects against free radical induced DNA damage, repairs UVA-irradiated cells, and inhibits inflammatory cell infiltration.

Astaxanthin also helps support vascular health within the eye and improves visual acuity. Its fat-soluble nature offers protection to sensitive cells inside the eye.

**Comprehensive Ocular Protection in One Daily Capsule**

The new **Super Zeaxanthin** formula provides natural plant extracts that have been shown to promote healthy eyesight. Just one softgel of **Super Zeaxanthin with Lutein, Meso-Zeaxanthin Plus Astaxanthin and C3G** provides:

- **OptiLut®, Lutein Plus® and MZ®** ..................... 38 mg
- Marigold (*Tagetes erecta*) Extract (flower) [free lutein equivalent 10 mg]
- **Zeaxanthin & Meso-zeaxanthin blend** ............ 3.75 mg
  [micronized zeaxanthin, **OptiLut®, Lutein Plus®** and **MZ®** Marigold Extract (flower)]
- Natural **Astaxanthin** ........................................ 6 mg
  [AstaREAL® and Zanthin® CO2 extracts of *Haematococcus pluvialis* algae]
- **C3G** (Cyanidin-3-glucoside) ....................... 2.2 mg
  [from European black currant (*Ribes nigrum*) extract (fruit)]

The retail price for a bottle containing 60 softgels of **Super Zeaxanthin with Lutein, Meso-zeaxanthin Plus Astaxanthin and C3G** is $42. If a member buys four bottles, the price is reduced to just **$28.50** per bottle.

To order **Super Zeaxanthin with Lutein, Meso-zeaxanthin Plus Astaxanthin and C3G**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com).

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AstaREAL® is a registered trademark of Fuji Chemical Industry Co., Ltd. Zanthin® is a registered trademark of Valensa International, Inc., used under license. U.S. Patent 5,527,533.

References
LIFE EXTENSION® Interview with
DR. BRUCE AMES
Dr. Bruce Ames is devoted to uncovering strategies to reverse the aging process, primarily by identifying the underlying mechanisms of degenerative disease. Best known for his groundbreaking research on the mitochondria, Dr. Ames’s lab was the first to document the synergy of lipoic acid and acetyl-L-carnitine for optimizing mitochondrial function.

Following this work, Dr. Ames recently developed the Triage Theory of Aging. His hypothesis centers on the potentially long-term damage of moderate micronutrient deficiencies, including DNA damage leading to cancer. The scope of his research also includes investigations into the mutagenic causes of cancer.

Dr. Ames has authored over 500 research papers. Currently, Dr. Ames is emeritus professor of biochemistry and molecular biology at the University of California, Berkeley and a senior scientist at Children’s Hospital Oakland Research Institute. In this exclusive interview with Life Extension Magazine®, Dr. Ames discusses some of his major areas of research.
Life Extension: One of your best known accomplishments is research into the field of mitochondrial health. You were one of the main investigators to describe the relationship of youthful mitochondria to longevity and disease prevention. Only recently, the idea of mitochondrial vitality has attracted the interest of scientists and the medical profession as an area worthy of significant research. What made you decide to investigate this particular area?

Bruce Ames: Initially, I was curious about cancer prevention and how mutagens damage the human genome. To me it was obvious that cancer was most likely a degenerative disease of aging. Cancer development dramatically increases with age.

The link between my interest in cancer and mitochondria came together because mitochondria were postulated to be important in aging. A tremendous amount of dangerous metabolism occurs in the body’s mitochondria that, if left unchecked, can lead to a host of degenerative diseases. In addition, a first-rate post-doctoral candidate, Tory Hagen, was enthusiastic about tackling the problem.

Normally, to research such a topic you use mice. The problem is that you don’t want to sit around for three years while the mice get older. Instead, we decided to set up numerous functions in mitochondria that were known to decay with age and that we could measure. For example, with age, mitochondria put out more mutagenic oxidant byproducts which are oxygen radicals. In addition, cardiolipin, a key lipid in mitochondrial membrane, declines. Also, the mitochondrial membrane potential declines. We decided to investigate four different functions known to decay in the mitochondria with age. We were looking to understand and optimize metabolic function to prevent mitochondrial decay.

As we were developing these assays in young and old rats, we came across a paper by some Italian researchers who had fed old rats acetyl-L-carnitine. What they found was that mitochondrial transcription improved. Even though this wasn’t one of our initial assays, we became very interested in trying acetyl-L-carnitine. So we fed it to old rats, and as a result, three of the four functions that decayed with age suddenly became more like those of a young rat. Carnitine declines with age, and when we fed high levels to rats, it seemed to alter a number of factors of aging.

While acetyl-L-carnitine provided a great solution to the three functions, we still needed to solve the fourth assay, the increase in mutagenic oxidants, that was not helped by acetyl-L-carnitine. And so we tried a number of things including all the conventional antioxidants—such as vitamin C and vitamin E—but they didn’t work. Lester Packer, at Berkeley, had been saying for years that lipoic acid, which is a normal mitochondrial metabolite, was a terrific antioxidant. Finally, we tried lipoic acid and it worked! We found that together, carnitine and lipoic acid complemented each other and were actually somewhat synergistic. The end result was that the mitochondria of the aging rats appeared to be more like mitochondria of young rats. Jiankang Liu and I had shown that the cognition in these old rats gets better and also in dogs when they are fed these substances. We also have some preliminary evidence that it works in people as well.
**Life Extension:** The implications of mitochondrial health permeate every aspect of our systemic well-being.

**Bruce Ames:** Yes, we have enough evidence to demonstrate that mitochondrial decay can contribute to degenerative diseases, including cancer and neurological decline, that are all associated with aging. The impact of mitochondrial decay is far-reaching. Old mitochondria generate increased amounts of mutagenic by-products along with decreased membrane potential and cellular oxygen consumption. All of this decline cascades into DNA and RNA damage and into cells, tissues, and eventually the organs. Our inability to produce ATP as we did when we were younger is also a result of aging mitochondria.

**Life Extension:** The combination of acetyl-L-carnitine and lipoic acid have been cited in the literature as effective caloric restriction mimetics.

**Bruce Ames:** The work on that concept was done by Tomas Prolla in Wisconsin. Tom had been looking at the array of proteins that get turned on and how they change with age. He was also investigating what changes occur with calorie restriction, which is known to prolong life span. When he looked for small molecules that mimicked the changes created by caloric restriction, he found that both acetyl-L-carnitine and lipoic acid are good mimics. However, one is more effective in the heart and one is more effective in the brain. We were happy with his paper, because it reinforced all our evidence on acetyl-L-carnitine and lipoic acid.

**Life Extension:** Another area of your research has been the Triage Theory that posits that moderate deficiencies of one of the 40 essential nutrients may lead to DNA damage.

**Bruce Ames:** Correct. It's based on a simple analogy. The term “triage” is borrowed from the field of urgent medical care. Triage means deciding which patients to treat when faced with limited resources. When presented with more patients than there are resources to treat them all at the same time, doctors must decide which patients to treat first based on the severity of their condition.

So the patient in cardiac arrest comes first, followed by the patient with a hemorrhaging wound in need of stitches, then the patient with severe influenza, and so on. This provides the best chance for all the patients to survive.

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**The Importance of Multivitamins**

As this article was going to press, the prestigious *Journal of the Federation of American Societies for Experimental Biology (FASEB J)* published an article authored by Bruce Ames that supports the fundamental philosophy to health and longevity that Life Extension® has promoted for thirty years.

The article builds upon Dr. Ames’s Triage Theory of optimal nutrition, which states that the human body prioritizes the use of vitamins and minerals when it is getting an insufficient amount to keep functioning. While short-term deficiencies are common, they are often not taken seriously by mainstream physicians. Dr. Ames’s research may change all that, as his paper shows how bodily insults accumulated over time as a result of vitamin and mineral loss can lead directly to age-related diseases.

“Understanding how best to define and measure optimum nutrition will make the application of new technologies to allow each person to optimize their own nutrition a much more realistic possibility than it is today,” said Joyce C. McCann, PhD, a co-author of the study from the Nutrition and Metabolism Center at Children’s Hospital Oakland Research Institute in Oakland, California. “If the principles of the theory, as demonstrated for vitamin K and selenium, can be generalized to other vitamins and minerals, this may provide the foundation needed.”

Echoing the importance of this research, Gerald Weissmann, MD, Editor-in-Chief of the *FASEB Journal* said, “This paper should settle any debate about the importance of taking a good, complete, multivitamin every day. As this report shows, taking a multivitamin that contains selenium is a good way to prevent deficiencies that, over time, can cause harm in ways that we are just beginning to understand.”
Our bodies evolved to do pretty much the same thing. Faced with limited nutritional resources, the human physiology must “decide” which biological functions to prioritize in order to give the total organism—and the species—the best chance to survive and reproduce.

My work suggests that if you’re even modestly deficient in one of the essential micronutrients, your body has to “ration” them in terms of priority. Under this scenario, the body will always direct nutrients toward short-term health and reproductive capability—and away from regulation and repair of cellular DNA and proteins that increase longevity.

This means that while your body may be providing nutritional support in an effort to sustain system-wide physiological function and reproduction, at the cellular level, the process of decay and death is accelerating.

Now let’s look at how this plays out in real-world dietary terms.

To run your metabolism you need the basic macronutrients of fuel, fats, and carbohydrates. But you also need 15 or so vitamins that are co-enzymes and 15 or so minerals that are required in enzymes, and then you need two essential fatty acids, omega-3 and omega-6, and then there are seven or eight essential amino acids, so all together, it’s roughly 40 substances. Virtually every metabolic pathway requires micronutrients. Deficiencies in these micronutrients may not be severe enough to create immediate clinical symptoms, but the long-range implications could lead to an increased risk of diseases associated with aging.

Practically every American is deficient at some level of these nutrients because of our bad diet.

My goal was to explore what could be done in terms of diet to avoid these diseases of aging. The thing that got me going on this was a guy named Jim MacGregor, a scientist who came to my lab on sabbatical. His research had just shown that folic acid deficiency in mice broke chromosomes, just like radiation. He took the experiments further and showed that folic acid deficiency broke chromosomes in people as well, which was quite alarming. According to his research, this was occurring in about 10% of the US population and about half of those that are poor: A significant portion of the American population is experiencing critical DNA damage without realizing it. Very simply, if you don’t eat whole grains or your greens, or take a supplement, it’s like getting irradiated.

Based on this idea, we began to look in the literature and doing experiments. Whenever we made human cells in culture a little deficient in a vitamin or mineral, we started getting DNA damage. I realized that this was an overlooked area of research. It was this fundamental observation that led me to the Triage Theory.

Life Extension: You and Dr. Joyce McCann have done some interesting work on vitamin K. Life Extension readers have been following the latest research on all the benefits of vitamin K with regard to heart disease and cancer.

Bruce Ames: Vitamin K is not a single vitamin but rather a collection of structurally related molecules from different sources. There are K1, MK-4, and MK-7, all with different benefits for the body. We looked at how vitamin K could be used to prevent age-related conditions such as bone fragility, arterial and kidney calcification, cardiovascular disease, and even cancer. In Germany, where vitamin K was discovered, it is known as the “Koagulation” vitamin because it factors so heavily in blood clotting. However, the coagulation factors originate in the liver while other forms of vitamin K are sent to the other tissues in the body. We are beginning to see interesting studies concerning vitamin K deficiencies and mortality from coronary heart disease.

In the United States, the population tends to be fairly low with regards to vitamin K intake, largely due to the fact that we do not consume sufficient greens. In
Japan, people obtain healthy amounts of MK-7 from a soy product called natto. We believe that natto consumption may be responsible for the decreased risks of fractures and bone loss among Japanese women. Additionally, natto may be responsible for the lower prevalence of atherosclerosis in Japan.

**Life Extension:** Additionally, those people taking vitamin K antagonists such as warfarin (Coumadin®) to prevent strokes are experiencing serious vitamin K deficiencies and are at increased risk for osteoporosis and calcification of their arteries.

**Bruce Ames:** Exactly. There are estimates that more than 30 million prescriptions for warfarin are written each year. Long-term warfarin therapy is linked to increased arterial calcification and bone loss. Additionally, there are observational studies that report associations between aortic valve calcification and long-term anticoagulant therapy. Coumadin® blocks the biosynthesis of MK-4 from vitamin K1.

**Life Extension:** How does this very basic information about the importance of vitamin K for people taking warfarin get into the hands of doctors prescribing the drug and for patients taking the drug? It seems pretty basic… you’re taking a drug that has a range of highly detrimental side effects. By taking a simple vitamin you can protect your skeletal system and limit atherosclerotic progression.

**Bruce Ames:** Most doctors don’t know anything about nutrition and have completely abdicated. Medicine is almost useless as far as nutrition goes. The only people interested in nutrition are those alternative medicine docs. When I go to the alternative medicine doc conventions, I’m treated like a rock star: They’ve read all my papers and are passionately into nutrition and preventive medicine.

**Life Extension:** Based on many facets of your research, if humans ingest optimal levels of nutrients from carnitine and lipoic acid to vitamin K, they could postpone degenerative diseases such as diabetes, cancer, and heart disease in addition to delaying the ravages of aging. As a result of strong nutritional practices and interventions, the doctors might be a little less busy.

**Bruce Ames:** There will always be a need for doctors. Everybody is going to die of something, we’re just extending the time frame. I’m a firm believer in preventive medicine—it’s much cheaper and you cut out expensive doctors, tests, procedures, and medications. Within about ten years, you’re going to put your finger in a machine, it’ll take a finger prick of blood and you will compare your numbers with some schedule on the Internet and you won’t need a doctor in most instances. Our analytic methods are improving in sensitivity and range every day.

**Life Extension:** Speaking of people dying, the incidence of obesity is astonishing. It simply did not exist in these proportions 20–30 years ago. Many doctors bemoan the fact that this is the first generation that the parents will outlive the children. Any thoughts?

**Bruce Ames:** Obese people are hungry all the time because the body is craving missing nutrients such as magnesium. Sixty percent of the American population is too low in magnesium. Instead of whole grains and vegetables, Americans are filling up with junk and are wildly deficient in vitamins and minerals. Even though people are obese and look like they are well fed, they are basically starving for vitamins and minerals.

According to a colleague of mine, Americans aren’t getting enough fiber especially because they need to eat more vegetables and whole grains. On top of which people are consuming vast amounts of simple sugars, which can poke holes in your gut. Bacteria are leaking through, triggering inflammation. The purpose of a balanced diet is to get all your vitamins and minerals, and we’re not doing that. We’re eating calorie-rich refined foods, and what we should be doing is eating more fruits and vegetables, more fish, more whole grains, less red meat, all the things your Mom told you about, and then we’ll be fine.

**Life Extension:** You’ve done a lot of work in cancer research. What, in your estimation, are the key factors for preventing cancer?

**Bruce Ames:** Eat a good diet. And then don’t smoke, because smoking takes about 8 or 10 years off your life. And I think bad diets are probably another 8 or 10 years off your life, though we don’t know the exact number. But I suspect it’s going to be even worse than smoking. And the costs are huge. You have to convince people that they’re going to lead miserable lives if they get fat, have years suffering from diabetes and their brain will be all fogged. The choice seems obvious to me.

**Life Extension:** Dr. Ames, many thanks for all your good work. We all benefit from your innovative research.
Maintaining healthy testosterone levels is one of the most important steps you can take to regain your health and improve your performance. With research showing that by the time a man is 60 years old, he may produce 60% less testosterone than he did in his 20s, the time is now to add Life Extension’s Super MiraForte with Standardized Lignans to your supplement regimen.

Each daily dose of Super MiraForte contains the following testosterone supporting ingredients:

- 1500 mg Chrysin
- 15 mg Bioperine®
- 850 mg Muira puama
- 282 mg Nettle root
- 50 mg Ginger root
- 15 mg Chelated elemental zinc
- 320 mg Maca
- 33.4 mg HMRlignan™ Norway Spruce lignan extract

The retail price for a bottle of 120 capsules of Super MiraForte with Standardized Lignans is $62. If a member buys four bottles, the price is reduced to $42 per bottle.

