Green Tea Slashes Risk of Alzheimer's

Banish Age Spots and Hyperpigmentation

Plant-Derived Natural Estrogens

Fatal Prostate Cancer Linked to Inflammation

Reishi Reduces Colon Polyp Rate by 52%

PLUS—

Resveratrol Improves Insulin Sensitivity
Calorie Restriction Confers Longevity
Low Vitamin D Predicts Severe Coronary Occlusion
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 to two capsules daily.

References

CAUTION: If you are taking glucose lowering medication, consult your healthcare provider before taking this product. Bio-Enhanced® is a registered trademark of Geronova Research, Inc.

To order Super R-Lipoic Acid, 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.
TABLE OF CONTENTS

34 SAFE MANAGEMENT OF MENOPAUSAL SYMPTOMS
Women and their doctors have long searched for alternatives to conventional hormone drugs to treat menopausal symptoms. Studies show that natural plant-based extracts, hops and lignan extract, block menopausal discomforts such as hot flashes, irritability, and sexual problems. This combination may also provide anticancer, antimicrobial, anti-inflammatory, and immunomodulatory benefits.

44 LIGHTEN AGE SPOTS TO RESTORE SKIN UNIFORMITY
Aging skin overproduces melanin and unevenly deposits it, causing age spots and uneven tones that make skin appear older. Rigorous research reveals that a formulation of three natural compounds lightens age spots in 80% of individuals, fades freckles for almost 90% of participants, and reduces total areas of hyperpigmentation by 25%.

52 TOCOTRIENOLS’ LITTLE-KNOWN BENEFITS
Often overlooked by scientists and consumers, tocotrienols are a crucial component of the entire spectrum of vitamin E with their own unique health benefits. Researchers have shown that tocotrienols can create new artery formation after a stroke, protect vital brain circuitry, and improve pancreatic cancer survival in laboratory studies.

64 REISHI FIGHTS IMMUNE DECLINE
With aging, our immune system declines in a process called immunosenescence. A weakened immune system encourages deadly infection and disease. Scientists have confirmed that the medicinal mushroom reishi contains pharmacologically active compounds that bolster the immune system and help defend against age-induced immune decline.

REPORTS

22 ON THE COVER
GREEN TEA DEFENDS AGAINST ALZHEIMER’S DISEASE
Striking new scientific evidence reveals that green tea inhibits Alzheimer’s disease by preventing amyloid plaque formation and creating new brain neurons—resulting in a 54% reduction in the risk of cognitive decline. Neuroimaging scanning now demonstrates how green tea extract boosts activity in an area of the brain specifically used for working memory.

7 WHY SICK CARE COSTS SO MUCH
There is no real healthcare cost crisis as politicians claim. Instead, a marketplace dominated by pharmaceutical lobbyists use regulatory barriers to gouge the public with monopolistic prices. Deregulation would improve health care, lower costs, and eliminate the need for government-mandated insurance programs.

15 IN THE NEWS
Reducing calories lowers mortality risk; glucosamine increases life span; resveratrol improves glycemic measures; correcting vitamin D levels in women boosts weight loss; and more.

77 ASK THE PHARMACIST
Beta-blockers to reduce blood pressure can lead to chronic sleep disturbances by blocking melatonin production. Melatonin may correct this common problem that is often overlooked by physicians.

83 AUTHOR INTERVIEW
Neuropsychiatrist Dr. Daniel Amen discusses strategies to optimize the unique strengths of the female brain for peak performance. His book Unleash the Power of the Female Brain reveals the top foods and supplements, and how to balance hormones.

89 PROFILE
Cardiologist Dennis Goodman’s new book, Magnificent Magnesium, details how correcting magnesium levels prevents heart attacks, slashes blood pressure, stops muscle cramps, relieves insomnia, and boosts calcium absorption.

95 SUPER FOODS
Olive oil is vital in the disease-reducing Mediterranean diet and positively influences nearly 100 genes that control the aging process. Studies show that olive oil protects against Alzheimer’s, osteoporosis, and skin aging.

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

1. **SUPER UBIQUINOL CoQ10**
   CoQ10 is required to convert the fats and sugars you eat into cellular energy. The body’s production of CoQ10 markedly declines with advancing age.
   Scientific studies show that **absorption** of the ubiquinol form of CoQ10 is far greater than the ubiquinone form.\(^1\)

2. **ENHANCED SUPPORT WITH SHILAJIT**
   PrimaVie® shilajit has been shown to **double** levels of CoQ10 in mitochondrial\(^1\) Combining CoQ10 and shilajit produced a **56% increase** in energy production in the brain—**40% better** than CoQ10 alone. And in muscle, there was a **144% increase** in energy production—**27% better** than CoQ10 alone.\(^2\)

3. **PQQ PROMOTES YOUTHFUL CELLULAR FUNCTION**
   - **PQQ** activates genes that promote the formation of *fresh mitochondrial*\(^3\)
   - **Mitochondrial DNA** is situated at the source of free radical production, but has relatively little protection from their damaging effects.\(^3\) PQQ powerfully boosts mitochondrial **antioxidant** defenses while promoting the generation of **new mitochondria**.\(^3,5\)

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

---

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

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ubiquinol (as Kaneka QH Ubiquinol®)</td>
<td>100 mg</td>
</tr>
<tr>
<td>PrimaVie® Shilajit fulvic acid complex</td>
<td>100 mg</td>
</tr>
<tr>
<td>BioPQQ® Pyrroloquinoline quinone disodium salt</td>
<td>10 mg</td>
</tr>
</tbody>
</table>

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

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

References

---

To order Super Ubiquinol CoQ10 With BioPQQ®, 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.
<table>
<thead>
<tr>
<th>Name</th>
<th>Medical Specialty</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gustavo Tovar Baez, MD</td>
<td>operates the Life Extension Clinic in Caracas, Venezuela</td>
<td>is the first physician in Caracas to specialize in anti-aging medicine.</td>
</tr>
<tr>
<td>Ricardo Bernales, MD</td>
<td>is a board-certified pediatrician and general practitioner in Chicago, IL, focusing on allergies, bronchial asthma, and immunodeficiency.</td>
<td></td>
</tr>
<tr>
<td>Anna M. Cabeca, DO, FACOG, ABAARM</td>
<td>is a board certified Gynecologist and Obstetrician, as well as board certified in Anti-Aging and Regenerative Medicine, an expert in Functional Medicine, and an expert in women’s health. She specializes in bioidentical hormone replacement therapy and natural alternatives, successful menopause and age management medicine.</td>
<td></td>
</tr>
<tr>
<td>Thomas F. Crais, MD, FACS</td>
<td>is a board-certified plastic surgeon, was medical director of the microsurgical research and training lab at Southern Baptist Hospital in New Orleans, LA, and currently practices in Sun Valley, ID.</td>
<td></td>
</tr>
<tr>
<td>William Davis, MD</td>
<td>is a preventive cardiologist and author of Wheat Belly: Lose the Wheat, Lose the Weight and Find Your Path Back to Health. He is also medical director of the online heart disease prevention and reversal program, Track Your Plaque (<a href="http://www.trackyourplaque.com">www.trackyourplaque.com</a>).</td>
<td></td>
</tr>
<tr>
<td>Martin Dayton, MD, DO</td>
<td>practices at the Sunny Isles Medical Center in North Miami Beach, FL. His focus is on nutrition, aging, chelation therapy, holistic medicine, and oxidative medicine.</td>
<td></td>
</tr>
<tr>
<td>John DeLuca, MD, DC</td>
<td>is a 2005 graduate of St. George’s University School of Medicine. He completed his Internal Medicine residency at Monmouth Medical Center in Long Branch, NJ, in 2008 and is board certified by the American Board of Internal Medicine. Dr. DeLuca is a Diplomate of the American Academy of Anti-Aging Medicine and has obtained certifications in hyperbaric medicine, pain management, nutrition, strength and conditioning, and manipulation under anesthesia.</td>
<td></td>
</tr>
<tr>
<td>Carmen Fusco, MS, RN, CNS</td>
<td>is a research scientist and clinical nutritionist in New York City who has lectured and written numerous articles on the biochemical approach to the prevention of aging and degenerative diseases.</td>
<td></td>
</tr>
<tr>
<td>Norman R. Gay, MD</td>
<td>is proprietor of the Bahamas Anti-Aging Medical Institute in Nassau, Bahamas. A former member of the Bahamian Parliament, he served as Minister of Health and Minister of Youth and Sports.</td>
<td></td>
</tr>
<tr>
<td>Mitchell J. Ghen, DO, PhD</td>
<td>holds a doctorate in holistic health and anti-aging and serves on the faculty of medicine at the Benemérita Universidad Autónoma de Puebla, Mexico, as a professor of cellular hemapoetic studies.</td>
<td></td>
</tr>
<tr>
<td>Gary Goldfaden, MD</td>
<td>is a clinical dermatologist and a lifetime member of the American Academy of Dermatology. He is the founder of Academy Dermatology of Hollywood, FL, and COSMESIS Skin Care.</td>
<td></td>
</tr>
<tr>
<td>Miguelangelo Gonzalez, MD</td>
<td>is a certified plastic and reconstructive surgeon at the Miguelangelo Plastic Surgery Clinic, Cabo San Lucas.</td>
<td></td>
</tr>
<tr>
<td>Garry F. Gordon, MD, DO</td>
<td>is a Payson, AZ-based researcher of alternative approaches to medical problems that are unresponsive to traditional therapies. He is president of the International College of Advanced Longevity Medicine.</td>
<td></td>
</tr>
<tr>
<td>Richard Heifetz, MD</td>
<td>is a board-certified anesthesiologist in Santa Rosa, CA, specializing in the delivery of anesthesia for office-based plastic/cosmetic surgery, chelation therapy, and pain management.</td>
<td></td>
</tr>
<tr>
<td>Roberto Marasi, MD</td>
<td>is a psychiatrist in Brescia and in Piacenza, Italy. He is involved in anti-aging strategies and weight management.</td>
<td></td>
</tr>
<tr>
<td>Maurice D. Marholin, DC, DO</td>
<td>is a licensed Chiropractic Physician and Board Certified Osteopathic Family Physician. While training at the University of Alabama, he completed Fellowships in Clinical Nutrition and Behavioral Medicine. He is currently in private practice in Clermont, Fl.</td>
<td></td>
</tr>
<tr>
<td>Francesco Marotta, MD, PhD</td>
<td>gastroenterologist and nutrigenomics expert with extensive international university experience. Consulting Professor, WHO-affiliated Center for Biotech &amp; Traditional Medicine, University of Milano, Italy. Hon. Res. Professor, Human Nutrition Dept, TWU, USA. Author of over 130 papers and 400 congress lectures.</td>
<td></td>
</tr>
<tr>
<td>Philip Lee Miller, MD</td>
<td>is founder and medical director of the Los Gatos Longevity Institute in Los Gatos, CA.</td>
<td></td>
</tr>
<tr>
<td>Michele G. Morrow, DO, FAAFP</td>
<td>is a board-certified family physician who merges mainstream and alternative medicine using functional medicine concepts, nutrition, and natural approaches.</td>
<td></td>
</tr>
<tr>
<td>Herbert Pardell, DO, FAAIM</td>
<td>practices internal medicine at the Emerald Hills Medical Center in Hollywood, FL. He is a medical director of the Life Extension Foundation.</td>
<td></td>
</tr>
<tr>
<td>Lambert Titus K. Parker, MD</td>
<td>practices internal medicine at the Integrative Longevity Institute of Virginia in Virginia Beach, VA.</td>
<td></td>
</tr>
<tr>
<td>Ross Peiton, RPh, PhD, CCN</td>
<td>is director of nutrition and anti-aging research for Intramedicine, Inc.</td>
<td></td>
</tr>
<tr>
<td>Patrick Quillin, PhD, RD, CNS</td>
<td>is a clinical nutritionist in Carlsbad, CA, and formerly served as vice president of nutrition for Cancer Treatment Centers of America, where he was a consultant to the National Institutes of Health.</td>
<td></td>
</tr>
<tr>
<td>Allan Rashford, MD</td>
<td>graduated from the University of Iowa Medical School. Upon completing medical training, he became chief of medicine at St. Francis Hospital in South Carolina, and he was later named president of the Charleston Medical Society.</td>
<td></td>
</tr>
<tr>
<td>Marc R. Rose, MD</td>
<td>practices opthalmology in Los Angeles, CA, and is president of the Rose Eye Medical Group. He is on the staffs of Pacific Alliance Medical Center, Los Angeles, and other area hospitals.</td>
<td></td>
</tr>
<tr>
<td>Michael R. Rose, MD</td>
<td>a board-certified ophthalmologist with the Rose Eye Medical Group in Los Angeles, CA, is on the staffs of the University of Southern California and UCLA.</td>
<td></td>
</tr>
<tr>
<td>Ron Rothenberg, MD</td>
<td>is a full clinical professor at the University of California San Diego School of Medicine and founder of California HealthSpan Institute in San Diego, CA.</td>
<td></td>
</tr>
<tr>
<td>Roman Rozencwaig, MD</td>
<td>is a pioneer in research on melatonin and aging. He practices in Montreal, Canada, as research associate at Montreal General Hospital, Department of Medicine, McGill University.</td>
<td></td>
</tr>
<tr>
<td>Michael D. Seidman, MD</td>
<td>is the regional coordinator of otolaryngology-head and neck surgery for the Bloomingfield satellite of Henry Ford Health System (HFHS), Detroit, MI, co-director of the Tinnitus Center, and co-chair of the Complementary/Alternative Medicine Initiative for HFHS.</td>
<td></td>
</tr>
<tr>
<td>Ronald L. Shuler, BS, DDS</td>
<td>CCN, LN, is involved in immunology for the prevention and treatment of cancer, human growth hormone secretagogues, and osteoporosis. Board certified in Anti-Aging medicine.</td>
<td></td>
</tr>
<tr>
<td>Paul Wand, MD</td>
<td>Fort Lauderdale, FL, is a clinical neurologist with special expertise in treating and reversing diabetic peripheral neuropathy and brain injuries from various causes.</td>
<td></td>
</tr>
</tbody>
</table>
SCIENTIFIC ADVISORY BOARD

Örn Adalsteinsson, PhD, is chairman of the Life Extension® Scientific Advisory board. He holds a master’s and doctorate from the Massachusetts Institute of Technology (MIT). He has specialized in human therapeutics including vaccines, monoclonal antibodies, product development, nutraceuticals, formulations, artificial intelligence, hormones, and nutritional supplementation. He has also authored articles and contributed to peer-reviewed publications and served as an editor for the Journal of Medicinal Food.

Aubrey de Grey, PhD, is a biomedical gerontologist and Editor-in-Chief of Rejuvenation Research, the world’s highest-impact peer-reviewed journal focused on intervention in aging. He received his BA and PhD from the University of Cambridge in 1985 and 2000 respectively. Dr. de Grey is a Fellow of both the Gerontological Society of America and the American Aging Association and sits on the editorial and scientific advisory boards of numerous journals and organizations.

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

Frank Eichorn, MD, is a urologist specializing in prostate cancer for 10 years. He has a private practice in Bad Reichenhall, Germany, and is prostate cancer consultant at the Urologische Klinik Castrignius, Planegg, Munich. In his integrative approach to prostate cancer he is working together with an international network of experts to improve treatment outcomes for prostate cancer patients with a special focus on natural and translational medicine.

Deborah F. Harding, MD, is founder of the Harding Anti-Aging Center. She is double board-certified in internal medicine and sleep disorder medicine. She also earned the Cogeneics certification in age management medicine. She is a faculty member of the new University of Central Florida Medical School.

Steven B. Harris, MD, is president and director of research at Critical Care Research, a company that grew out of 21st Century Medicine in Rancho Cucamonga, CA. Dr. Harris participates in groundbreaking hypothermia, cryothermia, and ischemia research. His research interests include antioxidant and dietary-restriction effects in animals and humans.

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

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

Peter H. Langsjoen, MD, FACC, is a cardiologist specializing in congestive heart failure, primary and statin-induced diastolic dysfunction, and other heart diseases. A leading authority on coenzyme Q10, Dr. Langsjoen has been involved with its clinical application since 1983. He is a founding member of the executive committee of the International Coenzyme Q10 Association, a fellow of the American College of Cardiology, and a member of numerous other medical associations.

Dipnarine Maharaj MD, MB, ChB, FRCP (Glasgow), FRCP (Edinburgh), FRCPath., FACP
Dr. Dipnarine Maharaj is the Medical Director of the South Florida Bone Marrow Stem Cell Transplant Institute and is regarded as one of the world’s foremost experts on adult stem cells. He received his medical degree in 1978 from the University of Glasgow Medical School, Scotland. He completed his internship and residency in Internal Medicine and Hematology at the University’s Royal Infirmary.

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

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

Jonathan V. Wright, MD, is medical director of the Tahoma Clinic in 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.
HOW MUCH CURCUMIN ARE YOU ABSORBING?

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

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

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

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

The suggested daily dosage of one softgel of Advanced Bio-Curcumin® with Ginger & Turmerones provides:

<table>
<thead>
<tr>
<th>Turmeric Phospholipid Blend</th>
<th>630 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCM-95® Bio-Curcumin Turmeric 25:1 extract (rhizome)</td>
<td></td>
</tr>
<tr>
<td>(total curcuminoids complex with essential oils (380 mg)), Turmeric oil (rhizome) (providing 60 mg total turmerones), Phospholipids</td>
<td></td>
</tr>
<tr>
<td>Ginger C0₂ extract (root) (providing 60 mg gingerols)</td>
<td>200 mg</td>
</tr>
</tbody>
</table>

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

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

Contains soybeans.

References

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

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

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

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.
Do you remember when your employer paid 100% of health insurance premiums for you and your family?

This free health insurance was widely available in the 1980s and usually covered every medical expense. Back in those days, you did not read about healthcare costs bankrupting individuals, municipalities, corporations, and potentially the federal government.

In the 1980s, we at Life Extension® were a lone voice warning of economic turmoil unless medicine was radically deregulated.

The government's response to our free-market approach was multiple seizures of products and relentless attempts to jail us. This was done at the behest of those in the mainstream who did not want their government-protected profit machine interfered with.

Move forward 30 years and exorbitant healthcare costs dominate the financial news. Politicians are desperately trying to figure a way out of a crisis their predecessors created.

You may wonder why no one has come up with a real-world solution. Omitted from the debate are the monopolistic pricing powers that regulations bestow to healthcare providers. These regulations (restrictions) preclude innovative competitors from entering the market, while creating mounds of burdensome bureaucracy.

Consumers pay for these regulations in the form of high prices, shortages, long waits, side effects, and inferior care.

Inherent inefficiencies within the former Soviet Union led to it collapsing within itself. These same ineptitudes exist with government-regulated medicine in the United States.

As we have exposed for 34 consecutive years, the cost of providing quality healthcare is a fraction of what is charged to individuals, insurance companies, and government programs by industries protected by authoritarian edict.

Our solution is quite simple. Tear down the regulatory barriers that cause medical costs to be so grossly inflated, and what appears to be a permanent healthcare cost crisis will disappear into the history books.
The media does some accurate reporting about outlandish medical prices, but the public quickly forgets the story. So we did some searching to see how many articles exposing medical-related price gouging we could find. The number was astronomical.

When one looks at the magnitude of medical price gouging, and how widespread it is, the reason that healthcare is today’s leading political issue becomes brutally apparent.

The underlying cause of this financial catastrophe are antiquated regulatory barriers that impede the introduction of more cost-effective ways of delivering better medical care to consumers. These senseless regulatory barriers enable hyperinflated prices since those offering superior medicine at lower prices are not allowed in.

What Life Extension predicted in the 1980s is happening before your eyes. Healthcare costs are spiraling beyond the affordability of the private and public sectors combined.

Markups Beyond Comprehension

A woman named Jeanne Pinder experienced medical price gouging first hand and uncovered numbers that even startled me.1

What caused her to be curious was an anesthesia bill for $6,000 from one hospital that was three-times higher than the anesthesia bill from another hospital in the same timeframe. She then questioned why an anti-nausea drug (ondansetron) was billed by the hospital at $1,419.

Jeanne found that the price of ondansetron from a local drug supplier was only $2.49. This indicated the hospital had marked up the price of this one drug by 569 times!