To order Super MiraForte 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.
Mitochondrial Basics

with BioPQQ™

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

Behind every process your body needs to survive and thrive are the cellular energy generators known as mitochondria. Their function is so crucial that a growing number of scientists now believe mitochondrial longevity may determine overall longevity in aging humans.2-5 That’s why Life Extension® has remained at the forefront in identifying innovative compounds that specifically support mitochondrial health.

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

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

Three Premium Compounds in One Low-Cost Formula

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

1. PQO. This breakthrough micronutrient has recently been shown to trigger mitochondrial biogenesis—the growth of new mitochondria in aging cells.” PQO also activates genes involved in protecting the delicate structures within the mitochondria.7-10

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

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

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

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

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

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

BioPQQ™ is a trademark of MGC (Japan). Bio-Enhanced® is a registered trademark of Geronova Research, Inc. ArginoCarn® is a registered trademark of Sigma-tau Health Sciences, Inc. and is protected by US patents 6,365,622, US 6,703,042, and EP 1202956.

References
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.
Lipoic Acid Reverses Mitochondrial Decay
It is estimated that 85% of the oxygen contained in every breath you take is consumed by the mitochondria within each cell of your body.¹

The decay of these energy-producing powerhouses in turn lies at the core of most age-related pathologies. In experimental models examining the mitochondrial theory of aging, it has been shown that cells microinjected with mitochondria isolated from old animals degenerate far more rapidly than those microinjected with mitochondria from young animals.²

The good news is that when supplied with a nutrient regimen that includes lipoic acid, a profound regeneration is observed in similar animal models,³ including improved metabolic function and a marked decline in oxidative stress.

In this article, the recent data on lipoic acid’s multimodal power to combat a host of age-related diseases is detailed. You will learn how it may help prevent cardiovascular disease, obesity, diabetes, neurodegenerative disorders, and cancer. You will also learn of drug company efforts to produce high-cost, synthetic forms of lipoic acid to capitalize on its unique health-promoting properties at your expense. > >
Lipoic acid also suppresses production of inflammatory cell-signaling molecules, while increasing production of molecules involved in vascular tone, such as endothelial nitric oxide synthase (eNOS).\textsuperscript{18,19} Owing to its pronounced power to combat mitochondrial aging, behemoth pharmaceutical companies are now attempting to manipulate its molecular structure and render it patentable.\textsuperscript{20} Such drugs include more complex molecules in which lipoic acid is “conjugated,” or chemically joined, to form hybrid compounds with additional biological characteristics. This would allow drug manufacturers to make absurd claims of superior benefit for their artificial, synthetic lipoic acid products. The result would be needless additional cost for what is already a proven multi-modal nutrient.

Lipoic acid in the biologically active “R” form (see sidebar on page 42) is readily available without a prescription and affordable.

**Cardiovascular Defense**

Lipoic acid’s powerful antioxidant, anti-inflammatory, and lipid-lowering capabilities make it an ideal, multi-targeted nutrient for reducing cardiovascular risk.\textsuperscript{23,24} Lipoic acid helps protect the endothelium, the delicate, one-cell-thick lining of blood vessels.
Additionally, lipoic acid improves blood vessels’ ability to relax, helping to lower blood pressure, improve blood flow, and reduce risk for cardiovascular events such as heart attack and stroke.\textsuperscript{25-28} Better blood flow in legs can also mean reduced pain with prolonged walking or other exercise.\textsuperscript{29}

Cardiac surgeons are now beginning to recommend lipoic acid, along with other antioxidants such as CoQ10, prior to surgery in order to protect delicate blood vessels during surgery. Improved physical and mental quality of life in such patients has been reported to last for more than a month after the surgery.\textsuperscript{30}

You can use lipoic acid to help lower your risk for cardiovascular disease long before you need cardiac surgery, though. Lipoic acid lowers total cholesterol and low-density lipoprotein (LDL) levels and reduces the size and number of atherosclerotic plaques, the dangerous points of arterial narrowing that produce heart attacks and strokes.\textsuperscript{23,24,28,31} In addition, lipoic acid may also lower levels of certain cellular toxins that contribute to cardiovascular diseases, especially those related to diabetes.\textsuperscript{32,33}

Even people with pre-existing heart disease can benefit from lipoic acid. Cardiac stents, intended to improve blood flow following a heart attack, can become blocked by formation of unwanted new tissue, an effect that is prevented by lipoic acid supplementation.\textsuperscript{34} And, lipoic acid prevents death of heart cells exposed to high blood sugar levels, a contributor to diabetic heart disease.\textsuperscript{35}

**Targeting Obesity**

Lipoic acid has beneficial effects on the forces that cause us to gain weight and store excess fat. It works on brain areas to reduce appetite, food intake, and body weight.\textsuperscript{36-39} Lipoic acid also stimulates increased energy expenditure, burning excess calories by activating cellular energy signaling complexes.\textsuperscript{13,36}

Overweight and obese people lose their normal sensitivity to insulin, resulting in ever-higher levels of blood sugar and advanced glycation end product–induced tissue damage. Lipoic acid improves insulin sensitivity and stimulates sugar uptake from the blood to help normalize sugar levels.\textsuperscript{40-43} In the liver, lipoic acid decreases fat production and accumulation, helping to prevent development of dangerous non-alcoholic fatty liver disease (NAFLD).\textsuperscript{44,45}

Lipoic acid has been successfully used in patients taking medications that stimulate weight gain, such as antipsychotic drugs.\textsuperscript{46} Even in people who are only overweight (not yet obese), lipoic acid reduced body weight by 8\% while shrinking waist size by more than...
2 inches. In patients who are already obese, there was a 9% loss of weight and a decrease in waist size of more than 3 inches.

**An Anti-Diabetic**

Lipoic acid has an important role in managing diabetes, particularly the massive oxidative and inflammatory changes the disease produces. The benefits of lipoic acid include promoting insulin sensitivity and glucose uptake. Diabetics are at increased risk for the kinds of cardiovascular problems that lipoic acid can prevent, including accumulation of cellular toxins. By protecting against endothelial damage, lipoic acid reduces the threat of diabetic vascular and kidney complications.

Lipoic acid is proving to be especially effective at preventing the painful and debilitating condition known as diabetic neuropathy, an almost inevitable complication in people with poor blood sugar control. Diabetic neuropathy begins with pain, burning, and/or stabbing sensations in the extremities. In more advanced stages of this condition, the pain disappears as severe damage is done to microscopic blood vessels. Ultimately the loss of nerve function can lead to open sores, infections, and even amputations. Despite considerable knowledge about how diabetic neuropathy arises, no drug treatment has yet proved effective in preventing or reversing the condition.

Lipoic acid’s powerful antioxidant actions limit damage to the lining and blood supply of nerves, helping to reduce both symptoms and nerve dysfunction. Clinical studies have uniformly demonstrated improvements in pain, numbness, and stinging, while also improving nerve conduction velocity, a measure of how efficiently nerves transmit electrical impulses. Studies have shown that lipoic acid produces significant improvements when administered for 3 weeks, and longer studies have shown sustained effects.

It's essential to start early with optimal levels of lipoic acid to prevent diabetic neuropathy. People with good blood sugar control and younger patients do better, as do women, and thinner patients in general. While doses of up to 1,800 mg/day are well-tolerated, 600 mg/day of alpha-lipoic acid seems to produce the best results in those with diabetes. This translates into a 300 mg dose of R-lipoic acid to obtain the same biological activity.

**Protection from Brain Cell Degeneration**

Lipoic acid protects brain tissue from the long-term effects of advanced glycation end products and the resulting inflammation and oxidative damage, conditions that lead to neurodegenerative diseases like Alzheimer’s disease. A hallmark of Alzheimer’s disease is the formation of an abnormal protein called amyloid-beta, the result of chronic inflammation and a producer of increased oxidative stress. Lipoic acid reduces amyloid-beta-induced inflammation.
and improves brain cells’ production of the chemical signaling molecules called neurotransmitters. Mitochondrial function is significantly impaired in the brains of Alzheimer’s and Parkinson’s disease patients and lipoic acid decreases mitochondrial oxidant stress in those cells.

These effects work together with other nutrients like acetyl-L-carnitine, docosahexaenoic acid (DHA), phosphatidylserine (PS), and glyceryl-phosphoryl-choline (GPC) to improve cognitive performance. Research has shown that lipoic acid prevents cell death in the brain regions most affected in Parkinson’s disease. These findings are both good news and important reminders of the need to incorporate lipoic acid early, before symptoms progress in these chronic, debilitating diseases. Lipoic acid may also have an important role in preventing the immune over-response that causes multiple sclerosis, another chronic, progressive brain disease.

By increasing antioxidant capacity, scavenging free radicals, reducing lipid peroxidation, and enhancing energy utilization, lipoic acid may also minimize the damage produced by brain trauma. Lipoic acid has shown benefit in preventing trauma-related injuries to the brain, spinal cord, and even peripheral nerves, all of which are vulnerable following a major accident.

**Anti-Cancer Mechanisms**

Cancer scientists are growing increasingly interested in lipoic acid because cancer cells offer many targets for its anti-inflammatory attributes. These attributes allow lipoic acid to intervene at multiple points in the chain of carcinogenesis. In experimental studies, lipoic acid shows promise against cancers of the blood (leukemia), lung, breast, and liver. Preliminary research indicates that lipoic acid acts to halt the cell reproductive cycle of cancer cells, slowing or stopping tumor growth. Lipoic acid may also help induce apoptosis, the programmed cell death that is the body’s natural control mechanism for weeding out nascent cancers. Lipoic acid also protects against chemical-induced DNA damage that can lead to cancerous transformation. Lipoic acid may help prevent metastatic cancer spread by reducing activity of enzymes that tumors use to invade tissues. Finally, in those unfortunate enough to require chemotherapy to treat an existing cancer, lipoic acid can afford powerful protection against some of the side effects, such as diarrhea, intestinal cramping, and ulcers, thanks to its antioxidant capabilities.
Lipoic Acid: Research Update

An abundance of recently published studies reveals a wide range of new findings about lipoic acid:

- **Weight loss support.** Overweight or obese individuals who received 1,800 mg of alpha lipoic acid daily for 20 weeks lost more weight than those who did not receive lipoic acid. This translates into 900 mg of the biologically active R-lipoic acid.

- **Migraine prevention.** Individuals with frequent or poorly controlled migraine attacks who consumed lipoic acid each day displayed a trend toward fewer migraines. These findings build on earlier research suggesting a role for lipoic acid in migraine prevention.

- **Improving endothelial function.** Impaired glucose tolerance contributes to endothelial function, an underlying cause of cardiovascular disease. When lipoic acid was administered to individuals with newly diagnosed impaired fasting glucose, endothelial function improved, as did a marker of oxidative stress.

- **Benefits for polycystic ovary syndrome.** Polycystic ovary syndrome (PCOS) is characterized by hormone imbalances, irregular or absent menstrual periods, and blood sugar and lipid abnormalities. Lean, non-diabetic women with PCOS who consumed 600 mg of alpha lipoic acid daily demonstrated improved insulin sensitivity, decreased triglycerides, and beneficial changes in low-density lipoprotein (LDL), and some experienced more regular menstrual periods.

- **Relieving back pain.** Individuals undergoing rehabilitation therapy for back pain caused by disc compression of nerves who consumed 600 mg of alpha lipoic acid and 360 mg of gamma-linolenic acid (GLA) daily experienced greater improvements in nerve pain, compared with patients undergoing rehabilitation alone.

- **Preventing steroid-induced osteonecrosis.** Corticosteroids such as prednisone threaten bone health and increase fracture risk by impairing blood flow to bone. In an animal model, lipoic acid helped prevent steroid-induced osteonecrosis (bone death that increases fracture risk), possibly by reducing oxidative stress and/or by improving endothelial function.

- **Decreasing leptin levels.** Elevated levels of the fat-secreted hormone leptin are involved in the development of metabolic syndrome and diabetes. Lipoic acid administration to animals decreased circulating leptin and leptin expression in fat tissue.

Cells with mitochondria isolated from old animals degenerate far more rapidly than those with mitochondria from young animals, revealing the importance of healthy mitochondria to delay the aging process. When supplied with a nutrient regimen that includes lipoic acid, a profound regenerative effect is observed, including improved metabolic function and significant declines in oxidative stress.

Recent data reveal that lipoic acid specifically targets factors that contribute to mitochondrial aging, dysfunction, and cell death. Lipoic acid can prevent and even mitigate cardiovascular diseases, obesity, insulin resistance, and complications of diabetes. Lipoic acid protects against nerve and brain cell damage induced by aging and trauma.

New evidence suggests that lipoic acid may also have important cancer-preventive effects, even against some of the most difficult-to-treat malignancies.
References


Diminished cellular energy production is an inevitable consequence of aging. As adults mature, the cellular power plants known as the mitochondria become dysfunctional. The resulting slowdown in energy production manifests in numerous health problems.

Nutritional researchers have discovered that the amino acid carnitine promotes the burning of fat for fuel in the mitochondria, thus promoting youthful levels of cellular energy production.* Researchers have now identified several optimized, next-generation forms of carnitine that not only help boost cellular energy production, but also may confer targeted benefits for the brain, heart, muscles, and central nervous system.

Optimized Carnitine with GlycoCarn® combines these advanced forms of carnitine—acetyl L-carnitine, glycine propionyl L-carnitine, and acetyl L-carnitine arginate—in a single formula that provides balanced, broad-spectrum support for cellular energy production throughout the body.

Acetyl L-carnitine readily crosses the blood-brain barrier to combat oxidative stress and promote energy production in critical brain and central nervous system tissues.1 Acetyl L-carnitine also supports healthy brain function by stimulating the release of acetylcholine and dopamine, two neurotransmitters that play vital roles in brain health and communication.*

Acetyl L-carnitine arginate has an added molecule of arginine that enables it to augment the effects of acetyl L-carnitine, promoting the growth of neurites that facilitate communication among nerve cells in the brain.2

GlycoCarn® is a patented form of glycine propionyl L-carnitine that quickly penetrates into heart, endothelial, and muscle cells, with effects that range from protecting heart muscle from lack of blood flow to combating muscle fatigue by increasing muscle energy stores of glycogen.3

Two capsules of Optimized Carnitine with GlycoCarn® provide:

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A bottle of 60 vegetarian capsules of Optimized Carnitine with GlycoCarn® retails for $29. If a member buys four bottles, the price is reduced to only $19.58 per bottle.

References

*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.
Preserve Youthful Cellular ENERGY with Next-Generation LIPOIC ACID

Published studies have shown the critical importance of lipoic acid in supporting healthy mitochondrial function. Unlike other forms of lipoic acid, SUPER R-Lipoic Acid is more bioavailable, stable, and potent, achieving 10-30 times higher peak blood levels than pure R-lipoic acid. This unique sodium-R-lipoate can help you reach peak plasma concentrations within just 10-20 minutes of supplementation. Super R-Lipoic Acid provides more of the active “R” form of lipoic acid than any other supplement.

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

Contains rice.

References:

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

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
WHAT ELSE INCREASES MY RISK FOR OSTEOPOROSIS?

Despite widespread misconception, low bone mass or osteoporosis poses a significant threat to the health and well-being of maturing women and men. A compromised skeletal system not only boosts your risk of life-altering injury; its adverse effects are now known to manifest across multiple systems of the body. Increasingly, cutting-edge researchers are discovering just how critical a role bone health plays in the prevention (or onset) of many killer diseases of aging, from heart disease to diabetes. In this enlightening excerpt from Your Bones, experts Lara Pizzorno, MA, LMT, and Jonathan V. Wright, MD, shed light on the overlooked dangers to healthy bones posed by commonly prescribed pharmaceuticals, surgery, and alcohol. > >
WHAT ELSE INCREASES MY RISK FOR OSTEOPOROSIS?

the upper part of the stomach registers as full, the brain is sent a message that the entire stomach is full, which helps the person eat smaller portions, eat less often, and lose weight over time. Within six to eight years, weight loss from gastric banding is comparable to that achieved by gastric bypass; however, many physicians and patients choose gastric bypass because it results in faster weight loss and resolution of diabetes. The fact that some of the weight lost comes from the patient's bones is somehow overlooked.