Jeanne then did some meticulous research to find out what various insurance plans would pay for ondansetron. For the same drug Jeanne was billed $1,419, the following insurance programs would pay:

<table>
<thead>
<tr>
<th>Insurance Program</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterans Administration</td>
<td>$15.76</td>
</tr>
<tr>
<td>Michigan Blue Cross Blue Shield</td>
<td>$17.60</td>
</tr>
<tr>
<td>Medicare</td>
<td>$24.36</td>
</tr>
</tbody>
</table>

The hospital charged $1,419 for a drug that cost less than $3 to buy. Jeanne’s investigation provides a real-world example of why healthcare costs have exploded beyond any real-world ability to afford.

Next time you’re told more money has to come out of your paycheck or pension to cover increased medical insurance premiums, or your private insurance rates go up, understand this is a facade designed to enrich the chosen few in the entrenched medical establishment. It has no basis in economic reality.

New York Times Exposes Egregious Markups

The New York Times published an article last year titled “How to Charge $546 for Six Liters of Saltwater.”2

This investigative report looked at what the manufacturer’s price was for saline IV solution and what hospitals billed to patients or their insurance carrier. It turned out that some of the patients’ bills included markups of 100 to 200 times over the manufacturer’s price, not counting separate charges for the administration of the IV solution.

How did the New York Times find out the saline cost? Manufacturers are required to report such prices annually to the federal government, which bases Medicare payments on the average national price plus 6%. The limit Medicare would pay for one liter bag of normal saline was $1.07 last year. Yet a bill from a New York hospital charged a private insurance company $91 for a bag of saline that cost the hospital just $0.59.

What consumers forget is that private insurance companies hike insurance premiums based on these inflated drug charges.
Corrupt Lobbying Causes Asthma Drug Price To Soar

When an off-patent asthma drug went back on-patent, its price soared from $15 to $100. The name of this old-line drug is albuterol and it is one of the most common asthma medications used.

The way this off-patent asthma drug got back on-patent provides a startling look into the insidious lobbying schemes behind today’s inflated drug prices. In order for albuterol to be readily inhaled into the bronchi, it requires a propellant. The propellant in all albuterol drugs was CFC (chlorofluorocarbon). CFC is the ozone-depleting agent that used to spew out of air conditioners, refrigerators, aerosol sprays, and many kinds of industrial equipment. CFC was banned from virtually all uses, but it was still permitted to be used in the small amounts contained in drugs like asthma inhalers until late last year.

Pharmaceutical companies that lost patents on medications that used CFC wanted to regain a monopoly on this lucrative market. So they went to the extreme length of contributing $520,000 to a supposed environmental protection group to lobby the FDA to remove CFC from all drugs. This consortium also aggressively developed patented combinations of albuterol and other inhalants with new propellants that won FDA approval.

This nefarious lobbying effort paid off. In 2005, the FDA approved an outright ban on many CFC-based inhalers starting in 2009. Subsequent bans took effect on other CFC drugs. Bear in mind that the consortium behind this lobbying scheme consisted of the same companies selling CFC-propelled drugs. They were effectively lobbying the FDA to ban their own drugs so they could monopolize the market with the new propellant versions they were patenting. CFC was the most effective medical propellant and according to some scientists, when compared to global CFC emissions, the tiny quantity used in inhalers posed no significant negative impact on the ozone layer.

The payoff for this deceptive lobbying campaign was a 6-fold increase in the price that could be charged for the new patented albuterol that was inferior to the previous CFC version in delivering the drug to suffocating asthmatics.

Schemes like this to rip off consumers are not exceptions. They are customary business practices of companies that routinely deceive the courts, Congress, and the FDA to deny generic competitors access to the market and stomp out the introduction of new medical products that could save lives and lower healthcare costs.

Do you see why there is no real healthcare cost crisis? There is instead a crooked marketplace dominated by lobbyists who use the government’s regulatory barriers to gouge the public with monopolistic prices.
force the government to set up a special website to determine which Americans were eligible for gasoline subsidies based on individual income levels.

Do you see what a mess this would create? There is no way that government could afford to subsidize these artificially inflated gas prices, nor could companies do so for their employees or unions for their members. Yet this is exactly what is happening with conventional medical costs. Prices are being corruptly inflated, and all Congress does is bicker as to who is going to pay it.

The harsh fact is that no one can afford to keep paying for something that is corruptly priced far beyond its free-market value. The fallout from this occurs before our eyes with the pending insolvencies of Medicare, Medicaid, municipal health plans, along with large swaths of the American economic landscape including the post office.

Medical care is not a luxury. It becomes a necessity when one falls ill. Medical care is so essential that hundreds of different state and federal government programs have been created to regulate and pay for it.

Yet many of these government programs encourage fraud and force inefficiencies. The end result has become price gouging so severe that medical care has become unaffordable to society as a whole.

By way of example, the average annual cost per household for healthcare is around $20,000. The average household, however, does not earn enough to part with $20,000, so no tax and redistribution system is ever going to work in the long run.

Common sense deregulation, on the other hand, would force vast improvements in healthcare while dramatically lowering costs. Compare this to the electronic industry, which has seen exponential technological enhancements, but constantly plummeting prices.

If these kinds of advances had ever been translated to the medical arena, cures for virtually every degenerative disease would likely have already occurred.

Proponents of government-subsidized healthcare fail to realize the inflationary impact it has on healthcare prices. When the Medicare Modernization and Prescription Drug Act of 2003 was passed, it gave pharmaceutical companies free reign to charge the federal

**Analogizing This To Gas Prices**

Just imagine if Exxon® wanted to monopolize the gasoline market and patented a less efficient way of refining crude oil into gasoline.

Then imagine Exxon® funds a fake environmental group to lobby the EPA (Environmental Protection Agency) to ban currently used refining methods. Exxon® would then monopolize the market with its patented refining method and be able to increase the retail price of gasoline from $3 a gallon to let’s say $18—the same 6-fold increase that occurred with albuterol. This would force consumers to spend over $300 to fill their tank.

Since most people cannot afford a $300 gas tank fill, Exxon® would need to emulate pharmaceutical companies and persuade the government to use tax dollars to subsidize their artificially inflated prices. This would force the government to set up a special website to determine which Americans were eligible for gasoline subsidies based on individual income levels.

Do you see what a mess this would create? There is no way that government could afford to subsidize these artificially inflated gas prices, nor could companies do so for their employees or unions for their members. Yet this is exactly what is happening with conventional medical costs. Prices are being corruptly inflated, and all Congress does is bicker as to who is going to pay it.

The harsh fact is that no one can afford to keep paying for something that is corruptly priced far beyond its free-market value. The fallout from this occurs before our eyes with the pending insolvencies of Medicare, Medicaid, municipal health plans, along with large swaths of the American economic landscape including the post office.

**This Catastrophe Is Avoidable**

Medical care is not a luxury. It becomes a necessity when one falls ill. Medical care is so essential that hundreds of different state and federal government programs have been created to regulate and pay for it.

Yet many of these government programs encourage fraud and force inefficiencies. The end result has become price gouging so severe that medical care has become unaffordable to society as a whole.

By way of example, the average annual cost per household for healthcare is around $20,000. The average household, however, does not earn enough to part with $20,000, so no tax and redistribution system is ever going to work in the long run.

Common sense deregulation, on the other hand, would force vast improvements in healthcare while dramatically lowering costs. Compare this to the electronic industry, which has seen exponential technological enhancements, but constantly plummeting prices.

If these kinds of advances had ever been translated to the medical arena, cures for virtually every degenerative disease would likely have already occurred.

**Fallacy Of Affordable Care Act**

Proponents of government-subsidized healthcare fail to realize the inflationary impact it has on healthcare prices. When the Medicare Modernization and Prescription Drug Act of 2003 was passed, it gave pharmaceutical companies free reign to charge the federal
government full retail price on prescription drugs covered by the Act. It should be no surprise that the Medicare Modernization and Prescription Drug Act of 2003 was written and pushed into law by pharmaceutical lobbyists.

The Affordable Care Act passed in 2010 is deceptively named. Premiums and co-pays for typical people are high, while annual deductibles are exorbitant. My private health insurance premium in 1982 was only $780 per year and paid full expenses for any hospital facility I chose in the United States. My deductible was virtually non-existent. The Affordable Care Act restricts where policy holders can get treatment, which can be a problem when a superior therapy is located outside one’s community hospital network.

Under the current so-called “Affordable” Care Act, young people today are paying around $3,000 a year for basic health insurance and are faced with annual deductibles of over $5,000! A significant percentage of the population does not have $5,000-$6,000 to cover their annual deductible, meaning the government-mandated insurance premiums they pay are often of little real-world value.

The more accurately defined “Unaffordable Care Act” has spawned fierce debate. When you see politicians attacking each other over how to best fund soaring sick care costs, remember that there is no real-world solution as long as the government grants monopolistic pricing power to conventional medicine. High medical prices would plummet in a deregulated environment, and the need for an “affordable” care act might become obsolete.

What You Can Do

The public is slowly recognizing the disconnection between medical costs and the inflated prices consumers are forced to bear. Media stories exposing overpriced healthcare are seen one day but often forgotten the next.

Politicians act oblivious to medical price gouging and can’t stop arguing about where the money should come from to fund bloated healthcare costs. If Congress just investigated why American medicine is so expensive, they might understand the need to remove archaic regulatory barriers that underlie the problem.

Three years ago, my book Pharmocracy was published for the purpose of exposing the flaws in the current regulatory system that cause healthcare to be so overpriced. I want to encourage members to not waver in this battle and to send a hard copy of Pharmocracy to their Representative and two Senators.

The cover price of Pharmocracy is $24. If members want to purchase three or more copies, we’re reducing it to just $5 per book, which include updates (like reprints of this article).

Rather than sit back and watch our nation financially flounder, I hope enough of our 200,000 members will order at least three copies of Pharmocracy and mail it, with the accompanying updated articles we’ll include, to their Representative and two Senators.

For longer life,

William Falloon

P.S. Turn the page to order three hard copies of Pharmocracy for $5 each—79% off the cover price!
References

**Pharmocracy** provides factual documentation to reform our nation’s broken healthcare system. It’s more than 300 pages long because there are at least that many reasons why medicine costs far more than it should. Until now, no one has identified and compiled the quagmire of illogical regulations that cause healthcare to be so overpriced.