What Does This Mean for YOU?

Either of these surgeries will lessen your body's ability to absorb calcium and the other nutrients necessary for bone health. If you have had or are considering either of these surgical interventions for morbid obesity, please discuss the potential adverse effects on your bones with your physician. Medical journal articles alerting physicians to these concerns are just beginning to appear, and many doctors remain unaware of these issues. Although increasing calcium or vitamin D intake does not suppress parathyroid hormone or prevent the acceleration in bone resorption caused by gastric bypass, it is possible that highly absorbable supplements may help lessen the damage. Anyone who has had either of these surgeries should be using calcium supplements.

The Liver–Kidney Connection to Bone

You've probably heard about how important vitamin D is for bone health. Here's why: vitamin D stimulates the absorption of calcium from the intestines and also calcium's resorption from the kidneys, greatly improving the likelihood that adequate calcium will be present in the bloodstream for all the body's calcium needs. However, these effects of vitamin D do not occur until after vitamin D has been converted into its most active form in the body. This conversion occurs in two stages, the first of which takes place in the liver, and the second in the kidneys. For this reason, dysfunction in either the liver or the kidneys can compromise vitamin D activation, calcium absorption, and bone health.

Approximately 23% of patients with chronic liver disease have osteoporosis. You may be thinking that this couldn't possibly concern you, that liver disease is uncommon and caused only by alcoholism or hepatitis. You'd be wrong.
Today, the most rapidly increasing liver disease is nonalcoholic fatty liver disease or NAFLD, and it is caused by insulin resistance and type 2 diabetes. Following menopause, risk for NAFLD goes up significantly. In a surprising 55% of women over age 60, liver function is compromised by NAFLD.6-9 High blood pressure and diabetes also increase risk for chronic kidney disease, which is estimated to affect 11.5% of adults aged 20 or older in the US.10

**What Does This Mean for YOU?**
NAFLD and other liver diseases often produce no noticeable symptoms and may therefore go undiagnosed. Particularly if you have been diagnosed with metabolic syndrome or type 2 diabetes, be sure your annual physical includes the standard lab tests that check liver function.11

Symptoms of worsening kidney function are also unspecific and may go unnoticed. Symptoms include feeling generally unwell and loss of appetite. Check to be sure that the lab tests run for your annual physical include creatinine. Higher levels of creatinine indicate a decrease in kidney function and the ability to excrete waste products.

Anyone suffering from chronic liver or kidney disease is at significantly increased risk for vitamin D deficiency and osteoporosis. Supplemental vitamin D has been found to help lessen bone loss associated with liver and/or kidney disease.12-16

**What’s Hyperparathyroidism and Why Should My Bones Care?**

Hyperparathyroidism is overactivity of the parathyroid glands (hyper = excessive, above normal), resulting in excessive production of parathyroid hormone. Hyperparathyroidism is divided into “primary” and “secondary” types.

“Primary” hyperparathyroidism is relatively rare. It’s a disease of the parathyroid glands themselves, usually of unknown origin, and is almost always the more severe form. Sometimes surgery is required as part of treatment.

“Secondary” hyperparathyroidism is almost always milder, and not always diagnosed as such. Secondary hyperparathyroidism is not a disease (as the primary form is) but a protective response by the body to increase blood levels of calcium from unhealthy low levels caused by inadequate calcium intake or the many other causes listed below.

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**Osteoporosis Risk**

- Many physicians are unaware that gastric bypass threatens bone health and bone density by decreasing the stomach’s calcium-absorptive area.
- Some of patients’ weight loss following gastric banding or gastric bypass represents lost bone mass.
- Additional calcium intake is crucial for individuals who have undergone these procedures.
- Optimal liver and kidney health is crucial for the activation of vitamin D, a mineral that helps the body absorb calcium.
- Individuals with chronic liver or kidney disease risk vitamin D deficiency and osteoporosis.
- Maintaining healthy parathyroid levels is also crucial for optimal bone health. Higher-than-normal parathyroid levels may indicate you are not achieving adequate calcium and vitamin D levels.
- Hyperthyroidism and anorexia nervosa can also threaten bone health.
- Medications like Actos®, anticonvulsants, opioids, glucocorticoids, antacids, and proton-pump inhibitors also threaten bone health.
But although parathyroid hormone causes an increase in the body’s production of the most active form of vitamin D (1,25-dihydroxyvitamin D), which helps us absorb more calcium from our intestines, parathyroid hormone also causes increased osteoclast activity and bone resorption (bone breakdown) in order to liberate calcium from bone for calcium’s many other immediate uses in the body.

Blood levels of calcium low enough to cause secondary hyperparathyroidism are typically due to not getting enough daily calcium, vitamin D deficiency, chronic kidney disease, chronic liver disease, low levels of stomach acid (hypochlorhydria, relatively common after age 50), malabsorption of calcium (and other minerals, most often caused by “hidden” gluten sensitivity), or gastric bypass surgery. Obesity has also been shown to increase parathyroid hormone levels, which, in addition, tend to increase with age in both men and women.

Above normal levels of parathyroid hormone have recently been associated not only with osteoporosis, but also with cognitive decline and senile dementia (Alzheimer’s disease). The connection is most likely explained by the fact that sustained high levels of parathyroid hormone in the brain increase risk of calcium overloading, which leads to impaired blood flow and brain degeneration.17

Fortunately, a recent study involving 37 institutionalized women, ranging in age from their late 70s to late 80s, has shown that consumption of a fortified dairy product, containing only about 17–25% of the recommended daily intakes for calcium and vitamin D, lowered levels of parathyroid hormone and increased levels of both vitamin D and markers of bone formation in just one month.18

**What Does This Mean for YOU?**

The lab tests ordered at your annual physical should include blood levels of parathyroid hormone. Normal values range from 10–55 picograms per milliliter (pg/mL); however, recent research suggests values higher than 30 may indicate suboptimal intake of calcium and vitamin D.19

Higher than normal levels of parathyroid hormone indicate that you are not meeting your body’s needs for calcium and vitamin D, and that you are at increased risk not only for osteoporosis but cognitive decline and Alzheimer’s disease. Work with your doctor to increase your consumption of calcium and vitamin D, and recheck your levels of parathyroid hormone after a month to two months on your new and improved bone health promotion program.

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**Is Your Thyroid on Overdrive?**

Hyperthyroidism (a “hyperactive” thyroid) is a well-known risk factor for osteoporosis, regardless of sex or age. The hormones produced and secreted by the thyroid gland regulate the body’s metabolic rate. When thyroid hormone levels are too high, regardless of whether we are pre- or post-menopausal, female or male, it’s like putting the body into overdrive, accelerating all its metabolic activities, including the rate at which bones are remodeled, all the time.

Each bone remodeling cycle involves 3-5 weeks of bone breakdown by osteoclasts followed by about 3 months during which osteoblasts lay down new bone to replace the bone that was removed. The result of the fast-forward bone metabolism seen in hyperthyroidism is increased bone resorption that leads to a loss of approximately 10% of bone mass per remodeling cycle. Not surprisingly, this can quickly result in lowered bone mineral density and increased risk of fracture.20,21 Fortunately, hyperthyroidism is relatively uncommon.
Anorexia nervosa, an eating disorder characterized by intense fear of gaining weight and becoming fat, despite being underweight (weighing less than 85% of the weight considered normal or healthy for one’s height and build), causes bone loss, particularly in the spine and hip.\(^{22}\) This is not surprising since bones cannot be built without a whole team of nutrients and also respond by strengthening when stressed by weight—which is why resistance exercises help build bone.

Avoiding food, self-induced vomiting, and use of laxatives, diuretics, and/or appetite suppressants is a sure-fire recipe for bone starvation. Lack of sufficient nourishment not only causes a premenopausal woman to stop menstruating and lose bone, but also causes her to lose muscle and turn into a Skeletor cartoon character look-alike.

The stress that muscles put on bone when they contract is a key “time to build more bone” signal. Women are already at a bone-building disadvantage compared to men because our muscles are smaller. Cannibalize your muscles, and you thin your bones. The complete loss of menstrual periods, amenorrhea, occurs largely because the body is no longer willing to use the energy needed to produce estrogen, which regulates osteoclasts, preventing them from removing too much bone.

### Bone-Busting Patent Medicines

If you are taking any of the following patent medicines, work with your physician to help compensate for their bone-destroying effects or, if possible, to find an alternative less harmful to your bones.

**Avandia\(^{®}\) (rosiglitazone) and Actos\(^{®}\) (pioglitazone):** Use of the diabetes patent medicines Avandia\(^{®}\) or Actos\(^{®}\) for more than a year doubles to triples risk of hip fractures.\(^{24-27}\)

These patent medicines, members of a class of patent medicines called thiazolidinediones (also known as glitazones), are insulin-sensitizing medications that account for approximately 21% of the oral blood sugar-lowering patent medicines used in the US. Although their main therapeutic effects occur in fat tissue, muscles, and the liver, studies show they affect bone as well. They do so by triggering mesenchymal stem cells, which can become any one of several different types of cells, including osteoblasts, chondrocytes (cells that produce cartilage), or adipocytes (fat cells), into choosing to become adipocytes. When you take these patent medicines, your body makes more fat and less bone.

Because studies have demonstrated accelerated bone loss, impaired bone mineral density, and increased fracture risk for thiazolidinedione users, clinicians have been told to carefully assess the fracture risk in their patients with type 2 diabetes before starting them on thiazolidinediones.\(^{28}\)

**Anticonvulsants:** Barbituates such as phenobarbital or Mysoline\(^{®}\) (primidone) alter the metabolism of vitamin D. Dilantin\(^{®}\) (phenytoin) interferes with vitamin D and may also cause a deficiency of folate or B6, or a reduction in blood levels of vitamin K, all of which are essential for building and maintaining bone.

**Chronic Opioid Therapy:** Used in the management of chronic pain, opioid patent medicines (e.g., morphine, codeine, hydrocodone, oxycodone, methadone, tramadol) greatly impact the production of a number of hormones, including two with significant effects on bone: estrogen and thyroid-stimulating hormone (TSH). A study of 47 women, aged 30 to 75, who were using oral or transdermal opioids for control of nonmalignant pain found estradiol levels were 57% lower than in control subjects! These patent medicines inhibit estrogen production so effectively that among premenopausal women, menstruation typically ceases soon after initiating opioid therapy. In contrast, opioid patent medicines increase the production of TSH, which directly suppresses bone remodeling. The combined effect of suppressing estrogen production...
BOOK EXCERPT: WHAT ELSE INCREASES MY RISK FOR OSTEOPOROSIS?

**Are Your Bones Going Up in Smoke?**

Smokers lose bone more rapidly, have lower bone mass (a full one-third of a standard deviation less at the hip and a one-tenth standard deviation less for all sites combined), and a higher fracture rate. In addition, women who smoke reach menopause, when estrogen levels plummet causing bone loss, up to two years earlier than their nonsmoking peers.37-40

Approximately 19% of the hip fractures occurring in a study that pooled data from three population studies involving a total of 13,393 women and 17,379 men were attributable to smoking.41 In other research, smoking increased risk of spinal osteoporosis in men by 230%42

**More than Two Drinks of Liquor Makes Bone Loss Much Quicker**

Alcohol has a dose-dependent toxic effect on osteoblast activity. One to two drinks a day appears to be beneficial. More than two drinks a day prevents bone repair and renewal and significantly increases fracture risk.43,44

Using data from the Third National Health and Nutrition Examination Survey, researchers found that moderate drinkers (less than 29 drinks per month) actually had higher BMD than abstainers. Moderate consumption of alcohol translated to 2.1% higher BMD in men and 3.8% higher BMD in postmenopausal women.45 Another large study, this one involving 11,032 women and 5,939 men, found no increase in fracture risk when two ounces or less of alcohol was consumed daily, but drinking more than this increased risk of any osteoporotic fracture by 38% and hip fracture by 68%.46

Your choice of which alcoholic beverage to consume can also affect the health of your bones. Several recent studies suggest moderate intake (no more than two servings a day) of beer and/or wine may have beneficial effects on bone. (One serving of beer = 8 ounces; one serving of wine = 4 ounces.) A study of 1,697 healthy women, of whom 710 were premenopausal, 176 were perimenopausal, and 811 were postmenopausal, found that beer drinkers had slightly higher bone mass.47

A second large study involving 1,182 men, 1,289 postmenopausal woman, and 248 premenopausal women found bone mineral density was 3.0–4.5% greater in men consuming 2 daily drinks of alcohol or beer, and 5.0–8.3 greater in postmenopausal women consuming 1–2 drinks of alcohol or wine daily. More...

and increasing that of TSH is greatly increased risk of osteoporosis. Women needing opioids for relief of chronic pain should discuss bioidentical hormone replacement with their physicians.29-33

**Glucocorticoid patent medicines:** Often mistakenly termed “cortisone,” these patent medicines include prednisone, prednisolone, Kenalog®, dexamethasone, and nearly anything else ending in “-one,” along with the nonpatentable Cortef®, which is bioidentical cortisol, but as a prescription often used in excess of normal body levels. These patent medicines kill osteocytes (which is what osteoblasts turn into after they begin secreting the bone matrix). Thus, these patent medicines cause a rapid weakening of bone architecture (within 6 months of initiating treatment) even at very low doses. In addition, the glucocorticoid patent medicines deplete the body of vitamin D3, interfering with normal calcium metabolism and absorption. One reason smoking is so harmful to bone is that nicotine causes the body to produce excess cortisol.34-36

**Antacids/Proton-pump inhibitors:** For calcium to be absorbed, it must first be made soluble and ionized by stomach acid. These patent medicines inhibit or even totally prevent your body’s ability to produce stomach acid.

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than 2 drinks a day, however, was associated with significantly lower (3.0–5.2% lower) bone mineral density in the hip and spine in men.

Beer’s beneficial effects on bone are thought to be due to its silicon content. One can of beer contains around 7 milligrams of silicon; a 4-ounce glass of wine provides around 1 milligram of silicon. (For comparison, a half cup of cooked spinach contains around 5 milligrams of silicon.)

Wine’s bone benefits may be linked to its content of phytochemicals, especially the resveratrol present in red wine, which has been shown to have estrogenic effects and might therefore help protect against bone loss in postmenopausal women in whom estrogen levels are low. In rat studies, resveratrol has been shown to have an estrogenic effect and to promote increased BMD in ovariec-tomized rats (rats whose ovaries have been removed to simulate menopause).48-50

References


If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.
BOOK EXCERPT: WHAT ELSE INCREASES MY RISK FOR OSTEOPOROSIS?


Despite abundant scientific validation, many people still do not take vital nutrients because they don’t want to swallow so many pills. This problem has been solved with a one-per-day softgel that includes multiple health-promoting nutrients in just one supplement.

The Life Extension® Super Booster contains critical oil-based nutrients that cannot be incorporated into dry-powder based formulas like the Life Extension Mix™. The Super Booster provides the most effective form of vitamin K, known as menaquinone-7, along with other forms of this critical nutrient.

Just one Super Booster softgel provides:

- **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.

- **Sesame Lignans**  Sesame lignans augment the antioxidant effects of both alpha- and gamma-tocopherol. In a human study conducted at Life Extension, gamma tocopherol plus sesame lignans was 25% more effective in suppressing measurements of free-radical damage than gamma tocopherol and tocotrienols.

- **Vitamin K2**  Vitamin K1 from dietary plant sources is poorly absorbed and only a small fraction gets into the bloodstream. Vitamin K2 is absorbed much more efficiently. Scientific studies show 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 to keep calcium in the bone and out of the arteries.

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

- **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.

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

- **Selenium**  Some scientific evidence suggests that consumption of selenium may reduce the risk of certain forms of cancer. However, the FDA has determined that this evidence is limited and not conclusive. Selenium’s effects in boosting glutathione are well-established.