Implementing the free-market approaches described in **Pharmocracy** can spare Medicare and Medicaid from insolvency while significantly improving the health and productivity of the American public. This groundbreaking book provides an irrefutable and rational basis to remove the suffocating compulsory aspect of healthcare regulation. It then documents how the free market can provide superior healthcare at far lower prices while better protecting consumers.

**Pharmocracy** provides a blueprint for motivated citizens to tear down the bureaucratic barriers that push healthcare costs beyond the financial reach of the typical American. You’ll find no other book quite like it. We urge you to order three books now for only $5 a copy so that you can send them to your Representative and two Senators. Consider also giving Pharmocracy as gifts to spread the word about how to reform our inefficient and corrupt sick care system.

To order three or more copies of **Pharmocracy** for only $5 each, call 1-800-544-4440 or visit www.lef.org/pharm today.
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.
Lower Vitamin D Levels Associated With Increased Coronary Artery Disease Severity

A study presented at the American College of Cardiology’s 63rd Annual Scientific Session reveals the finding of a correlation between declining vitamin D levels and increasing coronary artery disease (CAD) severity in a study of Italian men and women.*

The study included 1,484 subjects undergoing coronary angiography to evaluate arterial blood flow, which is impaired among those with atherosclerosis. Diameter reduction of 50% or more in at least one coronary artery was considered diagnostic of coronary artery disease. Deficient serum vitamin D levels, defined as 20 ng/mL or less, were uncovered in 70.4% of the subjects, among whom some were severely deficient with values of less than 10 ng/mL.

The presence of coronary artery disease was 32% higher among those with vitamin D deficiency, and nearly twice as high among subjects with severely deficient levels compared with those whose levels were normal.

Editor’s Note: Among those with deficiency, the risk of severe coronary artery disease affecting several vessels was 20% higher than that experienced by nondeficient subjects.

—D. Dye


High-Grade Prostate Cancer Associated With Chronic Inflammation

In an online article published April 18, 2014, in the journal *Cancer Epidemiology, Biomarkers & Prevention*, researchers at Johns Hopkins Kimmel Cancer Center reveal a link between chronic inflammation and a greater risk of high-grade prostate cancer.*

The study included 191 men with prostate cancer and 209 controls without the disease who received a placebo in the Prostate Cancer Prevention Trial, which evaluated the effect of finasteride on prostate cancer prevention. Biopsies conducted at the end of the study provided information on the presence of inflammation in benign prostate tissue.

Among men who had inflammation in one or more biopsy cores, there was a 78% higher risk of having prostate cancer and more than twice the risk of aggressive disease in comparison with subjects who had no cores indicating inflammation.

Editor’s Note: “What we’ve shown in this observational study is a clear association between prostate inflammation and prostate cancer, although we can’t prove that inflammation is a cause of prostate cancer,” senior author Elizabeth A. Platz, ScD, MPH, concluded. “I think there will be strategies going forward for either preventing inflammation or intervening when it occurs.”

—D. Dye

Reduced Vitamin D Levels Correlate With Greater Risk Of Fracture Among Women

A study presented at the World Congress on Osteoporosis, Osteoarthritis, and Musculoskeletal Diseases found a greater risk of fracture in older women with low levels of vitamin D measured over a five-year period compared to those with higher levels.*

Of the 1,044 women aged 75 years at the current study’s initial visit, 715 attended the five-year follow-up examination. Serum vitamin D levels measured at both visits were categorized as low, intermediate, or high. Women whose vitamin D levels fell into the same category during both visits were considered to have consistently low, intermediate, or high levels of the vitamin. The subjects were followed for 10 years, during which time any fractures were documented.

While 20.6% of women whose vitamin D levels measured consistently low experienced hip fracture, they occurred in just 9.9 and 6.9% of those whose levels were consistently intermediate or high.

**Editor’s Note:** “This study concludes that in the population sample of elderly women, vitamin D insufficiency sustained over five years was associated with increased 10-year risk of osteoporotic fracture,” stated researcher Kristina Åkesson, of Lund University’s Clinical and Molecular Osteoporosis Research Unit.

---

Glucosamine Extends Life Span In Mice

In May 2010, Life Extension Update reported findings from a study of supplement users that found a reduced risk of dying in association with the use of glucosamine and chondroitin over a five-year-period. Now, in this month’s issue of Nature Communications, Michael Ristow and colleagues at the University of Jena offer a reason why.*

In an earlier study, Dr. Ristow found a reduction in life span among roundworms given a diet high in sugar, whereas impairment of carbohydrate metabolism resulted in improved survival. In the current research, the team found that the administration of glucosamine resulted in an increase in roundworm lifespan of over 5% in comparison with no treatment. When glucosamine was given to 100-week-old mice, those receiving the compound experienced an increase in life span. Further investigation revealed that glucosamine increased the breakdown of amino acids, which is what occurs in the absence of dietary carbohydrates.

**Editor’s Note:** In regard to supplements, Dr. Ristow said, “This may be considered a valid option, and yes, I have started taking glucosamine myself.” He added that “diabetics should perform tight blood glucose control, especially during the first weeks.”

---

Health ABC Studies D

The April 2014 issue of the Journal of the American Geriatrics Society published findings derived from the Health, Aging, and Body Composition (Health ABC) study of a protective effect for higher vitamin D levels against cognitive decline over a four-year period.*

The current study included 2,777 well-functioning individuals between 70 to 79 years of age upon enrollment in Health ABC. Serum 25-hydroxyvitamin D levels were measured one year after enrollment, and cognitive function was evaluated at the beginning of the study and at four years.

Sixty-eight percent of the subjects had low vitamin D levels of less than 30 ng/mL. The researchers observed an association between lower cognitive test scores at the beginning of the study and higher vitamin D levels. When test scores at the end of the four-year period were analyzed, a greater decline was noted in association with low levels of vitamin D.

**Editor’s Note:** Lead author Valerie Wilson, MD, Assistant Professor of Gerontology and Geriatric Medicine at Wake Forest Baptist Medical Center, concluded that “Although this study cannot establish a direct cause and effect relationship, it would have a huge public health implication if vitamin D supplementation could be shown to improve cognitive performance over time because deficiency is so common in the population.”

---

* World Congress on Osteoporosis, Osteoarthritis, and Musculoskeletal Disease, Seville, Spain. Apr 4, 2014.


Primate Calorie-Restriction Study Confirms Longevity Benefits

The April 2014 issue of Nature Communications published the outcome of a 25-year study conducted at the University of Wisconsin-Madison, which confirms a positive effect for calorie restriction in rhesus monkeys. The finding contradicts conclusions drawn by National Institute of Aging researchers who reported a lack of a significant survival benefit in association with calorie restriction in a recent study.

Beginning at 7 to 14 years of age, 76 rhesus monkeys were given an unlimited control diet or one that contained 30% fewer calories than daily amounts measured before the beginning of the study. At any time point over the course of the study, the animals allowed to eat as much as they desired had a 78% higher risk of dying from any cause in comparison with those who received calorie-restricted diets. When age-related mortality was considered, non-restricted monkeys had a 2.9 times greater risk of death in comparison with restricted animals.

**Editor’s Note:** “We think our study is important because it means the biology we have seen in lower organisms is germane to primates,” commented Dr. Richard Weindruch, professor of medicine at the School of Medicine and Public Health and one of the founders of the study. “We continue to believe that mechanisms that combat aging in caloric restriction will offer a lead into drugs or other treatments to slow the onset of disease and death.”

---

Resveratrol Improves Glucose Control And Insulin Sensitivity In Diabetics

The results of a meta-analysis published in the American Journal of Clinical Nutrition indicate that supplementing with resveratrol, a compound found in red grapes and wine, could help improve glucose control and insulin sensitivity in men and women with diabetes without affecting glycemic measures in non-diabetics.*

Researchers from Chongqing, China, selected 11 randomized, controlled trials of resveratrol supplementation that included a total of 388 participants for their analysis. Resveratrol dose ranged from 8 to 1,500 mg/day for periods of two weeks to six months. Three of the trials involved diabetic subjects.

While resveratrol did not impact glucose, insulin, insulin resistance, or hemoglobin A1C in non-diabetics, these measures improved in those with diabetes. As potential mechanisms for resveratrol, authors Kai Liu and colleagues note that the compound has been shown to activate the expression of sirtuin 1, which benefits glucose control.

**Editor’s Note:** Resveratrol also increases the expression of the insulin-dependent glucose transporter GLUT4 and activates glucose uptake in the absence of insulin. —D. Dye

---

Correcting Low Vitamin D Levels Results In Weight Loss And Reduced Inflammation

The American Journal of Clinical Nutrition published the results of a vitamin D supplementation trial which found that correcting low vitamin D levels in women resulted in weight loss and a significant reduction in C-reactive protein (CRP), a marker of inflammation.*

Researchers from Chongqing, China, selected 11 randomized, controlled trials of resveratrol supplementation that included a total of 388 participants for their analysis. Resveratrol dose ranged from 8 to 1,500 mg/day for periods of two weeks to six months. Three of the trials involved diabetic subjects.

Among women whose vitamin D3 became replete at a level of 32 ng/mL or more, weight loss averaged 8.5 kg (18.7 pounds), while those whose levels failed to reach this amount lost an average of 5.6 kg (12.3 pounds). Vitamin D-replete women also experienced a significantly greater reduction in insulin levels, waist circumference, and body fat.

**Editor’s Note:** In those whose adherence to the vitamin D regimen was high, there was an average decline in C-reactive protein of 1.18 mg/L, while the placebo group experienced a reduction of 0.46 mg/L. The finding indicates a significant decrease in inflammation in association with vitamin D supplementation.

---

Higher Vitamin D Levels May Increase Survival Rates For Breast, Lymphoma, And Colon Cancer Patients

The results of a meta-analysis published in the *Journal of Clinical Endocrinology & Metabolism* revealed that cancer patients with higher baseline vitamin D levels at the time of diagnosis have better survival rates and remain in remission longer than patients who are vitamin D deficient.*

Hui Wang and colleagues at the Chinese Academy of Sciences in Shanghai reached their conclusion after analyzing the results of 25 different studies that examined vitamin D levels and death rates in 17,332 cancer patients. The study found cancer patients with a 10 nmol/L increase in 25-hydroxyvitamin D levels in their blood had a 4% higher survival rate than those with lower levels.

The scientists say the strongest link between vitamin D levels and survival was detected in patients with breast, lymphoma, and colorectal cancer. There was less evidence of a link between vitamin D and survival in lung, gastric, prostate, leukemia, melanoma, and Merkel cell carcinoma patients, but available data were positive.

Editor’s Note: “Physicians need to pay close attention to vitamin D levels in people who have been diagnosed with cancer,” Professor Wang says. “Considering vitamin D deficiency is a widespread issue all over the world, it is important to ensure that everyone has sufficient levels.”

—A. Kessler

* *J Clin Endocrinol Metab.* 2014 April 29.

Low Vitamin D Levels Linked To High Prostate Cancer Risk

Men at risk of prostate cancer are more likely to develop an aggressive form of the disease if they are vitamin D deficient, reveals a study published in *Clinical Cancer Research.* *

Study author Rick Kittles, Department of Medicine, University of Illinois at Chicago, says that while 25-hydroxyvitamin D is known to impact the growth of both benign and malignant prostate cells, this is the first study to link vitamin D deficiency and biopsy outcomes in high-risk men.

Researchers examined data from 667 men aged 40 through 79 who had elevated PSA levels or other risk factors for prostate cancer. The men were also screened for vitamin D levels.

Normal vitamin D levels are in the range of 30 to 80 ng/mL. Levels under 20 ng/mL were typical among all men tested.

About 44% of men with positive biopsies had low vitamin D levels. Among the men who tested positive for cancer after a biopsy, those with very low vitamin levels—under 12 ng/mL—had greater odds of more advanced and aggressive cancers than those with normal levels. And the lower the vitamin D level, the higher the risk.

Editor’s Note: “Vitamin D deficiency could be a biomarker of advanced prostate tumor progression in large segments of the general population,” said lead author Dr. Adam B. Murphy, of Northwestern University Feinberg School of Medicine. “More research is needed, but it would be wise for men to be screened for vitamin D deficiency and treated.”

—A. Kessler

* *Clin Cancer Res.* 2014, May 1;20: 2289-99.
Stay healthier longer with the hardcover or digital version of Disease Prevention and Treatment (5th ed.). It’s your ultimate medical reference guide.

Imagine, over 1,400 pages of breakthrough information that bridges the gap between cutting-edge science and mainstream medicine. All in one must-have volume. This is information you simply won’t find anywhere else, published by an organization passionate about keeping you younger and healthier longer.

It’s the smartest health care investment you can make.

Within Disease Prevention and Treatment, you’ll find the latest evidence-based protocols for managing 130 different health concerns … from cancer and cardiovascular disease to arthritis and neurological disorders. All documented by thousands of published studies from prestigious scientific journals. You’ll also learn how to use natural compounds, hormones, novel pharmaceutical agents, and preventive blood testing to complement mainstream therapies and live a long, healthy life. No other book on the market does all this!

After all, it’s been our mission for 34 years to provide you with this kind of lifesaving information. So we’ve packed Disease Prevention and Treatment with detailed suggestions that can help you break free of the conventional “one-size-fits-all” approach to disease management.

Available at Apple, Barnes & Noble, Amazon, & many other eBooksellers

Order now at www.lef.org/DPT5

NOW AVAILABLE IN BOTH eBook & Hardcover VERSIONS!

ORDER THE NEW eBook UP TO 76% OFF HARDCOVER LIST PRICE!

“A welcome resource for everyone interested in finding real solutions to health problems. Very impressive compilation of scientific findings in integrative health care and anti-aging. Well-written, understandable, and authoritative.”

Joseph Pizzorno, ND
Founder and President Emeritus of Bastyr University

“The breadth of thoroughly researched, innovative health content in Disease Prevention and Treatment is incredible. Everyone – patients and physicians alike – stands to benefit from owning this book.”

Julian Whitaker, MD
Whitaker Wellness Institute
ArthroMax® Advanced with UC-II® and AprèsFlex®

In addition to AprèsFlex®, ArthroMax® contains a novel form of undenatured chicken cartilage: UC-II®. Data show it helps with immune issues that can impact joint discomfort and ease of motion in aging individuals.

Two capsules of ArthroMax® Advanced with UC-II® and AprèsFlex® provide the following nutrients in one convenient, joint-protecting formula:

- UC-II® standardized chicken cartilage 40 mg
- Glucosamine sulfate 2KCl (from corn) 1500 mg
- AprèsFlex® Indian frankincense (Boswellia serrata) extract 100 mg
- Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®) 1.5 mg

The retail price of a bottle of 60 capsules of ArthroMax® Advanced with UC-II® and AprèsFlex® is $36. If a member buys four bottles, the price is reduced to $24 per bottle.

References

AprèsFlex® is a registered trademark of Laila Nutraceuticals exclusively licensed to PL Thomas—Laila Nutra LLC. U.S. Patent No. 8,551,496 and other patents pending. FruiteX B® and OsteoBoron® are registered trademarks of VDF FutureCentials, Inc. U.S. Patent No. 5,962,049. UC-II® is a registered trademark of InterHealth N.I. U.S. patents 7,846,487; 7,083,820 and EPO patent EP 1435906B1; Canadian patent CA 2459981C; and Japanese patent JP 4800574B2.

To order ArthroMax®, Advanced with UC-II® and AprèsFlex®, 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.
New research on the vital benefits of vitamin D emerges on a daily basis. Studies confirm that optimal levels of vitamin D are in the range of 50-80 ng/mL of 25-hydroxyvitamin D. Life Extension® has created a large selection of highly absorbable vitamin D supplements in softgels to help you to achieve your individual vitamin D goals. Keep in mind that you may already be getting 1,000-3,000 IU of vitamin D in your current multi-nutrient formulas.

**Vitamin D3 1,000 IU**
250 softgels • Retail: $12.50
Four-bottle Member Price: **$8.44 ea.**
For most people, a 1,000 IU potency is insufficient to attain optimal vitamin D blood levels. However, this potency may be suitable for smaller individuals who obtain 2,000-3,000 IU in their multi-nutrient formulas (and children). Item # 01751

**Vitamin D3 5,000 IU**
60 softgels • Retail: $11
Four-bottle Member Price: **$7.43 ea.**
For those already obtaining 1,000-3,000 IU of vitamin D in their multi-nutrient formulas, this 5,000 IU potency is what may be needed to achieve optimal blood levels. Item # 01713

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

**Vitamin D3 Liquid**
2,000 IU (Natural Mint Flavor)
1 ounce • Retail: $28
Four-bottle Member Price: **$18.75 ea.**
Great for travel and for those individuals who have difficulty absorbing enough vitamin D3 from softgels, this liquid vitamin D is ideal. Item # 01732
Also available without mint. (Item # 00864)

**Vitamin D3 7,000 IU**
60 softgels • Retail: $14
Four-bottle Member Price: **$9.45 ea.**
Some people (such as those weighing more than 180 pounds) may require even more vitamin D. When combined with 1,000-3,000 IU taken in a multi-nutrient formula, this 7,000 IU softgel should enable these individuals to attain blood levels above 50 ng/mL. Item # 01718

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

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

*If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.
Green tea is well known for its defense against some of the most common and deadly diseases in America, including cardiovascular disease, insulin resistance, obesity, autoimmune disorders, and cancer.

Recent developments have uncovered one of green tea’s most exciting benefits discovered to date: its potential to prevent—and possibly reverse—the effects of Alzheimer’s disease and other forms of dementia.

Alzheimer’s disease occurs as a result of your brain cells being impaired, and eventually killed. This is partially caused by the buildup of toxic protein fragments called amyloid-beta. Green tea gets to the root of Alzheimer’s disease by three distinct mechanisms: preventing the formation of amyloid plaques, breaking down existing plaques, and creating critical new neurons in the brain.

As a result, green tea consumption has now been associated with a 54% reduction in the risk of developing cognitive decline.
And now, in an exciting development, scientists have used *neuroimaging scanning* for the first time in a human clinical setting to demonstrate that *green tea extract* boosts activity in an area of the brain specifically used for working memory.19
How Alzheimer’s Disease Occurs

Alzheimer’s disease is the sixth leading cause of death in America and the fifth leading cause of death in those 65 or older. A shocking one in three seniors dies with Alzheimer’s or another form of dementia. Experts have recently predicted that the number of people living with dementia will nearly triple by 2050.

Alzheimer’s disease is a progressive, devastating, and eventually fatal neurodegenerative brain disorder. It is caused when tightly bound protein sheets known as amyloid plaques slowly form in the brain. These plaques eventually create neuronal damage and loss. Then, deprived of their oxygen supply, brain cells begin to die. Eventually, the result is memory and speech loss, diminished motor skills, and ultimately—death.

Amyloids are a complex of stable misfolded proteins, and no current drug therapies have been able to halt or reverse their deadly impact on the central nervous system. There are five drugs approved for Alzheimer’s, but they only partially treat some of the symptoms and only temporarily—for about six to 12 months—and only for about half of the patients who take them. That’s not a promising track record for these expensive pharmaceutical drugs.

Given this obvious void in either treating or preventing Alzheimer’s, scientists have continued searching for natural interventions that would battle the disease at its root: by inhibiting the formation and accumulation of the amyloid plaques and blocking them from being toxic.

Scientists have found that green tea has three distinct actions that reduce neurodegeneration and protect against Alzheimer’s by:

- Preventing formation of amyloid plaques that are characteristic of Alzheimer’s disease,
- Breaking down existing amyloid plaques by disrupting early-stage and late-stage aggregation processes, and
- Promoting the production of new neurons (neurogenesis) in the adult hippocampus, the area of the brain responsible for converting memories from short-term to long-term.

Combating The Underlying Factors Of Alzheimer’s

Green tea (Camellia sinensis) contains catechins, which are naturally occurring, multifunctional compounds that have been found to have potent neuroprotective effects. Specifically, the powerful green tea catechin epigallocatechin-3-gallate (EGCG) has been found to lessen cognitive impairments induced by psychological stress in rodent research, which suggests its potential to be an effective protector of brain neurons. EGCG has been shown to cross the blood-brain barrier in mammals.

Laboratory investigations have revealed that—unlike other flavonoids—green tea compounds are able to reduce neurodegeneration.