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

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

Just one softgel of Super Booster supplies:

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin K2 (as menaquinone-7)</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Vitamin K2 (as menaquinone-4)</td>
<td>1000 mcg</td>
</tr>
<tr>
<td>Vitamin K1 (as phytonadione)</td>
<td>1000 mcg</td>
</tr>
<tr>
<td>Gamma tocopherol</td>
<td>230 mg</td>
</tr>
<tr>
<td>Ginkgo extract</td>
<td>120 mg</td>
</tr>
<tr>
<td>Chlorophyllin</td>
<td>100 mg</td>
</tr>
<tr>
<td>Sesame lignans</td>
<td>20 mg</td>
</tr>
<tr>
<td>Lycopene</td>
<td>10 mg</td>
</tr>
<tr>
<td>Lutein</td>
<td>2 mg</td>
</tr>
<tr>
<td>Selenium (as Se-Methyl L-Selenocysteine)</td>
<td>67 mcg</td>
</tr>
<tr>
<td>Selenium (as L-Selenomethionine)</td>
<td>67 mcg</td>
</tr>
<tr>
<td>Selenium (as Sodium selenite)</td>
<td>67 mcg</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>300 mcg</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>95 mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>10 mg</td>
</tr>
<tr>
<td>Mixed tocopherols</td>
<td>359 mg</td>
</tr>
</tbody>
</table>

Contains corn and sesame.

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

Lyc-O-Mato® is a registered trademark of Lycificd Natural Products Limited.

To order Super Booster, 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.
Weak, brittle bones increase the risk of injury for many aging humans. Bone injuries, such as fractures, splinters, and bruises, can be extraordinarily painful and may result in months of uncomfortable rehab or long-term disability. In order to protect yourself from potentially life-altering problems, Life Extension® has formulated an exciting product made with chelated calcium and collagen called KoAct® to maintain bone strength and mineral density.

KoAct® allows for greater flexibility...so your bones can absorb energy, reducing the risk of age-related injuries. Additional plant extracts are included for their bone-protective minerals and polyphenols.

A bottle of Bone Strength Formula with KoAct® retails for $42. If a member buys four bottles, the price is reduced to $28.50 per bottle.

Contains corn.

To order Bone Strength Formula with KoAct®, call 1-800-544-4440 or visit www.LifeExtension.com

Four capsules of Bone Strength Formula with KoAct® provide:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collagen (from 3,000 mg KoAct® Calcium Collagen Chelate)</td>
<td>2,700 mg</td>
</tr>
<tr>
<td>Calcium (from 3,000 mg KoAct® Calcium Collagen Chelate and calcium fructoborate)</td>
<td>300 mg</td>
</tr>
<tr>
<td>Vitamin D3 (as cholecalciferol)</td>
<td>1,000 IU</td>
</tr>
<tr>
<td>Magnesium (as magnesium citrate)</td>
<td>100 mg</td>
</tr>
<tr>
<td>Silica [from standardized Bamboo (Bambusa vulgaris) extract (stem)]</td>
<td>5 mg</td>
</tr>
<tr>
<td>Dried Plum (Prunus domestica) extract (fruit) [standardized to 50% polyphenols (50 mg)]</td>
<td>100 mg</td>
</tr>
<tr>
<td>Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)</td>
<td>3 mg</td>
</tr>
</tbody>
</table>

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.
There are three forms of vitamin K that the human body can utilize to promote arterial health and bone support.  

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

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

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

The retail price for a bottle containing 90 softgels (three-month supply) is $26. If a member buys four bottles, the price is reduced to just $17.25 per bottle.

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

Contains tree nuts (coconut).

Warning to Coumadin (warfarin) Drug Users

Patients prescribed vitamin K-antagonist anti-coagulant prescription drugs like warfarin should consult their physician before taking vitamin K supplements like Super K and Super Booster. There is evidence, however, that users of drugs like warfarin could benefit from a consistent low dose of supplemental vitamin K.

Ask your doctor if you can take a low dose (45 mcg a day) of vitamin K2 in the long-acting MK-7 form for the purpose of stabilizing your INR levels and also protecting your body against long-term vitamin K deficit. Do not initiate any form of vitamin K supplementation without full cooperation of your treating doctor, as your doctor may need to increase your dose of warfarin to compensate for the vitamin K you supplement with.

Life Extension provides several forms of low-dose vitamin K for physician consideration.

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

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.
Scientists at the leading edge of osteology (bone research) are discovering that in addition to immune strength, blood cell production, and nervous system function, a healthy skeletal system is also essential to insulin sensitivity, energy metabolism, and weight management.1-4

The common bone disease osteoporosis accounts for 2.6 million doctors’ office visits and 180,000 placements in nursing homes across the country each year. According to the Surgeon General, by 2020 this potentially life-changing condition will afflict nearly half of all Americans over 50.5

Behind this alarming trend lies an even greater threat to the public health most doctors don’t know about. It turns out that strong, healthy bones play a far greater role in overall health than previously known.

In this article, the most recent data on these findings are detailed. You will also discover how calcium, magnesium, and potassium, along with vitamins D3 and K, act to optimize these functions for bone strength and system-wide health. > >
Until recently, the human skeleton was known to serve three basic functions. The first was its role in providing structural support for muscles and protection for internal organs. The second was its function as a reservoir for important mineral ions, especially calcium and magnesium, which are vital to nerve and muscle cell functioning and electrical conduction. Finally, the marrow space of many bones harbors all of the body’s blood-producing tissues and a major part of the cellular immune system.

Just five years ago, however, scientists discovered a fourth, unexpected function. Bone-forming cells called osteoblasts were found to produce a hormone-like signaling protein called osteocalcin. It was further revealed that osteocalcin stimulates pancreatic insulin secretion and improves insulin sensitivity in tissues throughout the body.

Osteocalcin reduces fat tissue deposition, while higher osteocalcin levels are associated with lower levels of leptin. As you read next, suppressing excess leptin is important in weight management.

Sometimes called the “hunger hormone,” leptin induces the feeling of being full after a meal. It plays a key role in regulating energy intake and energy expenditure, including appetite and metabolism. Higher leptin levels are paradoxically detrimental; as with insulin, you can develop leptin resistance that keeps you from feeling full. Obese individuals exhibit this resistance. Pathologically elevated leptin levels are detrimental to multiple tissues in the body and correlate with insulin resistance, inflammation, stroke, hypertension, and other dangerous health conditions.

High leptin levels also exert an adverse effect over osteocalcin function: the more leptin your body’s fatty tissue produces, the less osteocalcin your bone cells release, and the worse your insulin resistance becomes. And in a final unexpected discovery, leptin achieves that effect by suppressing your osteoblasts’ activity, decreasing your ability to build new bone, and threatening your bone health.

An additional indicator of how good bone health affects longevity is the now well-understood relationship between skeletal health and atherosclerosis. Via a variety of mechanisms, as calcium leaves the bones in the process of osteoporosis, it builds up instead in blood vessel walls, leading to dangerous calcified plaque deposits. Those deposits can rupture, causing an immediate arterial blockage and producing a sudden heart attack or catastrophic stroke.

It is this close interrelationship between bone health and total body health that has intensified scientific interest in identifying nutritional strategies to optimize bone health and strength.
Most doctors don’t know about these new findings. And most Americans, including many health-conscious individuals, don’t get enough of the nutrients they need to support healthy bones. Adequate bone nutrition hinges on the following group of nutrients that work synergistically to optimize skeletal health and ward off multiple diseases of aging.22-24

**Calcium**

Calcium accounts for 1-2% of adult human body weight, with more than 99% of total body calcium residing in the teeth and bones.25 The remaining 1% is used in our electrically active tissues such as nerve and muscle, where it plays a vital signaling role. Thus the skeleton is the body’s only storehouse of the calcium we need to sustain life itself, yet as we age we see a progressive decrease in the amount of calcium in our bones.25 Consuming a readily-absorbed form of calcium, then, is essential for restocking that reservoir—but many people do not ingest adequate amounts of calcium.25

The mainstream medical establishment has stubbornly denied the value of calcium supplementation for years, arguing that human studies under controlled conditions were inconclusive.26 A more careful and detailed review of recent studies, however, reveals flaws in their conclusions. Most notably, in outpatient studies, patients’ adherence to the supplementation regimen was generally poor—in other words, participants weren’t actually taking the calcium doses that researchers thought they were.26 A recent re-analysis of five of those flawed studies showed that patients who took the required doses of supplements indeed had significant reductions in osteoporosis fracture risk.26 Studies designed to optimize patients’ adherence to supplementation regimens have also demonstrated improved bone health and reduced risk of fracture.22,27,28

Not all calcium is alike. Dicalcium malate is an especially rich source of elemental calcium since it is comprised of two calcium molecules attached to each malic acid molecule. In a study of calcium absorption in humans, dicalcium malate demonstrated the longest half-life and greatest bioavailability, compared to several other forms of calcium.29 Calcium bis-glycinate consists of calcium chelated to the amino acid glycine, which allows it to be easily absorbed and utilized by the body. Both dicalcium malate and calcium bis-glycinate are easily assimilated, well tolerated, and effective at improving bone mineral density, an important measure of bone health.30 These mineral formulations represent outstanding forms of calcium for those seeking to optimize their bone health.

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The Link Between Bone Health and Total Health

- Nearly half of all Americans over 50 will suffer from osteoporosis by the year 2020.
- Osteoporosis is only one of the consequences of inadequate bone nutrition.
- Medical researchers have recently discovered conclusive links between bone health and system-wide health.
- The most recent research reveals that weak bones contribute to increased fat mass, decreased insulin sensitivity, inflammation, and greater risk of cardiovascular disease.
- While most maturing individuals know of calcium’s importance for healthy bones, many remain unenlightened of the critical need for vitamin D3, vitamin K, magnesium, potassium, and boron.
Daily doses averaging 1,000 mg are recommended for adults. For older women, the recommendation is 1,200 mg daily. Higher doses don’t provide additional benefit, and doses greater than 3,000 mg per day may be associated with kidney stones and other undesirable outcomes.

**Vitamin D3**

In order to absorb calcium from the diet or from supplements, the human body requires vitamin D. For years, we believed that promoting calcium absorption from the intestinal tract was the chief function of vitamin D. But over the past decade there has been an explosion of scientific discoveries about vitamin D’s multiple roles throughout the body. We now recognize that vitamin D functions as a hormone, with receptors located in at least 35 different tissue types. That means the body’s overall requirement for vitamin D is much greater than we originally realized.

With regard to bone health, vitamin D not only promotes calcium absorption but also its proper deposition in bone tissue, where it helps maintain the skeleton’s basic function as scaffold and protector of soft tissues. Elsewhere in the body, vitamin D acts at its specific receptors to promote immune function, subdue inflammation, reduce arterial calcification, enhance cardiac function, improve brain and nerve tissue performance, and even prevent cancer by regulating the cell replication cycle. Conversely, vitamin D deficiency is associated with not only bone diseases, but also cardiovascular disease, the metabolic syndrome, cancer, immune suppression, and autoimmune conditions such as multiple sclerosis, lupus, and inflammatory bowel disease.

Despite the renewed scientific interest in vitamin D’s impact on human health, the prevalence of vitamin D deficiency remains high. Vitamin D3 (cholecalciferol) is synthesized in the skin from sunlight exposure and then converted into the active form, 1,25-dihydroxyvitamin D (calcitriol), by the liver and kidneys. But even in sunny Southern California, where one would expect most people to have sufficient vitamin D levels, almost 20% of people in one study had low vitamin D3 levels in their blood. In less sun-exposed regions, deficiency rates in excess of 50% have been documented.

And remember that “deficiency” means exceedingly low levels of vitamin D. In aging individuals who don’t take at least 5,000 IU per day of vitamin D, approximately 85% have insufficient or “less-than-optimal” blood levels of vitamin D (measured as 25-hydroxyvitamin D).

The combination of our increased knowledge about the importance of vitamin D throughout the body, and the widespread lack of adequate levels, has resulted in a rapidly growing international call for increased vitamin D intake.

Many experts in the field recommend supplementing with doses of 2,000-10,000 IU per day in order...
to achieve optimal total-body vitamin D status for optimal skeletal, cardiovascular, neurological, immunological, and metabolic health.45,48-50

Magnesium

While calcium and vitamin D have been considered the mainstays of bone nutrition and osteoporosis prevention, several other minerals are also essential to good bone health.51,52 Magnesium is an element that is involved in more than 300 essential metabolic reactions. Magnesium is also vital to human nerve and muscle cell function. Fully one-half to two-thirds of the total body content of magnesium is stored in bone—another example of the skeleton’s substantial role as reservoir for important minerals.53,54 While blood levels of magnesium remain virtually constant throughout life, the total body content diminishes with aging, leading to depletion of the skeletal stores.55 Magnesium deficiency is therefore common among older adults, who typically consume inadequate amounts of magnesium-rich foods and whose physiology may contribute to increased losses of the element from the body.55

Healthy bone matrix proteins hold tightly to calcium and maintain bone’s integrity and strength, reducing your risk of osteoporosis. And ample supplies of osteocalcin directly improve insulin sensitivity, reduce fat accumulation, and are associated with lower levels of leptin, a fat-produced hormone that’s implicated in the metabolic syndrome.13,18

Vitamin K2 increases osteocalcin production and improves bone mineral density, and may protect against fracture risk.72-76

NOTE: If you are taking any form of the anticoagulant medication Coumadin® (warfarin), consult with your prescribing physician before increasing your vitamin K intake. While large quantities of vitamin K may reduce the medication’s efficacy, low-dose vitamin K (100 mcg/day) may increase the stability of anticoagulant therapy, as measured by less fluctuation in international normalized ratio (INR) values.77,78

Vitamin K2—Extra Nutrition for Optimal Bone Health

Attention to the importance of vitamin K2 in supporting bone health has grown over the past decade. It works alongside vitamin D3 to keep calcium in bones where it belongs and out of arterial walls where it does not.67,68 Vitamin K2 reduces production of bone-absorbing cells (osteoclasts) and promotes development of bone-forming cells (osteoblasts).69,70 Vitamin K2 is required for production of a small family of proteins that include the bone matrix proteins and the essential bone-produced hormone called osteocalcin.35,71

Vitamin K2 increases osteocalcin production and improves bone mineral density, and may protect against fracture risk.72-76

NOTE: If you are taking any form of the anticoagulant medication Coumadin® (warfarin), consult with your prescribing physician before increasing your vitamin K intake. While large quantities of vitamin K may reduce the medication’s efficacy, low-dose vitamin K (100 mcg/day) may increase the stability of anticoagulant therapy, as measured by less fluctuation in international normalized ratio (INR) values.77,78

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of the importance of comprehensive bone nutrition that includes more than simply calcium and vitamin D. Simultaneously increasing calcium and magnesium intake helps promote a favorable change in cytokines that can promote bone formation.

**Potassium**

Potassium is one of the predominant ions in the human body, and it is essential to maintaining health at the cellular level. Even apparently minor potassium disturbances can produce significant cardiovascular disorders. Americans consume an average of only 2,600 mg of potassium daily, compared with the 4,700 mg recommended by the USDA’s Center for Nutrition Policy and Promotion. Older adults are at substantially increased risk for having low potassium levels, in part because of lower dietary consumption of potassium-rich fruits and vegetables and also because of the side effects of many common medications such as certain diuretics like furosemide, thiazides such as hydrochlorothiazide, asthma medications such as albuterol inhalers, and the cancer chemotherapy drug cisplatin.

Potassium helps maintain a more alkaline or non-acidic tissue environment, which benefits bone health by reducing calcium losses in urine. People with higher potassium intake boast higher bone mineral density, reducing their risk of osteoporosis and potentially life-changing fractures. Animal studies show that increasing potassium intake in combination with exercise improves both bone density and bone mineral content. A modest amount of potassium, therefore, is a wise addition to a bone-health regimen.