When the catechins in green tea were scientifically tested in a wide array of cellular models of neurological diseases, they exhibited dramatic iron-chelating, free-radical-scavenging, and anti-inflammatory activities. They were also neuroprotective in models of both Alzheimer’s and Parkinson’s disease.

Further investigation of these promising compounds showed that they enhanced gene modulating and cell-signaling activities, favorably increased detoxifying enzymes and antioxidant enzymes, and protected DNA against oxidative damage.

Combating The Underlying Factors Of Alzheimer’s

Green tea compounds have demonstrated additional actions on the factors involved in the development of Alzheimer’s disease.

Studies on brain hippocampal cells of rats showed that green tea extract inhibited the formation of amyloid-beta fibrils, or fine fibers. This was a crucial finding because these amyloid fibrils are implicated in neuron death and Alzheimer’s-related cognitive symptoms.
Amyloid-beta fragments (fibrils) require copper, iron, or zinc to aggregate into stable plaques.⁴⁸,⁴⁹ A 2013 study in the Proceedings of the National Academy of Sciences found that EGCG interfered with pathways involved in the binding of copper and zinc to amyloid-beta fragments, thus preventing the formation of larger, stable amyloid plaques.¹⁵

A 2010 study, documented in the Proceedings of the National Academy of Sciences, determined that the way EGCG stops the accumulation of amyloid-beta is by transforming amyloid fibrils into shapes that are stable and not toxic to cells.¹⁶,⁵⁰ Sticky and toxic amyloid aggregates of varying shapes adhere to neurons by attaching themselves to misfolded proteins called prions on the cells’ surfaces. The study found that EGCG changed the shapes of these amyloid fibrils so they could no longer bind to the prions.¹⁶

Once research determined the effect green tea had on the underlying factors involved in the process of developing Alzheimer’s disease, scientists set out to determine if green tea compounds would block actual neurodegeneration in experimental animals and—more importantly—in healthy humans.

**Green Tea Improves Age-Related Memory Problems**

Amyloid-beta plaques affect rodent brains similarly to human brains in that the accumulation of amyloid-beta quickly leads to the development of Alzheimer-like memory problems.⁵¹,⁵² This makes them especially valuable in Alzheimer’s research.

Scientists administered EGCG into a group of mice with simulated aging to determine its effect on age-related memory loss.⁵³ For this study, researchers divided healthy male and female mice into four groups: The first group received D-galactose (a type of sugar that causes accelerated aging,⁵⁴ but no EGCG); the second and third groups received D-galactose plus two different doses of EGCG; the fourth group received a placebo.⁵³

As expected, the group injected with D-galactose—but not with EGCG—showed learning and memory impairment in a water maze test, compared to non-aged controls. This was not surprising considering similar impairment occurs in aging humans and Alzheimer’s patients. In this aging-induced group, researchers also observed decreased activities of two powerful antioxidants, total superoxide dismutase (T-SOD) and glutathione peroxidase (GSH-Px). And in the hippocampus, they noted increased levels of malondialdehyde (MDA), a dangerous marker for oxidative stress. Cell death, or apoptosis, was also increased.⁵³

**What You Need To Know**

**What You Need To Know**

**Green Tea Extract Battles Alzheimer’s Disease**

- Amyloid-beta accumulates in the brain and occupies, and often kills, nerve cells—resulting in Alzheimer’s disease, the sixth leading cause of death in the US.
- A growing body of compelling evidence demonstrates that green tea extract greatly reduces the risk of Alzheimer’s and other forms of dementia.
- Researchers found that the potent green tea compound EGCG prevents amyloid plaque buildup, breaks down existing amyloid plaques, and triggers production of new neurons in the adult hippocampus.
- In an exciting breakthrough, scientists have used MRI scanning in a human clinical setting to watch in real time the immediate boost in working-memory activity that green tea extract produces—confirming the potent neuroprotection of green tea molecules.
Green Tea—A Wide Range Of Health Dividends

Although tea comes in many varieties, evidence suggests that the healthiest choice may be green tea, due to its high concentration of powerful polyphenols.

Beneficial polyphenols make up roughly 30 to 40% of green tea, as opposed to only 3 to 10% of black tea. The polyphenols in tea are classified as catechins, and of the eight catechins in green tea, epigallocatechin-3-gallate, or EGCG, is the most active.60

Green tea catechins scavenge oxygen-free radicals, restoring cells to health and reducing inflammation. Because inflammation underlies so many age-related afflictions, green tea may have a myriad of applications in preventing disease.61,62

Findings from animal studies suggest that green tea polyphenols promote the repair of damaged DNA. Since DNA damage can lead to cancer, green tea may play an important role in preventing cancer.63

The EGCG in green tea has been shown to produce apoptosis (cell death) in experimental prostate cancer, inhibit the growth of squamous cell carcinomas of the head and neck, inhibit the production and limit the invasion of experimentally induced breast cancers, reduce the incidence of carcinogen-induced lung cancers, and sensitize melanoma cells to growth inhibition by other agents.10-14,64

Green tea is also well-known to provide substantial defense against an array of diseases, including cardiovascular,1-3 insulin resistance,4 obesity,5-7 and autoimmune.8,9

High-quality extracts are available that provide green tea compounds standardized to 45% EGCG and 98% polyphenols so individuals can derive the maximum benefit from green tea without having to drink numerous cups of tea each day.

The two groups that were injected with both D-galactose and EGCG showed almost the opposite response of the D-galactose-only group. These groups experienced marked improvement in memory and learning deficits, elevated T-SOD and GSH-Px activities, decreased MDA contents in the hippocampus, and reduced cell apoptosis. The researchers concluded: “The results suggest that EGCG has potent neuroprotective effects on aging mice.”53

Green Tea Gets To The Root Of Alzheimer’s

This finding indicated that EGCG provides neurons with strong protection against the cognitive and memory impairments associated with aging. Scientists next wanted to determine if these effects occurred as a result of inhibiting the accumulation of amyloid plaques.

So in late 2013, researchers in China reporting in the journal Molecular Neurobiology, conducted a similar experiment—this time focusing specifically on the effects of EGCG on amyloid.55

In order to test this, investigators administered EGCG daily to age-matched, male and female APP/PS1 mice.55 (APP/PS1 transgenic mice are those that are genetically inclined to increased expression of amyloid precursor protein and amyloid-beta. They imitate the physical and behavioral changes of Alzheimer’s disease and have early-onset Alzheimer’s, and to a more intense degree, amyloid plaque buildup.)

As in the previous study, behavioral tests demonstrated that EGCG treatment had improved learning and memory impairment in the APP/PS1 mice, reduced the death of brain neurons, and significantly reduced hippocampal neurodegeneration after four weeks. However, this time scientists determined that EGCG also dramatically reduced the levels of amyloid
precursor protein and reduced the buildup of amyloid-beta plaques in the hippocampus.55

Together, these impressive findings answered the question as to whether EGCG can block the accumulation of amyloid-beta plaques and other factors associated with the development of Alzheimer's disease symptoms.

But Chinese researchers posed another extremely tantalizing question: If EGCG can prevent changes associated with the death of hippocampal neurons in the development of Alzheimer's, could it also trigger the production of new hippocampal neurons—in effect reversing the effects of this disease?

Shockingly, the answer is yes.

Reverse The Effects Of Alzheimer’s Disease

The production of new adult neurons, a process called neurogenesis, is the key feature of brain plasticity, which is critical to brain function as we age.17

Producing new adult neurons in the hippocampus (the part of the brain that converts information from short-term to long-term memory56) may serve as a new treatment strategy for early stage Alzheimer's or other forms of dementia.57 That's why scientists focused their attention on the effects of EGCG on neurogenesis in this specific area of the mouse brain.17

Amazingly, both the in vitro and in vivo results of this study showed that EGCG boosts the production of neural progenitor cells, which are brain cells that can transform into various types of neural cells.17,58

In order to determine if this increased brain-cell production would result in a direct boost in memory or spatial learning, the researchers gave one group of lab mice EGCG from green tea, while the other group was given a placebo containing no EGCG. The mice were subsequently trained for seven days to find a hidden platform.

The mice that were administered EGCG found the hidden platform substantially faster—indicating that EGCG's ability to enhance the production of new adult neurons had directly boosted learning and memory by improving object recognition and spatial memory.17

What's remarkable is that EGCG promotes the production of new neurons in the same area of the brain in which neurons are killed during the development of Alzheimer's disease!

How Green Tea Protects The Brain

EGCG is the most potent neuroprotective compound in green tea, as well as its most abundant polyphenol.60

Initially, researchers wondered if green tea's beneficial effects on the brain occurred as a result of its antioxidant activity.65 Although free-radical quenching may indeed play a part, a wealth of studies finally determined that EGCG's antioxidant activity could not fully explain its broad and powerful neuroprotective effects.66

Scientists now realize that EGCG's neuroprotection works through multiple higher-level mechanisms. Through a significant number of in vitro studies, it appears that EGCG protects the brain via at least nine mechanisms:

1. It interferes with the assembly of amyloid-beta proteins.67
2. It inhibits the formation of amyloid-beta fibrils, halting their aggregation to plaques.41
3. It prevents the proper binding of copper and zinc, which is required for the creation of stable amyloid-beta plaques.15
4. It changes the shape of amyloid fibrils, preventing them from binding to neuronal prions16 and transforming them into shapes that are not toxic to neurons.68
5. It inhibits the toxicity to neurons that would otherwise be induced by hydrogen peroxide69 and amyloid-beta.34,69-72
6. It prevents mitochondrial dysfunction, usually induced by amyloid-beta in brain cells.73
7. It normalizes responses of brain cells to an excitatory neurotransmitter (NMDA).74
8. It down-regulates pro-apoptotic genes.66
9. It up-regulates kinase enzymes, such as protein kinase C.72
This study offers an exciting look into the potential to not only prevent—but reverse—the effects of Alzheimer’s disease in the brain.

However, the real challenge was whether this effective green tea compound would deliver the same preventive effect to healthy humans.

**Live Images Reveal Immediate Memory Enhancement**

Data about the consumption of black, oolong, or green tea and cognitive function was obtained and examined for over 1,000 Japanese subjects age 70 or over during a period of four months. Analysis of the data revealed that consumption of 2 or more cups per day of green tea reduced the odds of cognitive impairment by 54%, whereas those that consumed equal amounts of black or oolong tea had an odds reduction of only 13%.20

However, this was a cross-sectional study that did not provide hard scientific evidence of effectiveness. To achieve more definitive results, scientists use double-blind, placebo-controlled studies. Unfortunately, it is extremely difficult to conduct intervention studies that would continually monitor human volunteers for adherence and allow for the time required to sufficiently establish, through memory tests, whether green tea enhances memory and recall.

But in a recent study published in the *European Journal of Clinical Nutrition*, scientists performed the first neuroimaging study allowing them to see the real-time effects of green tea extract inside the human brain’s working-memory area19

On four separate occasions, with a one-week interval between sessions, healthy volunteers between 21 and 28 years old consumed either a placebo drink, a **250 mL**, or a **500 mL** combination drink containing green tea extract. The researchers used a feeding tube to rule out taste as a factor.

After consuming the drink, the subjects then performed a memory-stimulating task while researchers simultaneously monitored their brain function using functional magnetic resonance imaging, or fMRI, to zero-in on the working-memory region.

Thanks to this imaging technique, rather than relying on possibly imperceptible differences in performance on a brief memory test following a single dose or even a week of supplementation—scientists could watch the volunteers’ working memories in action on a second-by-second basis.

Compared to placebo, the beverages containing green tea extract significantly boosted activity in the **dorsolateral prefrontal cortex**—the area of the brain used for working-memory processing.19,59 This small region allows the brain to simultaneously store and process information, and it facilitates complex cognitive tasks, such as language comprehension, reasoning, and learning.

Activity in this memory area was increased even further by the higher dose drink.19 This dose-related response backs up the cause-and-effect connection between green tea and improved memory processing.

Not only did this finding confirm green tea extract’s immediate and significant enhancement of working-memory activity, the researchers noted that it also established for the first time the effectiveness of neuroimaging in observing green tea’s instant impact on the human brain.19

Taken together, all of these findings indicate green tea extract’s marked protection of brain neurons by inhibiting the formation of amyloid-beta fibrils and other processes associated with Alzheimer’s disease and, possibly, by triggering the production of new brain neurons.
Summary

Amyloid-beta plaques slowly form in the brain and interfere with nerve cells, often killing them. The tragic result too often is Alzheimer's disease—the sixth leading cause of American deaths.

Accumulating evidence demonstrates that green tea extract may reduce the risk of Alzheimer's disease and other forms of cognitive decline by 54%.

Studies show that the powerful green tea compound EGCG prevents formation of amyloid plaques, breaks down existing amyloid plaques, and promotes production of new neurons in the adult hippocampus. In an exciting development, scientists used MRI scanning for the first time in a human clinical setting to watch the immediate boost in working-memory activity that green tea extract produces—illustrating in real-time the potent neuroprotection of green tea compounds.

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


FIGHT BACK AGAINST AGING!

Aging is characterized by inflammation, glycation, and mitochondrial decay.

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

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

- **CARNOSINE**: As humans age, proteins in their bodies become irreversibly damaged by glycation reactions. Glycation is the cross-linking of proteins and sugar to form non-functioning structures called advanced glycation end products, which can lead to alterations of normal cell function. Carnosine is not only a powerful anti-glycating agent, but it also protects neurons against reactive and cytotoxic protein carbonyl species associated with normal aging.1-10

- **PQQ**: This breakthrough micronutrient has been shown to trigger mitochondrial biogenesis—the growth of new mitochondria in aging cells!11 PQQ also activates genes involved in protecting the delicate structures within the mitochondria.7-10

- **LUTEOLIN**: Systemic inflammation is involved in most undesirable consequences of aging. Culprits behind inflammatory reactions are pro-inflammatory cytokines, such as interleukin-1 and tumor necrosis factor-alpha. Luteolin is a flavonoid that has been shown to help suppress these inflammatory cytokines.11-16

- **BENFOTIAMINE**: Effectively modulates multiple destructive biochemical pathways that are induced by higher than desirable blood glucose levels. Human mortality studies indicate that ideal fasting glucose levels are between 74-85 mg/dL. Yet many aging people have fasting glucose above 90 mg/dL, which is less than optimal.16-19 Benfotiamine protects endothelial cell integrity from the effects of high glucose levels. In addition, benfotiamine exhibits direct antioxidant capacity and supports DNA function.20

- **PYRIDOXAL 5'-PHOSPHATE**: Aging results in the formation of advanced glycation end products throughout the body. Pyridoxal 5'-phosphate is the active form of vitamin B6 that has been shown to protect against both lipid and protein glycation reactions.21-24

- **R-LIPOIC ACID**: Destructive free-radical activity in the mitochondria plays a major role in the loss of cellular vitality. A microencapsulated Bio-Enhanced® R-lipoic acid facilitates youthful mitochondrial energy output while guarding against free radicals. Two forms of lipoic acid are sold on the supplement market, but R-lipoic acid is far more potent.25-28

- **ACETYL-L-CARNITINE ARGINATE**: The amino acid L-carnitine is required to transport fats into the mitochondria to be burned for cellular energy. Acetyl-L-carnitine arginate is a patented form of carnitine that also supports neurites in the brain.29

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

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

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carnosine</td>
<td>1000 mg</td>
</tr>
<tr>
<td>ArginoCarn® Acetyl-L-carnitine arginate DihCl</td>
<td>675 mg</td>
</tr>
<tr>
<td>R-Lipoic acid (as microencapsulated Bio-Enhanced®)</td>
<td>150 mg</td>
</tr>
<tr>
<td>Benfotiamine</td>
<td>150 mg</td>
</tr>
<tr>
<td>Vitamin B6 (as pyridoxyl 5'-phosphate)</td>
<td>100 mg</td>
</tr>
<tr>
<td>BioPQQ®</td>
<td>10 mg</td>
</tr>
<tr>
<td>Luteolin</td>
<td>8 mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>230 mg</td>
</tr>
</tbody>
</table>

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

Bio-Effhanced® is a registered trademark of GenLedora Research, Inc. ArginoCarn® is a registered trademark of Sigma-Tau HealthSciences, and is manufactured exclusively under U.S. production patent 6,703,042 and worldwide production patent EP1202956. The combination of Acetyl-L-Carnitine and Alpha Lipoic Acid is patented by Sigma-Tau under U.S. patent 6,345,822. BioPQQ® is a registered trademark of MGC (Japan).
Few nutritional sources have gained as much scientific validation as pomegranate. The vast majority of research has focused on extracts from the fruit. Only recently have scientists identified the synergistic action of compounds specific to other parts of the pomegranate—most notably its seeds and flowers.

The Next-Generation Pomegranate Formula

Life Extension® offers an advanced, cutting-edge pomegranate formula that brings together novel phytonutrients in a unique, high-potency blend.

Full-Spectrum Pomegranate™ combines standardized extracts from the whole fruit and flower, along with pomegranate seed oil, to support system-wide health. In addition to the highly absorbable antioxidant powerhouses found in pomegranate fruit, Full-Spectrum Pomegranate™ augments these polyphenols with newly discovered biologically active compounds from other parts of the pomegranate plant.

These little-known nutrients include: punicanolic acid that provides cellular support to help with inflammation, and pomegranate, to combat age-related metabolic changes.

This superior formula supplies the complete nutritional profile of the pomegranate plant. Just one softgel of Full-Spectrum Pomegranate™ provides polyphenols equivalent to 12.3 ounces of pomegranate juice concentrate (or 30 pomegranates) plus a proprietary blend of seed oil and flower extract.

POMELLA® extract is covered under U.S. Patent 7,638,640 and POMELLA® is a registered trademark of Verdure Science, Inc.
Nearly 6,000 studies have been published on the broad-spectrum health benefits of green tea. Research shows that green tea favorably influences cardiovascular health, lipid clearance, glucose tolerance, healthy body weight, DNA repair, prostate and breast health, and healthy cell division.¹⁻⁸ Scientists have identified the polyphenol EGCG as the key compound for green tea’s multi-modal health benefits.⁸

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

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

References
SAFELY MANAGE MENOPAUSAL SYMPTOMS

During menopause, a woman undergoes profound and extreme biochemical changes in all aspects of her body. It can be one of the most trying periods in a woman’s life. Lasting up to 10 years, the menopausal transition includes well-known symptoms such as hot flashes, night sweats, mood swings, and sleep disturbances.\(^1\text{-}^5\) Menopause also increases the risk of heart attack and stroke,\(^8\) depression, osteoporosis, arthritis, dementia, and frailty.\(^3\)

While the troubling symptoms of menopause gradually fade as a woman completes the menopausal transition, the health risks remain or grow larger. By World Health Organization estimates, 1.2 billion women worldwide will be postmenopausal by the year 2030, making these health risks an impending public health disaster.\(^3\) And managing those symptoms is a clinical challenge, with few safe and effective options.\(^2\)

Until the turn of the 20th century, the standard management of menopause included administration of equine estrogens derived from horse urine (Premarin\(^\circledast\)) and progestin; a synthetic female hormone that is different than natural progesterone.\(^7\)

Fortunately, just when the risks of conventional hormone therapy were becoming evident\(^8\), data emerged showing that estrogen-like molecules from plant sources (phytoestrogens) could produce many of estrogen’s favorable effects minus most of the harmful ones. A 2013 study showed that these phytoestrogens were effective at decreasing hot flashes, irritability, and sexual problems.\(^9\)
Use of estrogen-like molecules from plant sources is growing increasingly popular, and intense scientific research has begun to reveal the remarkable effectiveness of plant extracts in achieving relief of menopausal symptoms, while at the same time providing protection against some of the very conditions that conventional hormone therapy is notorious for causing.10-13

Two important plant extracts lead the field in bioidentical hormone therapy for relief of menopausal symptoms. Prenylflavonoid molecules in hops include the most potent phytoestrogen discovered thus far,14-17 while lignans found in the Norway spruce combine mild estrogenic actions with potential anticancer, antimicrobial, anti-inflammatory, and immunomodulatory activities that neatly fill the needs of women as they approach and transition through menopause.18

Women who are undergoing or nearing menopause, and who would like to prevent or mitigate menopausal symptoms such as hot flashes and sleep disturbances, are increasingly interested in natural phytoestrogens from hops and spruce as an alternative to mainstream hormone replacement therapy.
In a human study, women undergoing menopause took a hops extract standardized to 100 or 250 micrograms/day of 8-PN or a placebo for 12 weeks. Even the lower dose of 100 micrograms 8-PN was significantly superior to placebo at reducing symptoms of menopause after only six weeks, especially the hot flash score on a standardized menopause scoring scale. A similar study, using 100 micrograms/day of 8-PN, demonstrated significant reductions after eight weeks of therapy on the same scores, as well as a patient-reported visual scale of menopausal symptoms.