**Boron**

Boron is a trace mineral that is essential to healthy bones since it supports the functions of calcium, magnesium, and vitamin D. In a revealing study, postmenopausal women consumed a boron-deficient diet for 17 weeks, followed by 7 weeks of boron consumption. While on the boron-deficient diet, the women showed increased urinary loss of calcium and magnesium. When boron was re-introduced to their diet, urinary loss of calcium and magnesium declined, and hormones linked with healthy bone mass increased. These findings suggest that boron is crucial in helping maintain the body’s optimal stores of bone-building calcium and magnesium.

Modern eating habits make it difficult to obtain adequate amounts of boron from the typical diet. Scientists have discovered a plant-based form of boron called calcium fructoborate. Naturally found in fruits, vegetables, and other foods, this form of boron is highly stable and bioavailable and may provide antioxidant capabilities in addition to bone-building benefits.

**Summary**

If current health trends continue, nearly half of all Americans over 50 will suffer from osteoporosis by the year 2020. Osteoporosis is just one of the consequences of inadequate bone nutrition. New research reveals that weak bones contribute to increased fat mass, decreased insulin sensitivity, inflammation, and greater risk of cardiovascular disease, among other conditions. While most maturing individuals know they need calcium for healthy bones, many remain unenlightened of the critical need for vitamin D3, vitamin K, magnesium, potassium, and boron.

As a result, nearly half of older Americans do not get enough bone health-promoting nutrients.
References

Huge Savings on Generic Drugs

High-cost prescription drugs are bankrupting the United States, but you can fight back by switching to equivalent generic drugs.

The Life Extension Pharmacy® charges such LOW prices for generics that they are often less than what your co-pay would be if you went through your own insurance.

To find out how much you can save on your prescription medications, call the courteous staff at the Life Extension Pharmacy today at: 1-877-877-9700

<table>
<thead>
<tr>
<th>Product</th>
<th>HISTORIC BRAND PRICE</th>
<th>LOW-COST GENERIC EQUIVALENT</th>
</tr>
</thead>
<tbody>
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<td>Glucophage® 500 mg • 30 tablets</td>
<td>$37.06</td>
<td>$9.01</td>
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<tr>
<td>Metformin 500 mg • 30 tablets</td>
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<td>Zocor® 20 mg • 30 tablets</td>
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<td>Simvastatin 20 mg • 30 tablets</td>
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<td>Arimidex® 1 mg • 30 tablets</td>
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<tr>
<td>Anastrozole 1 mg • 30 tablets</td>
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<tr>
<td>Cozaar® 50 mg • 30 tablets</td>
<td>$80.61</td>
<td>$15.83</td>
</tr>
<tr>
<td>Losartan 50 mg • 30 tablets</td>
<td></td>
<td></td>
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</tbody>
</table>
According to the National Institutes of Health, magnesium is required for more than 300 biochemical reactions in the body. Magnesium "helps maintain normal muscle and nerve function, keeps heart rhythm steady, supports a healthy immune system, and keeps bones strong. Magnesium also helps maintain blood sugar levels already within normal range, promotes normal blood pressure, and is known to be involved in energy metabolism and protein synthesis."1,2

With so many of our body’s critical functions dependent upon magnesium, supplementation can help ensure that you obtain healthy levels of this vital mineral. The recommended intake of magnesium to maintain vascular health is 500 mg or more a day. With Life Extension®’s Magnesium Capsules you can easily obtain 500 mg of elemental magnesium in each capsule.

The retail price of a bottle containing 100 500 mg Magnesium Capsules is $10. If a member buys four bottles, the price is reduced to just $6.75 per bottle.

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

References:
Feeble bones severely hamper quality of life and put aging humans at risk for injury due to possible breaks or fractures.

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

Bone Restore includes highly absorbable forms of calcium, a bioavailable form of boron, along with vitamin D3, magnesium, zinc, manganese, and silicon.

Bone Restore comes in fast-release capsules, making the minerals and other nutrients immediately available for absorption into the bloodstream.

The retail price for 150 capsules of Bone Restore is $22.50. If a member buys four bottles, the price is reduced to just $14.63 per bottle.

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

Just five capsules of Bone Restore provide:

- Highly-Absorbable Calcium 1,200 mg (as DimaCal® dicalcium malate, TRAACS® calcium glycinate chelate, calcium fructoborate)
- Vitamin D3 1,000 IU
- Magnesium 340 mg
- Boron 3 mg (calcium fructoborate as patented Fruitex B® OsteoBoron®)
- Zinc 2 mg
- Manganese 1 mg
- Silicon 5 mg

Contains corn.

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

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.
DELAY Skin Aging with Cutting-Edge Topical DNA Technology
There’s an on/off switch located within the nuclear DNA of every cell in your body—including your skin cells. It controls how long they live and when they die. Most dermatologists have never heard of it.

Known as the telomere, its role as a master regulator of cellular aging now lies at the forefront of skin rejuvenation research.\(^1\,2\)

In this article, the importance of the telomere’s activity in skin aging and appearance is discussed. You will learn of a key nutrient that may favorably modulate this cellular mechanism to slow and even reverse skin aging. You will also find supportive data on its ability to preserve youthful appearance by extending the life span of skin cells.\(^3\)

In a clinical study involving a group of mature women suffering from age-related cosmetic problems, this novel DNA technology induced a 35% increase in skin firmness, 45% improvement in skin tone, with restoration of natural skin moisture observed in all study participants.\(^3\) 

>
Because it is more difficult under these conditions for your skin to produce and retain moisture, dryness sets in and fine lines and wrinkles appear.5

For most of its history, dermatology's approach to reversing the unsightly effects of this inevitable process—sunspots, blemishes, flaking—have understandably focused on the skin's surface. And there is no question that a number of topical interventions are needed to combat skin aging.

Thanks to cutting-edge cellular aging research, we can now surmise that the visible hallmarks of skin aging are largely the result of a change in nuclear DNA: the shortening of the telomeres at the ends of chromosomes, the underlying nuclear mechanism that accelerates the aging of skin cells. (See sidebar above.)
A Novel Intervention to Repair DNA

Years of scientific research have culminated in a cutting-edge approach that can change the way skin cells age. A combination of two key ingredients, teprenone and caprylic acid, has been clinically demonstrated to extend skin cell life span and maintain moisture to promote youthful looking skin.3,6

These ingredients help support more youthful skin cell telomeres and skin cell DNA repair mechanisms while retaining precious moisture in the skin.3,6 The combination can lessen the appearance of fine lines and wrinkles and reduce age spots and large pores. Along with preventing signs of aging, this formula improves skin health by increasing natural moisture content, restoring its texture and strengthening the skin’s barrier function. In response to these agents, skin displays enhanced firmness, tone, and elasticity. It’s not only protected from age-related damage, but also regains much of its youthful function and appearance.

At the molecular level, teprenone (geranylgeranylacetone) closely resembles vitamin K2.7 It is responsible for supporting cell survival and improving skin tone and appearance. Topical use of teprenone acts to prevent and/or limit the formation of reactive oxygen species (ROS), the peroxidation of cutaneous lipids (a component of youthful, healthy skin), and the oxidation of support proteins in the skin cells.3

Teprenone favorably modulates biological stress markers in skin cells. It also actively inhibits or limits the programmed cellular senescence (aging) and apoptosis (programmed death) of skin cells following replication.8,9

Teprenone may stabilize telomeres by activating genes involved in their regulation and elongation.10 By protecting your DNA from free radical stress, teprenone also helps maintain healthy skin cell division. In addition, rebalancing cell functions also helps improve cellular metabolism. In vivo studies show it can prevent the loss of cell function by as much as 60%.3

Caprylic acid is a fatty acid naturally found in palm and coconut oils, as well as the milk of humans, cows, and goats.11 It is a well-known skin-conditioning agent that is absorbed through your skin 100 times faster than compounds with similar effects, such as oleic acid from olive oil.12 It makes an excellent emollient and barrier agent that helps bind water in the skin.6 But perhaps most importantly, caprylic acid also creates a lower pH that helps reduce surface tension and allows the skin to absorb nutrients more efficiently.13

In a clinical study of older women, the natural agents teprenone and caprylic acid produced visible improvement in both functional and structural signs of skin aging.1,6
of aging. Skin firmness increased by 35% in just one month.\(^3\) Skin tone improved by 45% in the same amount of time.\(^3\) Pigmented spots were reduced by 56% after six months.\(^3\)

Sun spots and skin moisture improved in 100% of the women tested; 90% of the participants showed reduced pore size; and 75% exhibited improved skin roughness, fine lines, and barrier function.\(^3\) Greater skin firmness, tone, and elasticity were also observed in the majority—a full 75% of the study volunteers.\(^3\)

The combination of teprenone with caprylic acid provides advanced DNA and telomere support technology, along with soothing moisture and protective barrier function that can help maintain a more youthful skin appearance.\(^14\)

### Other Natural Ingredients for Youthful Skin

Another important nutrient for younger-looking skin is hyaluronic acid. Found in virtually every tissue of your body, it is a key component of connective and epithelial tissue. Its ability to attract 1,000 times its own weight in water is unmatched by any other substance in nature. This makes it crucial for maintaining the skin’s barrier function as well as its moisture and softness. Hyaluronic acid has a volumizing or “plumping” effect on the skin’s extracellular matrix, which adds fullness and minimizes the appearance of facial wrinkles.\(^15,16\)

Although hyaluronic acid is abundant in younger skin, the damage caused by free radicals over time drastically depletes the skin’s reserves. Hyaluronic acid increases cell renewal and helps restore healthy texture, color, and moisture to aging skin.\(^17,20\)

Squalane is another vital nutrient for skin health. This natural hydrocarbon accounts for approximately 12% of the total fat content of the skin’s sebum.\(^21\) The best squalane for dermatological use is obtained from natural olive oil and resembles vitamin A in its chemical structure.

A natural emollient, squalane is quickly absorbed into the skin, leaving it soft and supple with no greasy or oily residue. This unsaturated hydrocarbon penetrates deeply, stimulating the skin’s natural ability to regenerate, nourish, and hydrate tissue.\(^22\) It also discourages the growth of harmful microorganisms by forming a protective antibacterial coating on your skin.\(^23\)

Red tea extract further boosts the skin’s ability to ward off and reverse skin aging.\(^24,28\) Red tea extract is particularly effective at quenching age-causing free radicals due to its powerful antioxidant activity.\(^29\) Antioxidant-rich tea extracts reduce the appearance of skin imperfections, including fine lines and wrinkles, to reveal fresher, healthier, younger-looking skin.\(^30\)

Combining teprenone and caprylic acid with other natural, clinically proven anti-aging compounds produces a formula that can help enhance cell function, improve skin tissue quality, and extend the youthful life span of your skin.

### Summary

Scientists have discovered that a more youthful appearance of aging skin can be achieved through novel technologies focused upon skin cell DNA repair. By supporting more youthful structure and function, skin cells can live longer, resulting in healthier, younger-looking skin. A combination of two key ingredients, teprenone and caprylic acid, has been demonstrated to extend skin cells’ youthful life span and appearance.\(^3,6\) A synergistic combination of these and other skin-soothing ingredients may visibly improve the health and appearance of your skin.●

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

Foundation members can now choose between SolarShield® sunglasses or OveRxCast polarized lenses that provide the same eye protection, plus improved vision under difficult weather conditions.

Life Extension’s SolarShield® sunglasses are recognized as the number-one doctor-recommended sunglass in the world, with more than 50 million pairs sold to date. Patented SolarShield® sunglasses with durable polycarbonate lenses and 100% UV protection fit comfortably over prescription eyewear, providing convenient protection from the harmful effects of ultraviolet radiation.

For those who desire the added benefit of lenses that reduce distracting glare, Life Extension’s OveRxCast sunglasses come with polarized gray lenses that provide natural color definition with 100% UV protection. Like the SolarShield® sunglasses, OveRxCast polarized sunglasses are designed to be worn over your prescription eyeglasses.

The SolarShield® sunglasses retail for $12.99 for one pair, and the member price is $9.74. If a member buys two pairs, the price is reduced to only $8.63 a pair.

One pair of OveRxCast sunglasses retails for $27, and the member price is $20.25. If a member orders two pairs, the price is reduced to just $15.75 per pair.

To order SolarShield® or OveRxCast sunglasses, call 1-800-544-4440 or visit www.LifeExtension.com

SolarShield® is a registered trademark Dioptics, Inc.
Whether you’re a man or a woman, the visible effects of aging on your appearance are always the same. Skin tone eventually loses its luster. The firm, supple look of your younger years begins to fade. Face and neck become noticeably dry and wrinkled instead of refreshed and vibrant. Now you can combat these unsightly changes with new DNA Repair Cream by Cosmesis®.

An innovation in skin care, this new formula features teprenone and caprylic acid, two key ingredients that help restore your skin’s youthful glow. Teprenone has a molecular structure similar to vitamin K, while caprylic acid occurs naturally in palm and coconut oils—topical ingredients dermatologists have relied on for years to help men and women enhance their skin’s appearance.

A Clinically Studied Beautifier

Teprenone is more than just a moisturizer. It has been shown to improve a host of visible age-related changes most maturing individuals face with the passage of time.

A group of women aged 52-64 applying teprenone twice daily experienced a 45% improvement in skin tone, 56% improvement in the appearance of spots and blemishes—and visibly more moist-looking skin in all the women tested after just one month.*

Plus . . .

The new DNA Repair Cream also features hyaluronic acid, a compound found in high concentrations in your skin when you’re young whose levels inevitably decline over time. Abundant in olive oil and similar to vitamin A in molecular structure, the moisturizer squalane also occurs in your skin naturally and gradually diminishes over the years. The quenching action of red tea extract in DNA Repair Cream also lends your skin a fresher look.

Together, this novel combination of beautifiers works to replenish youthful skin appearance—and helps you stay young-looking as you grow older.

A 1 oz jar of DNA Repair Cream retails for $49. If a member buys two jars, the price is reduced to only $31.50 per jar.


To order Cosmesis DNA Repair Cream call 1-800-544-4440 or visit www.LifeExtension.com
Scientists are realizing that skin needs to be protected against external factors such as sunlight, and also against internal damage caused by emotional stress. This is because our emotions, particularly stressful ones, release a wave of stress hormones such as cortisol that prematurely age the skin.

Fortunately, emerging research suggests that a natural herb called ashwagandha can protect and enhance psychological health as seen in a recent human trial. In this study, just 125 mg of a patented ashwagandha extract once a day led to a 14.5% reduction in cortisol levels in 98 chronically stressed individuals. This dose also resulted in a 13.2% increase in levels of the anti-aging hormone DHEA, which helps maintain the youthfulness of skin cells. Overall, the ashwagandha-treated subjects experienced up to 62% reduction in anxiety levels compared with virtually no change in the placebo group.

The impressive results from this trial have led to the incorporation of ashwagandha into a new skin-protection formula called Enhanced FernBlock® with Sendara®. As the name suggests, this formula also contains FernBlock®, the revolutionary oral supplement introduced by Life Extension® in July 2008 that acts as an internal sunscreen against damaging solar radiation.

FernBlock® is a natural extract derived from the fern plant Polypodium leucotomos. Extensive clinical studies document its ability to provide remarkable skin protection by inhibiting the absorption of harmful ultraviolet (UV) rays and quenching DNA-corrupting free radicals. FernBlock® also diminishes the consequences of excessive UV radiation by favorably altering a number of changes in skin cells that cause premature skin aging.

Enhanced FernBlock® with Sendara® is complemented with a powerful antioxidant called Phyllanthus emblica. This natural extract blocks a chemical reaction that generates several types of skin-damaging free radicals, thus shielding the skin against the destruction of collagen and other dermal matrix proteins. An in vitro study using a patented extract of both ashwagandha and Phyllanthus emblica demonstrated an impressive 54% inhibition of collagen-degrading enzymes and an 86% inhibition of those that break down hyaluronic acid—the skin’s natural moisturizer.

The unique combination of natural ingredients in Enhanced FernBlock® with Sendara® has been scientifically proven to help skin look and feel good from the inside out. This formula is designed to complement topical sunscreens for complete skin protection.

A bottle containing 30 vegetarian capsules of Enhanced FernBlock® with Sendara® retails for $39. If a member buys four bottles, the cost is only $26.25 per bottle.

Contains corn and rice.

References

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Lisa Oz
The Power of Healthy Transformation

Despite being born into a family of esteemed physicians, Lisa Oz initially set her sights on a life in the entertainment field. After graduating from Bryn Mawr and studying theology at Columbia University, Lisa pursued her dream of becoming an actress. For over a decade, she lived the life of the theatre by performing, auditioning, and learning her craft.

“What really intrigued me about acting was the idea of changing people’s lives through storytelling,” she says.

Over time, her fascination with telling stories evolved from acting in front of the camera to the behind-the-scenes work of writing scripts, producing television shows, and creating books. During this period, she also fell in love with and married the man who was destined to become not only her partner in the best sense of the word but also the most famous and beloved surgeon in the world, Dr. Mehmet Oz of “Dr. Oz” fame.

In her book and in her personal life, Lisa takes a holistic view of the importance of the mind and body working in harmony for health.
At the time, Dr. Oz was spending the majority of his time saving lives as a cardiac surgeon at Columbia Presbyterian Hospital in New York. She recognized in Dr. Oz another passionate storyteller who was impressive at delivering medical information to his patients and helping them develop a heart-healthy lifestyle. Lisa also felt that if Dr. Oz could reach a larger audience, perhaps patients would be better informed and equipped with the information necessary to make proactive health choices. Being married to a physician is never easy, but being married to a heart surgeon whose life is about answering emergency calls made Lisa want to find a way that they could spend more time together. She began to realize that by combining their talents, they could actually create meaningful change not only in people’s lives but possibly in the way medical care is delivered.

**FORMING A POWERFUL TEAM**

“When Mehmet and I work together on projects, our main goal is to empower the patient, to give them the tools they need to achieve a better outcome in terms of their health care,” she says. “One of Mehmet’s favorite analogies is that all too often the patient sees themselves as the football being tossed around from one caregiver to another. This is not a good situation to be in because the patient needs to be the quarterback. It’s sad, but more often than not the patient is the passive observer in their care and they totally abdicate all decisions and responsibilities to their physicians. We want to provide them with the education and the motivation to be a key player in their own wellness.” This concept of patient empowerment is at the heart of the Dr. Oz health philosophy, which Dr. Oz himself credits his wife for envisioning.

“The entire journey in books and television was Lisa’s brainchild,” says Dr Oz. “Ten years ago, after hearing one too many stories of my frustration with the disease-focused care that I was trained to deliver, Lisa challenged me to write about my experiences. The resulting book, *Healing from the Heart*, was a catharsis and opened my eyes to the opportunity to teach in the public forum. Lisa then created and executive-produced *Second Opinion*, a Discovery Channel TV show that brought health education to families around the world. Ms. Oprah Winfrey agreed to participate as a guest on the inaugural show, and when her show kindly reciprocated, she and her team educated me about the subtle aspects of sharing information with an audience. Lisa even predicted the creation of *The Dr. Oz Show*, which arose from this experience, years before it even crossed my mind.”

For Lisa, the idea for *Second Opinion* occurred from listening to Dr. Oz’s concern that he was having the same conversations over and over again with his patients about how to take care of their heart. “I thought if Mehmet could have a television show where he could discuss health and medicine to a large audience, we could really make a difference,” she says. “This show was the beginning of the Dr. Oz phenomenon. What we did on that show was the precursor for Mehmet’s appearance on Oprah. When *Second Opinion* didn’t get...
picked up for a second season, we thought that we could take all this vital information and put it in a book format to continue reaching a broad audience. This was the start of the YOU book series with Dr. Michael Roizen. The tone in all the YOU books, such as You: The Owner’s Manual and You: Staying Young, is a bit irreverent because we want people to feel comfortable and not scared of their bodies.”

BRANCHING OUT

After years of developing new ways to package vital medical information featuring Dr. Oz for an eager public, Lisa felt it was time to begin focusing on her own projects. One night, while backstage at a lecture that she and Dr. Oz were giving, the organizer asked Lisa if she was going to write her own book. This was the inspiration she needed, and Lisa immediately began work on an outline of what was to become her own book, Us, Transforming Ourselves and the Relationships That Matter Most. With impressive endorsements from Dr. Dean Ornish and other key figures in the medical prevention field, Us quickly took off as a New York Times bestseller.

As a coauthor on the wildly successful YOU book series by Dr. Oz and Dr. Roizen, Lisa helped create the formula for conveying life-changing medical and health information in a concise and humorous fashion meant to get people involved in their own health care. The only message left out of the YOU books was the crucial interaction of our emotional relationships with the complexities of our physical health. It is this message that Lisa delivers in her remarkably intimate and candid fashion. She quickly brings the reader into the book’s experience as a close friend to share her wisdom on how to lead a healthier and more satisfying life.

In her book and in her personal life, Lisa takes a holistic view of the importance of the mind and body working in harmony for health. “Specific diseases are not isolated to a particular organ but are symptomatic of a broader imbalance throughout the body,” she says. “Sadly, modern medicine is still mired in its mechanistic/chemical based paradigm and fails to recognize the body as an energetic entity.” With good humor and intimacy, Lisa takes the reader on a gentle but well-programmed makeover journey toward wellness. The reader is given a simple seven-day program to ease them into vital health. Without judging or scolding, Lisa lets the reader know that if they are not comfortable with her program, “you can go back to your old wicked ways.” These “wicked ways” include overeating, lack of exercise, and emotional turmoil that prevent us from achieving our goals.

MAKING THE RIGHT CHANGES

Dr. Oz sees great value in the way his wife conveys information. “The more I offer advice to patients, the more I realize that the most profound and influential information is delivered in ways described by Lisa,” he says. “Today, people are better educated about their health but are not motivated to make meaningful changes in their lives. As a heart surgeon, I was trained to seek information when facing an intraoperative quandary. But throwing more
Lisa Oz lives the life plan that she lays out for readers in *Us*. She has travelled the path before us and shares the joys and difficulties of that journey. Unlike most people, Lisa started on the road to health very early on in her life. In part, it was Lisa’s upbringing in a family of innovative physicians that made her aware of the importance of preventive maintenance. By the time she was 15, Lisa was interested in all forms of alternative health and became a vegetarian. Her influence on the Oz family health program is impressive. With four children, an active media career, and one of the busiest husbands in medicine and show business, Lisa makes sure that her family stays healthy. “Our family meals tend to be organic with lots of grains, fruits, and vegetables. Just last night we had lentil soup, arugula salad, and brown rice.” In essence, the family follows a Mediterranean diet along with regular exercise and nutritional supplements. Lisa particularly enjoys yoga along with three-times-a-week cardio workouts.

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

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.

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 $32. When a member buys six boxes, the price is reduced to only $18.75 a box—a savings of 40%! (SAMe is also available in bottles containing 50 400 mg tablets. Retail price is $72. If a member buys four bottles, the price is reduced to $49.50 per bottle.) (Item #01055)

References

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

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More than ever before, researchers are convinced about the nutritional benefits of walnuts. Each walnut you crack open and eat contains loads of vitamins, phenolic acids, tannins, and flavonoids, as well as those hard-to-find omega-3 fatty acids, with almost 90% of the phenols being found in the skin. This array of compounds contributes to heart health, works to prevent cancer, helps fight diabetes, improves cognitive function, and may even help with a better night’s sleep. While many nuts have proven to be extremely beneficial to your health, studies are showing that eating a handful of walnuts contains almost twice as many antioxidants as an equivalent amount of any other commonly consumed nut. Over the course of this article, we’ll demonstrate through scientific studies how adding a few handfuls of walnuts to your daily diet can greatly improve your health.
### History

Walnuts are the edible seeds of any tree among the genus *Juglans*. Walnut trees have been cultivated for thousands of years, with the three main species consisting of the English (or Persian) walnut, the black walnut, and the white walnut. The English walnut is the most widely consumed type of walnut in the United States. It originated in India and the regions surrounding the Caspian Sea. Ancient Romans introduced the walnut to many European countries, where in turn they were brought to North America via English merchant ships, hence earning the moniker, “English walnuts.” Presently, China is the largest producer of walnuts in the world, with the United States following close behind.¹

### Benefits

#### Cognitive Function

The Doctrine of Signatures is an old-fashioned philosophy that states that a food’s appearance can tell us what part of the body its nutrients are good for. While this is more of an old wives’ tale in many instances, in the case of the walnut, it holds some water. For instance, a cracked whole walnut looks much like the human brain, and it so happens that walnuts can be used to treat brain injuries and enhance cognitive function, which is why it’s referred to as a “brain food.”² The reason they are so good for your brain health is the high concentration of omega-3 fatty acids. Your brain consists of more than 60% structural fat, and for the brain cells to function

#### All in the Family

While walnuts may be the healthiest nuts on the planet, many other nuts can be extremely beneficial to maintaining a healthy lifestyle.

**Almonds** • Almonds provide many health benefits and are most beneficial to keeping your heart healthy by reducing the risk of heart disease and lowering your cholesterol.¹²

**Pecans** • Pecans are loaded with antioxidants that contribute to lowering your blood pressure as well as helping to prevent the onset of breast and prostate cancer.¹³

**Hazelnuts** • The extremely high amount of vitamin E found in hazelnuts, one of the best natural sources, helps your body form red blood cells, muscles, and other tissues.¹⁴

**Pistachios** • Pistachios are a low-calorie nut promoting heart health. They contain two unique carotenoids not found in other nuts. These are protective antioxidants associated with eye health and reduction of the risk for developing age-related macular degeneration.¹⁵
A recent study at the University of California-Davis examined the effects of walnuts on prostate cancer in mice. Scientists fed a diet of walnuts to mice with prostate cancer, and after 18 weeks they found that the mice who consumed a human equivalent of 2.4 ounces a day had much smaller, slower-growing tumors, reducing cancer growth by 40%.

The omega-3 fatty acids along with phytosterols in walnuts have been proven to help curb breast cancer tumor growth. According to researcher W. Elaine Hardman, PhD, from the Marshall University of Medicine, “Phytosterols bind to estrogen receptors, so they would be expected to slow the growth of breast cancers.” In a study done by Hardman, one group of mice was fed a daily diet that included the equivalent of 2 ounces of walnuts in humans, while another

**Cardiovascular Benefits**

The most in-depth aspect of walnut nutritional research has been the benefits for the heart and circulatory system. They have had a very favorable impact on vascular reactivity, which is the ability of our blood vessels to respond to stimuli in a healthy way. Walnuts contain high amounts of alpha-linolenic acid, or ALA, which is a major contributor to heart health by thinning the blood; reducing risks of clots or heart attacks.

A study in the American Journal of Clinical Nutrition reviewed the heart health benefits of walnuts on 365 participants, who were monitored during control diets and diets supplemented with walnuts. Results showed a significantly greater decrease in total cholesterol and low-density lipoprotein (LDL).

In a study conducted at the Lipid Clinic in Barcelona, Spain, 21 men and women with high cholesterol were given a regular low-calorie diet or one where one-third of the monounsaturated fats were replaced with walnuts. After 4 weeks, the participants switched to the other diet. Along with the reduced levels of cholesterol, the walnuts were found to increase the elasticity of the arteries by 64% and to reduce levels of vascular cell adhesion, a key player in the development of atherosclerosis, or the hardening of arteries.

**Anti-Cancer Benefits**

Seeing that there are such high amounts of antioxidants and nutrients found in walnuts, it’s no surprise that research has shown that eating walnuts can help against cancer. A form of vitamin E called gamma-tocopherol, found in high abundance in walnuts, has been found to help fight breast, prostate, and lung cancer. Also, walnuts reduce the levels of endothelin, a compound that increases blood vessel inflammation. Men with prostate cancer are known to have higher levels of endothelin, prompting further research into the relationship between walnuts and prostate cancer.

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group was fed a regular diet. The mice that ate the walnuts had a much lower incidence of breast tumors, slowing the growth by half.\textsuperscript{8}

**Diabetes**

Consumption of walnuts has increasingly been found to help people with type 2 diabetes. Studies have shown that daily walnut intake provides significant benefits in different measurements of blood vessel functioning. A study at Yale University took 24 adults with type 2 diabetes and had each consume 2 ounces of walnuts to go along with their regular diet. After 8 weeks, blood flow and endothelial function, which is a powerful predictor of cardiovascular risk, significantly improved.\textsuperscript{9}

**Protecting Bone Health**

Alpha-linolenic acid (ALA) is the omega-3 fat found in walnuts, and it has demonstrated a remarkable ability to promote bone health. In a study done by researchers at Penn State University, 23 participants were fed 4 different diets over 6-week periods, one of which was a high-ALA diet. After each segment of the study, the subjects were tested for levels of N-telopeptides, a marker of bone breakdown. Findings showed that in the diet consisting of high levels of ALA, the N-telopeptides count was much lower.\textsuperscript{10}

**Weight Management**

Despite the variety of health benefits walnuts seem to offer, many people stay clear of them due to a fear of gaining weight. In fact, studies have shown that those fears are groundless and eating walnuts actually help as a great tool for weight management. In 2001, Loma Linda University conducted a study which found that regular walnut consumption did not lead to weight gain amongst their participants. The study consisted of 10 men who suffered from high cholesterol. Over a six week period, the men whose diets included walnuts showed a 6% decrease in LDL cholesterol.\textsuperscript{11}

\textbf{CAUTION}: While walnuts provide documented health benefits, they are very high in calories. This means you should incorporate walnuts into your normal meals and not use them as snacks. If one intentionally eats walnuts in the form of excess calories, it could sabotage a weight management program. The best way to benefit from walnuts is to substitute them for other calories so your total daily calorie intake is not increased.

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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2. Wood R. The New Whole Foods Encyclopedia. Penguin (Non-classics); 1999 & \\
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### Most Popular Panels

**COMPREHENSIVE PANELS**

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**FEMALE WEIGHT LOSS PANEL (LCWLF)*** $299

| CBC/Chemistry Profile                   | $289   |
| DHEA-S                                  |        |
| Insulin                                 |        |
| Testosterone                            |        |
| Estradiol                               |        |
| Free T3                                 |        |
| TSH                                     |        |
| Total Testosterone                      |        |
| Free SHBG                               |        |
| PSA (prostate-specific antigen)         |        |
| C-Reactive Protein (high sensitivity)   |        |

**MALE LIFE EXTENSION PANEL (LC32582)** $269

| CBC/Chemistry Profile                   | $269   |
| Homocysteine                            |        |
| TSH for thyroid function                |        |
| Total Testosterone                      |        |
| Estradiol                               |        |
| Free T3                                 |        |
| TSH                                     |        |
| Total SHBG                              |        |
| PSA (prostate-specific antigen)         |        |
| C-Reactive Protein (high sensitivity)   |        |

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

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

**FEMALE LIFE EXTENSION PANEL (LC32535) $269**

| CBC/Chemistry Profile                   | $269   |
| Estradiol                               |        |
| Homocysteine                            |        |
| TSH for thyroid function                |        |
| Free T3                                 |        |
| TSH                                     |        |
| Total SHBG                              |        |
| PSA (prostate-specific antigen)         |        |
| C-Reactive Protein (high sensitivity)   |        |

**FEMALE HORMONE ADD-ON PANEL (LCADDW)*** $125

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

**LIFE EXTENSION THYROID PANEL (LC304131) $75**

- TSH, T4, Free T3, Free T4

**MALE HORMONE RE-TEST PROFILE (LCRTM)** $275

| CBC/Chemistry Profile                   | $275   |
| DHEA-S                                  |        |
| Dihydrotestosterone (DHT), Estradiol, PSA, Pregnenolone, Total and Free Testosterone, and TSH. | |

**FEMALE HORMONE RE-TEST PROFILE (LCLRTF)** $250

| CBC/Chemistry Profile                   | $250   |
| DHEA-S                                  |        |
| Total Estrogen                          |        |
| Pregnenolone, Total and Free Testosterone, and TSH. | |

**THE CBC/CHEMISTRY PROFILE (LC381822)** $35

- Over 40 Parameters Tested
- Cardiovascular Risk Profile
- Total Cholesterol
- HDL Cholesterol
- LDL Cholesterol
- Triglycerides
- Liver Function Panel

**OVER 40 PARAMETERS TESTED CARDIOVASCULAR RISK PROFILE**

- Total Cholesterol
- HDL Cholesterol
- LDL Cholesterol
- Triglycerides
- Liver Function Panel

**KIDNEY FUNCTION PANEL**

- AST (SGOT)
- ALT (SGPT)
- Alkaline Phosphatase
- LDH

**BLOOD PROTEIN LEVELS**

- Total Protein
- 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

**BLOOD MINERAL PANEL**

- Calcium
- Potassium
- Sodium
- Chloride
- Phosphorus
- Iron

**GENERAL HEALTH**

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
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<tr>
<td>HEMOGLOBIN A1C (HBAB1C) (LC001453)</td>
<td>$31</td>
</tr>
<tr>
<td>Albumin</td>
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</tbody>
</table>

**HEMOGLOBIN A1C (HBAB1C) (LC001453)** $31

- Hemoglobin A1C evaluates long-term blood sugar control. Serum glucose sometimes reacts with important proteins in the body rendering them nonfunctional. Since this process is known as glycation is one of the leading theories of aging, Life Extension believes everyone should check their A1C level.

**VITAMIN D (25OH) (LC081950)** $47

- This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.

**FOOD SAFE ALLERGY TEST (LCM73001)** $174

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

**CYTOKINE PANEL (LCYCT)** $399

- Includes TNF-alpha, IL-6, IL-1 beta and IL-8.
- Cytokines are proteins that modulate the inflammatory response. This panel is used to identify elevated levels of specific cytokines.

**OMEGA SCORE™ (LCOMEGA)** $131.25

- Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA:EP factor, a major factor in total body inflammation.

**COQ10* (COENZYME Q10) (LC120251)** $145

- 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.

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* 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.
This test shows if you are taking the proper amount of DHEA. This test normally costs $100 or more at commercial laboratories.

**CORTISOL** (LC004051)
This is a test to measure adrenal function.

**ADRENOCORTICOTROPIC HORMONE (ACTH)*** (LC004440)
A pituitary function test useful in evaluating adrenocortical dysfunction.

**DHEA-SULFATE** (LC004697)
This test shows if you are taking the proper amount of DHEA. This test normally costs $100 or more at commercial laboratories.

**DIHYDROTESTOSTERONE (DHT)*** (LC500142)
Measures serum concentrations of DHT.

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

**INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 3 (IGFBP3)** (LC140152)
Elevated levels in hypertensive individuals have been associated with a nine-fold increase of carotid atherosclerosis.

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

**PREGNENOLONE*** (LC140707)
Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing’s syndrome.

**PROGENDERONE** (LC004317)
Primarily for women. Determines the proper amount in the body.

**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.

**HORMONES**

**CORTISOL** (LC004051)
This is a test to measure adrenal function.

**ADRENOCORTICOTROPIC HORMONE (ACTH)*** (LC004440)
A pituitary function test useful in evaluating adrenocortical dysfunction.

**DHEA-SULFATE** (LC004697)
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**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.

**SOMATOMEDIN C (IGF-1)** (LC010363)
Indicates growth hormone secretion levels. Low levels have been associated with atherosclerosis as well as a rise of mortality.

**TOTAL AND FREE TESTOSTERONE** (LC140103)
Determines whether testosterone replacement should be considered as a therapy for depression, abdominal obesity, low energy, poor mental performance, or loss of libido.

**CARDIAC RISK**

**Lp-PLA2 (PLAC TEST)*** (LC141275)
This test is used to aid in predicting risk for coronary heart disease, and ischaemic stroke associated with atherosclerosis. Lp-PLA2 is a cardiovascular risk factor that provides unique information about the stability of the plaque inside your arteries.

**C-REACTIVE PROTEIN (HIGH-SENSITIVITY)** (LC120766)
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.

**APOLIPOPROTEIN ASSESSMENT**

**Apo A1 + Apo B + Ratio** (LC216010)
This ratio correlates with risk of coronary artery disease and is useful in the presence of borderline elevations of cholesterol.

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

**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 and vitamin B6.

**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.

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

**BONE HEALTH**

**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.

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

**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
GABA Powder
Glycine Capsules

GLYCINE POWDER
Arginine Capsules
L-Arginine Free Base Powder
Arginine/L-Ornithine Capsules
L-Carnitine Capsules
L-Cysteine Capsules
L-Glutathione, L-Cysteine & C
L-Glutamine Capsules
L-Glutamine Powder
L-Lysine Capsules
L-Lysine Powder
L-Tyrosine Tablets
Mega L-Glutathione Capsules
N-Acetyl-L-Cysteine Capsules
Optimized Carnitine with GlycoCarn®
PharmaGABA
Super Carnosine Capsules
Taurine Capsules
Tryptophan®® Tryptophan
(Optimized) Tryptophan® Plus

BONE & JOINT HEALTH
ArthroMax™ with Theaflavins
Bone-Up™
Bone Restore™
Bone Strength Formula w/KoAct™
Chondroitin Sulfate
Chondroin
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
DMAE-Ginkgo
Ginkgo Biloba Certified Extract™
Huperzine A
Lecithin with B6 and BHA
Lecithin Granules
Methylcobalamin Lozenges
Optimized Ashwagandha Extract
Phosphatidylserine Capsules
Rhodiola Extract
Super Ginkgo Extract
Vinpocetine

DIGESTIVE
Agave Digestive-Immune Support
Bromelain Powder
Carnosolvic w/PicroProtect
Digest RC™
Enhanced Super Digestive Enzymes (also available with Probiotics)
Florastor
Intact Digest
Life Flora™
Natural EssophaGuard
N-Zimes™
Pancreatin
Primal Defense™
Regimint
Saccaromyces Boulardi+mos
Theralac Probiotics

DURK AND SANDY PRODUCTS
Blast™
Dual-C
Inner Power™
Memory Ugrade™

EYE CARE
Bilberry Extract
Blackcurrant Freeze Dried Extract
Brite Eyes III
Eye Pressure Support with Mirtogenol®
Overcast Polarized Sunglasses
Solarshield Sunglasses
Super Zeaxanthin with Lutein & Mesol-Zeaxanthin and C3G
(Plus Astaxanthin also available)
Vision Optimizer

FIBER
Apple Pectin Powder
Fiber Food
Hi-Lignan® Nutri-Flax®
WellBetX PGX® Soluble Fiber Blend

FOOD
Asian Cruciferous Vegetable Soup
Cruciferous Vegetable Soup

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

HEART HEALTH
Advanced Lipid Control
Aspirin (Enteric Coated)
Cho-Less™
D-Ribose Capsules
D-Ribose Powder
Endothelial Defense™ with Full-Spectrum Pomegranate™
Fibrinogen Resist
Forskolin
Homocysteine Resist
Natural BP Management
Peak ATP® with GlycoCarn®
Policosanol
Red Yeast Rice
Super Absorbable CoQ10™ with l’Linonene
Super Omega-3 EPA/DHA with Sesame
Lignan & Olive Fruit Extract
Super Ubiquinol CoQ10
Super Ubiquinol CoQ10 with Enhanced Mitochondrial™ Support
Sytrinol™
Theravail Standardized Extract
TMG Powder
TMG Tablets

HERBAL/PHYTO PRODUCTS
Artichoke Leaf Extract
Astaxanthin
Berry Complete
Blackcurrant Juice Concentrate
Blueberry Extract
Blueberry Extract w/Pomegranate
Butterbur Extract w/Standardized Rosmarinic Acid
Calcium D-Glucarate
Cilantro Herbal Extract
Citrus Bioflavonoid
Enhanced Berry Complete with RZD™ Acai
Full-Spectrum Pomegranate™
Grapeseed Extract with Resveratrol & Pterostilbene
Huperzine A with Natural Vitamin E
Kyoic® Garlic Formula 105
Kyoic® Reserve
Mega Green Tea Extract
Mega Green Tea Extract (Decaffeinated)
Mega Lycopene Extract
Nutrim
Optimized Ashwagandha Extract
Pomegranate Extract
Pomegranate Juice Concentrate
ProGreena®
Pure-Gar®
Pyunogenol
Optimized Quercetin
Resveratrol with Synergistic Grape-Berry Actives
Rhodiola Extract
Rosmarinic Acid Extract
Silymarin
SODzyme® with GlSODin®
Stevia Extract
Super Bio-Curcumin®

HORMONES
7-Keto® DHEA
DHEA
DHEA Complete
GH Pituitary Support Day Formula
GH Pituitary Support Night Formula
Melatonin
Melatonin Timed Release
Natural Estrogen with Pomegranate Extract
Pregnenolone
ProFem Cream
Pure IGF
Super Miraforte with Standardized Lignans

IMMUNE ENHANCEMENT
Agave Digestive-Immune Support
AHCC® (Active Hexose Correlated Compound)
Buffered Vitamin C Powder
Echinacea
Enhanced Life Extension Whey Protein
26 Hyperimmune Egg
Immune Protect with PARACTIN®
Lactoferrin
Lifeshield™ Immunity™
Maitake SX-Fraction
Norwegian Shark Liver Oil
Optimized Fucoidan w/Maritech® 926
Primal Defense™
ProBoost™ Thymic Protein A
Pure Gar®
Sambu® Guard
Thymic Immune Factors
Ultimate Flora Advanced Immunity
Vitamin C with Dihydroquercetin
Zinc Lozenges with Vitamin C

INFLAMMATORY REACTIONS
Artho-Immune Joint Support
ArthroMax™ with Theaflavins
Barlean’s Kids DHA
Boswellia
Boswellia® Topical Cream
Bromelain (Specially-coated)
Coromega Kids Brain and Body (DHA)
DHA 240
Emulsified Norwegian Cod Liver Oil
Emulsified Super Twin EPA/DHA
Fast Acting Joint Formula
Ginger Force
Kril Oil
5-LOXIN®
Mega EPA/DHA
Mega GLA with Sesame Lignans
Mega GLA with Sesame Lignans
Mega GLA with Sesame Lignans
MSM
Natural Relief 1222™ Cream
Serraflazyme
SODzyme® with GlSODin® and Wolfberry
Super Omega-3 EPA/DHA with Sesame
Lignans & Olive Fruit Extract
Tart Cherry
Udo’s Choice Oil
Zyflamed Easy

LIVER HEALTH
Branch Chain Amino Acids
N-Acetyl Cysteine
Liver Force
Certified European Milk Thistle
PhosCho® (Nutraasal)
SAME
Silymarine

MINERALS
BioCal
Bone Restore
Bone Strength Formula w/KoAct®
Bone-Up™
Boron Capsules
Calcium Citrate with D3
Chromium Ultra
Copper
Dr. Strum’s Intensive Bone Formula

SKIN CARE
Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermabrasion
Anti-Aging Masque
Anti-Glycation Serum
Antioxidant Rejuvenating Foot Cream
Antioxidant Rejuvenating Foot Scrub
Antioxidant Rejuvenating Hand Cream
Antioxidant Rejuvenating Hand Scrub
Anti-Redness & Blemish Lotion
Cellulite Suppress™ Formula
Corrective Cleaning Mask
DermaWhey
DNA Repair Cream
Dual-Action MicroDerm Abrasion
Elastin Collagen Body Firming Lotion
Essential Plant Oils Reparative Serum
Face Master* Platinum
Face Rejuvenating Antioxidant Cream
Enhanced Ferrilock™ with Sendara™
Fine Line-Less
Hair Suppress Formula
Healing Formula All-in-One Cream
Healing Mask
Hyaluronic Facial Moisturizer
Hydrating Anti-oxidant Face Mist
Hydroderm™
Lavilin Underarm Deodorant
Lifting & Tightening Complex
Melatonin Cream
Mild Facial Cleanser
NaPCA w/Aloe Vera
Neck Rejuvenating Antioxidant Cream
New Face Solution
Peel Off Cleansing Mask
Peptide Correcting Cream
(Ultra) Rejuvenex®
Rejuvenex® Body Lotion
Rejuvenex® Factor
Rejuvenating Serum
Skin Lightening Serum
Skin Restoring Ceramides w/Lipowheat™
Skin Stem Cell Serum
Sun Protection Spray
Total Skin Protection Cream
Triple Action Under Eye Rejuvenator
Ultra Rejuvenex®
Ultra RejuveNight™ w/ Progesterone
Ultra RejuveNight™ w/o Progesterone
Ultra Lip Plumper
Ultra Wrinkle Relaxer
Under Eye Refining Serum
Under Eye Rescue Cream
Vitamin C Serum
Vitamin D Lotion
Vitamin K Healing Cream
SOY
Natural Estrogen w/Pomegranate
Soy Protein Concentrate
Super Absorbable Soy Isoflavones
Ultra Soy Extract
SPECIAL PURPOSE FORMULA
Anti-Alcohol Antioxidants w/HepatoProtection Complex
Benfotammin w/Thiamine
Breast Health Formula
Butterbur Extract w/Standardized Rosmarinic Acid
Chlorella
Chlorophyllin w/Zinc
Cleanse Smart
Conclus Super Strength
CR Mixed Longevity Formula
DermaVita™
Cinsulin™ w/InSea™
and Crominex® 3+
EDTA
European Leg Solution Dosiom 95
Fem Dophilus
Femmenessence MacaPause®
Flush & Be Fit
GlucoFit™
Ideal Bowel Support 299
Lustre™

Maitake SX-Fraction™
Menopause Solutions
Migra-eze™
Natural Female Support
Organic Total Body Cleanse
Pecta-Sol®
Potassium Iodide
POQ Caps with BioPOQ™
Pieropure™
Prelox® Natural Sex for Men®
Pyridoxal 5’- Phosphate
Rosmarinic Acid Extract

SPORTS PERFORMANCE
Creatine Capsules
Creatine Powder
Enhanced Life Extension Protein
DMG (N, N-dimethylglycine)
Inosine
L-Glutamine Capsules
L-Glutamine Powder
Octacosanol

VITAMINS
Ascorbic Acid Powder
Ascorbyl Palmitate Capsules
B1
B2
B12
Beta-Carotene
Biotin Capsules
Biotin Powder
Buffered Vitamin C Powder
Complete B Complex
Essential Fat-Soluble Nutrient
Folic Acid + B12
Gamma E Tocopherol w/Sesame Lignans
Gamma E Tocopherol/Tocotrienols
Inositol Capsules
Inositol Powder
Mega Lycopene Extract
Methylcobalamin MK-7
No-Flush Niacin
Optimized Folate
PABA Capsules
Super Ascorbate C Capsules
Super Ascorbate C Powder
Super K w/Advanced K2 Complex
Tocotrienols w/Sesame Lignans
Vitamin A Nutrirocr
Vitamin B3 (Niacin) Capsules
Vitamin B6
Vitamin B12 Tablets
Vitamin C
Vitamin D
Vitamin D3
Vitamin D3 w/Sea-Iodine™
Vitamins D and K w/Sea-Iodine™
Vitamin E
Vitamin K1

WEIGHT MANAGEMENT
Alli® Refill Pack
Advanced Anti-Adipocyte Formula
w/AdipoStat & Integra Lean®
Anti-Adipocyte Formula w/AdipoStat
Calorie Control Weight Management Formula
7-Keto DHEA
DHEA Complete
Fucoxanthin Slim™
HCA
Integra-Lean® Irvingia
LuraLean® Caps Special Propolmannan
Particle Size
Optimized Irvingia w/Phase 3™ Calorie
Control Complex
Optimized Saffron with Satiereal®
Natural Appetite Control
Natural Glucose Absorption Control
Stevia Liquid Extract
Super CLA Blend w/Guarana and
Sesame Lignans
Super CLA Blend w/Sesame Lignans
Udo’s Choice Wholesome Fast Food Blend
WellBetX PGX® Soluble Fiber Blend
## Buyers Club Order Form

**To order call: 1.954.766.8433 or 1.800.544.4440**

<table>
<thead>
<tr>
<th>No.</th>
<th>Life Extension Members Receive 25% Off the Retail Price of All Products</th>
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</table>

**A**

<table>
<thead>
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<th>No.</th>
<th>Product Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
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<tr>
<td>00449</td>
<td>ACETYL-L-CARNITINE - 500 mg, 100 caps</td>
<td>$56.00</td>
<td>$42.00</td>
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<td>00788</td>
<td>ACETYL-L-CARNITINE ARGINATE - 100 caps</td>
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<td>01038</td>
<td>ADVANCED LIPOID CONTROL - 60 veg. caps</td>
<td>$3.00</td>
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<td>ADVANCED ORAL HYGIENE - 60 veg. mini lozenges</td>
<td>$2.00</td>
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<td>01417</td>
<td>AGAVE DIGESTIVE IMMUNE SUPPORT - 360 grams powder</td>
<td>$3.00</td>
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<td>00681</td>
<td>AHCC - 500 mg, 30 caps</td>
<td>$59.98</td>
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**46925**

|    | ALLI® REFILL PACK - 120 caps                                     | $69.95      | $58.00      |     |       |

<table>
<thead>
<tr>
<th>No.</th>
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<td>ALPHIA-LOCIDIC ACID W/BIOTIN (SUPER) - 250 mg, 60 caps</td>
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<td>01440</td>
<td>ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPORO - 100 caps</td>
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<td>01510</td>
<td>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT - 60 veg. caps</td>
<td>$3.50</td>
<td>$2.62</td>
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<td>01509</td>
<td>ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT &amp; INTEGRATE LEAN*ADVANCED</td>
<td>$3.90</td>
<td>$2.92</td>
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<td>00105</td>
<td>APPLE PECTIN POWDER - 227 grams</td>
<td>$14.37</td>
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<tr>
<td>01012</td>
<td>ARGinine CAPS - 800 mg, 200 caps</td>
<td>$2.65</td>
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<td>01039</td>
<td>ARGinine/DNITRINE - 50/250, 100 caps</td>
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<td>ARGinine/DNITRINE POWDER - 150 grams</td>
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<td>$1.71</td>
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<td>01025</td>
<td>(L)-ARGinine FREE-FORM POWDER - 100 grams</td>
<td>$15.98</td>
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<tr>
<td>01317</td>
<td>ARTHRMAX™ w/THAFLAVINS - 120 veg. caps</td>
<td>$4.00</td>
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<tr>
<td>01404</td>
<td>ARTHRO-IMMUNE JOINT SUPPORT - 60 veg. caps</td>
<td>$3.20</td>
<td>$2.40</td>
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<tr>
<td>00919</td>
<td>ARTICHOKE LEAF EXTRACT - 500 mg, 180 veg. caps</td>
<td>$2.80</td>
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<tr>
<td>00086</td>
<td>ASCORBATE C (SUPER) - 8 oz powder</td>
<td>$26.99</td>
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<td>00080</td>
<td>ASCORBIC ACID POWDER - 454 grams</td>
<td>$3.80</td>
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<tr>
<td>00082</td>
<td>ASCORBHYL PALMITATE - 500 mg, 100 caps</td>
<td>$2.25</td>
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<td>ASHWAGANDHA EXTRACT (OPTIMIZED) - 60 veg. caps</td>
<td>$1.00</td>
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**SUB-TOTAL OF COLUMN 1**

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<th>No.</th>
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<th>Total</th>
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<td>01066</td>
<td>ASPIRIN - 81 mg, 300 enteric coated tablets</td>
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<td>ASTAXANTHIN - 2 mg, 30 softgels</td>
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**B**

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<tr>
<td>00920</td>
<td>BENEFOTIAMINE w/THIAMINE - 100 mg, 120 veg. caps</td>
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<td>00106</td>
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<td>BLACKCURRANT JUICE CONCENTRATE - 12 fl. oz</td>
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<td>70000</td>
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<td>01370</td>
<td>BOOSTER - 60 softgels</td>
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<td>BOSWELLA TOPICAL CREAM - 4 oz</td>
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<td>BIOSIL™ - 5 mg, 30 veg. caps</td>
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**SUB-TOTAL OF COLUMN 2**
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<td>00999</td>
<td>BREAST HEALTH FORMULA - 60 veg. caps</td>
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<td>00683</td>
<td>BRUTIE EYES III - 2 vials, 5 ml each</td>
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<td>BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID - 60 softgels</td>
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<td>CALCIUM CITRATE w/VITAMIN D - 300 caps</td>
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<td>CALCIUM D-GLUCARATE - 200 mg, 60 caps</td>
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<td>CALORIE CONTROL WEIGHT MANAGEMENT FORMULA BLUEBERRY-POMEGRANATE FLAVOR - 402 grams powder</td>
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<td>00613</td>
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<td>CARNITINE w/GLYCOCARN® (OPTIMIZED) - 60 veg. caps</td>
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<td>01258</td>
<td>CARNISOOTH w/PICROPROTECT™ - 60 veg. caps</td>
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<td>CELL SENSOR-EMF DETECTION METER</td>
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<td>CHILDREN’S FORMULA LIFE EXTENSION MIX™ - 100 chewable tablets</td>
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<td>CHOLESTEAROL - 500 mg, 200 tablets</td>
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<td>CHOLPHYLVIN w/ZINC - 100 veg. caps</td>
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<td>CHOLINE CHLORIDE - 16 oz liquid</td>
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<td>CHONDROITIN SULFATE CONCENTRATE - 400 mg, 60 tablets</td>
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<td>CHROMIUM ULTRA - 100 veg. caps</td>
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<td>$24.00</td>
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<td>CHROMIUM w/CROMINEX® 3+ (OPTIMIZED) - 500 mcg, 60 veg. caps</td>
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<td>CILANTRO HERBAL EXTRACT - 1 oz</td>
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**SUB-TOTAL OF COLUMN 3**

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

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<tr>
<td>01503</td>
<td>CINSULIN™ w/INSEA™ AND CROMINEX®-3 + 90 veg. caps</td>
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<td>$28.50</td>
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<td>CITRUS BIOFLAVONOID - 100 caps</td>
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<td>$12.59</td>
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<td>CLA BLEND w/SESAME LIGNANS (SUPER) - 1000 mg, 120 softgels</td>
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<td>$27.00</td>
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<td>$36.00</td>
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<td>00819</td>
<td>CLA BLEND w/GUARANA &amp; SESAME (SUPER) -1000 mg, 120 softgels</td>
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<td>$31.50</td>
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<td>01078</td>
<td>CLEANSER SMART - 60 caps</td>
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<td>$55.50</td>
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<td>COGNITEX w/PREGNENOLONE w/NEUROPROTECTION COMPLEX - 90 softgels</td>
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<td>COGNITEX BASICS - 60 softgels</td>
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<td>COQ10 (SUPER UBIQUINOL) - 100 mg, 100 softgels</td>
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<td>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -200 mg, 30 softgels</td>
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<td>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -300 mg, 60 softgels</td>
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<td>COROMEGA CHILD BRAIN &amp; BODY - (Lemon Lime) 30 packets</td>
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**SUB-TOTAL OF COLUMN 4**

To order online visit: www.lifeextension.com

AUGUST 2011
## Buyers Club Order Form

### No. | Retail Each | Member Each | Qty | Total
--- | --- | --- | --- | ---
### C. CONTINUED

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<th>Member Each</th>
<th>Qty</th>
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<td>COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS - 33 oz</td>
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<td>80139</td>
<td>COSMESIS AMBER SELF MICRODERMABRASION - 2 oz</td>
<td>49.00</td>
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<td>80118</td>
<td>COSMESIS ANTI-AGING MASK - 2 oz</td>
<td>72.00</td>
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<tr>
<td>80134</td>
<td>COSMESIS ANTI-GLYCATION SERUM - 1 oz W/BLUEBERRY &amp; POMEGRANATE EXTRACTS</td>
<td>33.00</td>
<td>24.75</td>
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<td>80133</td>
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<td>80127</td>
<td>COSMESIS ANTI-AGING REJUVENATING FOOT CREAM - 2 oz</td>
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<td>80128</td>
<td>COSMESIS ANTI-AGING REJUVENATING FOOT SCRUB - 2 oz</td>
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**SUB-TOTAL OF COLUMN 5**

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<td>(L) CYSTEINE - 500 mg, 60 caps</td>
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**SUB-TOTAL OF COLUMN 6**

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

---

To order call: 1.954.766.8433 or 1.800.544.4440
**To order online visit: www.lifeextension.com**

**Buyers Club Order Form**

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<tr>
<th>No.</th>
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**SUB-TOTAL OF COLUMN 7**

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**SUB-TOTAL OF COLUMN 8**

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

AUGUST 2011
### Buyers Club Order Form

**To order call: 1.954.766.8433 or 1.800.544.4440**

#### G

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### SUB-TOTAL OF COLUMN 9

**SUB-TOTAL OF COLUMN 10**

**AUGUST 2011**

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS
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**SUB-TOTAL OF COLUMN 11**

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**SUB-TOTAL OF COLUMN 12**
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<td>16-oz coated softgels</td>
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<td>PEAK ATP® WITH GLYCOCAN® - 60 veg. caps</td>
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<td>$99.95</td>
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<td>PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps</td>
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<td>PHOSCHOL® - 900 mg, 100 softgels</td>
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<td>00368</td>
<td>PHOSPHATIDYLSEERINE CAPS - 100 mg, 100 caps</td>
<td>$54.00</td>
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<td>00614</td>
<td>PILL CUTTER/GRAINDER</td>
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<td>POLICOSANOL - 10 mg, 60 tablets</td>
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**SUB-TOTAL OF COLUMN 13**
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<td>00453</td>
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<td>SOZYME® w/GLISODIN® AND WOLFBERRY - 90 veg. caps</td>
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<td>STEVIA EXTRACT - 100 packets, 1 gram each</td>
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<td>Buy 4 bottles, price each</td>
<td>26.00</td>
<td>19.50</td>
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<td>Buy 12 bottles, price each</td>
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<td>Member Each</td>
<td>Qty</td>
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<td>10.00</td>
<td>7.50</td>
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<td>9.00</td>
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<td>(L) THEANINE - 100 mg, 60 caps</td>
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<td>THYMIC IMMUNE FACTORS - 100 caps</td>
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<td>Buy 4 bottles, price each</td>
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<td>THYROID FORMULA® (METABOLIC ADVANTAGE) - 100 caps</td>
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<td>TOCOTRIENOLS WITH SESAME LIGMANS - 60 softgels</td>
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<td>TOOTHPASTE - 4 oz (Mint)</td>
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<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps</td>
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<td>Buy 4 bottles, price each</td>
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<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL - 60 veg. caps</td>
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<td>TRYPOTOPINE™ L-TRYPTOPHAN - 500 mg, 90 veg. caps</td>
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<td>TRYPOTOPINE™ PLUS (OPTIMIZED) - 90 veg. caps</td>
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<td>TWO-PER-DAY - 60 veg. tablets</td>
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<td>9.00</td>
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<td>TWO-PER-DAY - 120 veg. tablets</td>
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<td>Buy 4 bottles, price each</td>
<td>17.00</td>
<td>12.75</td>
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<td>L-TYROSINE - 500 mg, 100 tablets</td>
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<td>Buy 4 bottles, price each</td>
<td>11.42</td>
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To order online visit: www.lifeextension.com

No.  Retail Each  Member Each  Qty  Total

01225  VITAMIN K2 (LOW-DOSE) - 45 mcg. 90 softgels  $18.00  $13.50
  Buy 4 bottles, price each  16.00  12.00

01585  ZEAXANTHIN W/LUTEIN & MESO-ZEAXANTHIN
  AND C3G (SUPER) - 60 softgels  $22.00  $16.50
  Buy 4 bottles, price each  19.80  14.85

01586  ZEAXANTHIN W/LUTEIN & MESO-ZEAXANTHIN
  PLUS ASTAXANTHIN AND C3G (SUPER)  42.00  31.50
  Buy 4 bottles, price each  38.00  28.50

00061  ZINC LOZENGES - 75 lozenges  9.50  7.13
  Buy 4 bottles, price each  6.75  5.06

01051  ZYFLAMEND - 120 softgels  60.95  45.71

01029  ZYFLAMEND EASYCAPS - 180 softgels  31.95  23.96

SUB-TOTAL OF COLUMN 19

* These products are not 25% off retail price.
**Not for sale to wholesalers or retail stores.
***Not eligible for member discount or member renewal product credit.
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Maintaining a healthy cardiovascular system is strongly linked to a healthy inflammation response – Zyflamend is the first choice for promoting heart health.*

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Omega-3 Is Important for Cardiovascular Health
The body needs fatty acids to survive and is able to make all but two of them: linoleic acid (LA) in the omega-6 family, and alpha-linolenic acid (ALA) in the omega-3 family. These two fatty acids must be supplied by the diet and are therefore considered essential fatty acids (EFAs).

Omega-3 fatty acids, found in cold-water fish (and fish oil), perilla oil, and flaxseed oil, are essential elements of a healthy diet. While the polyunsaturated fats known as omega-6 fatty acids are essential to life, most Americans and citizens of other Western nations consume far too many omega-6 polyunsaturated fatty acids and not enough omega-3 polyunsaturated fatty acids. In fact, some Western diets consist of 20 parts of omega-6 to only one part of omega-3. For optimum health, the ratio of omega-6 to omega-3 fatty acids should be between 1:1 and 4:1. The severe imbalance that occurs with most people contributes to the development of long-term health problems.

Life Extension’s Super Omega-3 is a premium, scientifically-validated fish oil concentrate, derived from sustainable sources, that contains a proprietary, full-spectrum blend of synergistic nutrients to provide scientifically-validated cardioprotective health benefits.

Super Omega-3 from Life Extension® uses a patented EPA/DHA extraction process that results in a pure, stable, and easy-to-tolerate fish oil extract. While most fish oil is distilled to decrease contaminants such as mercury and PCBs, the Pure™ fish oil used in Super Omega-3 is produced with a patented method that purifies the oil with a highly advanced distillation process to reduce pollutants to virtually undetectable levels. The result is an improved fish oil that exceeds the standards set by international rating agencies.


To order Zyflamend or Super Omega-3, call 1-800-544-4440 or visit www.LifeExtension.com

* 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.
For a large percentage of men over the age of 50, having a healthy prostate is the key to living a normal life. Dietary supplementation for urinary and prostate health helps men maintain a normal hormonal balance, which promotes normal urinary flow and prostate health. Choosing to support a healthy prostate through supplementation is one of the smartest choices an aging man can make.

Ultra Natural Prostate Formula combines eleven cutting-edge natural ingredients that have been scientifically substantiated to protect the prostate gland and maintain its healthy function.* One of the newest additions to the formula is European pumpkin seed oil extract, which is rich in delta-7 sterols and fatty acids.

The formula provides saw palmetto extract and Graminex Flower Pollen Extract™ to interfere with DHT activity and help regulate inflammatory reactions in the prostate.* Lycopene is a carotenoid that has been added to the formula to help maintain healthy DNA gene function in prostate cells.

In order to boost its anti-estrogen capabilities, Ultra Natural Prostate Formula incorporates HMRLignan™, derived from Norway spruce, flax lignans, and nettle root extract.

Since normal aging can lead to potentially unsafe levels of prostaglandins in the prostate, Pygeum africanum extract is included to help suppress prostaglandins and thereby promote prostate comfort.* Beta-sitosterol has been added because it is the most biologically active component of pygeum and enhances its protective effects.

Ultra Natural Prostate Formula also contains 5-LOXIN® boswellia extract to protect against the dangerous enzyme 5-lipoxygenase and the mineral boron to help slow elevation of prostate-specific antigen (PSA).

The retail price for one bottle of Ultra Natural Prostate Formula is $38. If a member buys four bottle, the price is reduced to $26.25 per bottle. If a member buys 12 bottles, the price is reduced to $24 per bottle.

Contains soybeans and corn.

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