Hops Battle Breast Cancer

Hops extracts, rich in 8-PN, provide relief of troubling menopause-associated symptoms. In addition, hops extracts are now beginning to show important and promising benefits in the fight to prevent cancer, particularly cancers of the breast, which are most commonly dependent on estrogen for their growth. The ability of hops as a plant-derived estrogen replacement therapy to prevent breast cancer is critical, especially since the mainstream's standard animal-derived estrogen replacement therapy has produced concerns regarding the risk of promoting such cancers due to excessive estrogen.

An important step in estrogen’s initiation of cancer is its conversion into a number of active carcinogens by liver enzymes. These enzymes, normally part of the detoxification process for external toxins, act on estrogen to create new toxins that have DNA-damaging effects.

Hops, and its natural active constituent 8-PN, inhibited these kinds of dangerous enzymatic reactions, reducing the amount of cancer-inducing DNA damage and blocking the malignant transformation of human breast cancer cells in culture. Quite recently, 8-PN has also been shown to inhibit growth of colon cancer cells in culture.

Even more impressive anticancer effects are attributable to another hops-derived biomolecule, xanthohumol, a flavonoid that has been described as a “broad-spectrum” cancer-preventive substance because of its large numbers of potential targets and mechanisms of action. A closely related molecule, isoxanthohumol, also present in hops is capable of being converted to estrogen-like 8-PN by bacteria living in the intestine. Due to natural variations in the makeup of the intestinal bacteria in each woman, the amounts of protective 8-PN available from dietary sources may vary considerably, leaving 60% or more of women with sub-optimal protection.

A Natural Solution For Menopausal Symptoms

Hops are the female flowers of the hop plant (Humulus lupulus). Their bitter, floral taste has been used for centuries as a flavoring and natural preservative in beer. But they also contain specialized glands that secrete powerful bioactive molecules with significant potential impact on human health.

Among these compounds is a molecule called 8-prenylnaringenin (8-PN), which research suggests is the most potent known phytoestrogen (plant-derived estrogen-like molecule). These estrogenic properties make hops and 8-PN extremely attractive for use during menopause, when estrogen levels drop and produce the disquieting symptoms of menopause.

The estrogenic properties of hops extracts, and particularly of 8-PN, are known to alleviate menopausal symptoms and disorders, including osteoporosis, hot flashes, and low sex drive. 8-PN is known to be rapidly and almost completely absorbed after oral dosing.

Studies in rats whose ovaries had been removed in order to produce experimentally-induced menopause show that the animals underwent hot flashes, just like women. Administration of either estrogen or 8-PN from hops was able to reverse these symptoms (measured as increased temperature of the tail skin). Further studies revealed that this effect is at least partly the result of 8-PN binding to and activating estrogen receptors in tissues outside of the brain.
Can Drinking Beer Battle Breast Cancer?

With this discussion about hops, you might be wondering if drinking beer is a viable option for reducing the symptoms of menopause and preventing breast cancer. Unfortunately, the answer is no.

Since the concentration of beneficial hops molecules varies greatly between beer brands and styles, even regular beer consumption cannot guarantee adequate protection either against menopausal symptoms or against cancer.15 Beer also brings with it a sizable calorie load, and the alcohol content is not acceptable to many people.

Fortunately, hops extracts rich in 8-PN and xanthohumol are now available. Laboratory testing shows that these molecules accumulate in the liver and mammary glands following supplementation, where they induce important genetic control systems that protect cells.21 Following treatment with 8-PN and xanthohumol, breast cancer cells in culture showed decreased pro-oxidant production, improved mitochondrial function (a known factor in cancer prevention), and increased expression of the life-extending molecules called sirtuins.30,31

There may be additional benefits to supplementing with hops extracts, even beyond menopause and cancer prevention. 8-PN was shown in a mouse model to prevent the atrophy of skeletal muscle (sarcopenia) that is so common in older adults. Such beneficial effects on muscle might help older adults retain their strength, which in turn may help to prevent falls and other traumatic events.32

Hop extracts also show strong neuroprotective effects, promoting new brain cell growth and regeneration, and outgrowth of new neurites, the tiny spikes that brain and nerve cells use to contact and communicate with one another.16

Cut Hot Flashes In Half

The Norway spruce (Picea abies) produces abundant quantities of the plant lignan 7-hydroxymatairesinol, or HMR. In the digestive tract, HMR is converted to an active compound called enterolactone.18,33-35 Both HMR and enterolactone are mild phytoestrogens, and as such, offer additional support for women undergoing menopausal transition.18,35,36

In one important study, menopausal women supplemented with either 36 or 72 mg of HMR lignan per day for eight weeks.37 The supplement was readily absorbed and distributed in the women’s bodies, raising 7-HMR levels in the blood by 191% in the lower-dose group, and by 1,238% in the higher-dose group. The higher dose also produced a 50% reduction in the mean number of weekly hot flashes, from 28 to 14.3.

What You Need To Know

Phytoestrogens Battle Menopausal Symptoms And Reduce Breast Cancer Risk

- During transition through menopause, falling estrogen levels produce a host of disquieting and disturbing symptoms that many women find nearly intolerable.
- Menopause has also been associated with major age-related diseases such as cardiovascular disease, stroke, cancer, dementia, and osteoporosis, as the protective effects of estrogen are withdrawn.
- Conventional treatment with estrogen derived from horse urine plus progesterone has been shown to be flawed; while effective at reducing symptoms, this treatment actually raises the risk of many chronic conditions, and is no longer routinely recommended.56,57
- Treatment with estrogen-like compounds derived from plants (phytoestrogens) has been shown to be effective at improving many menopausal symptoms, and may provide protection against the very conditions that are aggravated by conventional treatment.
- Hops are an abundant source of the most potent known phytoestrogen, 8-prenylnaringenin, and other important women’s health molecules.
- Norway spruce provides abundant amounts of the lignan 7-hydroxymatairesinol, a highly cancer-protective compound that also offers symptomatic relief of hot flashes and other menopausal complaints.
Safely Lower Breast Cancer Risk

In addition to drastically cutting the number of hot flashes, there is also exciting news about HMR lignan in the prevention of breast and other cancers. Several different epidemiological and laboratory studies have shown that diets rich in plant lignans are likely to reduce the risk of human breast cancer. This is likely due to the ability of HMR lignans to sharply reduce the concentrations of reactive oxygen species that damage DNA to trigger cancers, and also their ability to suppress inflammatory actions to slow promotion and progression of malignancies.

Studies in rats with experimentally induced breast cancer show that HMR, at a dose equivalent to 180 mg/day in humans, decreases the number of growing tumors and increases the proportion of tumors that regress and stabilize. A lower dose (equivalent to 56.4 mg/day in an average human) given before experimental tumor induction was shown to reduce the size and growth of tumors, while the same dose given even after tumors were established inhibited their growth.

Other studies show that HMR helps inhibit tumor development in liver cancer cells and helps stop the spread of tumors in rats carrying liver cancers.

Toxicity studies have demonstrated no adverse effects at doses up to a human equivalent of 1,920 mg/day, making HMR lignan a safe supplement.

Nutrients Proven To Ease Menopausal Symptoms

In addition to the benefits provided by phytoestrogens and other protective molecules in hops polyphenols (8-PN) and spruce lignans (HMR lignan), a handful of other nutrients have shown promise in easing the menopausal transition and protecting against breast cancer. Here is a brief summary of some of the most effective nutrients:

- **Cruciferous vegetables**, especially broccoli, are rich in biomolecules called isothiocyanates, which are potent inhibitors of liver enzymes that activate potential carcinogens, including estrogen. As a result, consuming cruciferous vegetables promotes breast health and can reduce the risk of breast cancer by as much as 40%. Eating large amounts of broccoli (more than a pound per day) shifts the important ratio of estrogen 2:16 hydroxy metabolites in favor of the protective 2-hydroxy molecule. In order to get the most benefit, consider taking concentrated broccoli extracts.

- **Dong quai** has a long history of medicinal use in Asia for menopausal symptoms. Modern studies reveal that extracts of the plant have estrogenic effects in menopausal rats, suggesting a mechanism of action for its ancient properties. There is also some evidence that extracts may be useful in treating female arousal disorders, which are common around the time of menopause.

- **Vitex agnus-castus** (Chasteberry) contains compounds in both the berry and the leaf that have been shown to induce relief of common menopausal symptoms. Studies attribute these effects to activation of estrogen receptors, indicating that the plant has beneficial phytoestrogen properties.
How To Measure Breast Cancer Risk

Of special importance, a recent study demonstrated that when HMR lignan is combined with indole-3-carbinol, a beneficial compound in broccoli and other cruciferous vegetables, it produces a vital shift in the ways that natural estrogen is metabolized in a woman’s body.

Although estrogen is a natural hormone produced by both women and men, it undergoes chemical changes through the actions of enzymes in the liver. One of those enzyme systems produces so-called 2-hydroxy estrogen breakdown products, while the other produces 16-hydroxy versions of the molecule. The 2-hydroxy version appears to offer protection against breast cancer, while the 16-hydroxy version remains powerful enough to raise a woman’s chances of developing breast cancer. The ratio of 2-hydroxy to 16-hydroxy molecules is therefore a good measure of a woman’s breast cancer risk, with the higher the ratio (meaning more beneficial 2-hydroxy and less dangerous 16-hydroxy), the lower her risk. In the recent study, a breast health nutritional formula containing HMR lignan plus indole-3-carbinol was shown to be capable of shifting estrogen metabolism toward the 2-hydroxy version and raising the 2:16-hydroxy ratio; an important step in minimizing the risk of breast (and possibly other) cancers.

Summary

Replacing estrogen lost to menopause was once relegated to taking unnatural-to-the-body estrogen drugs and dangerous synthetic progestins (which is not the same as progesterone). These pharmaceutical approaches are declining as maturing women insist on natural hormone replacement protocols.

Treatment with plant-derived, estrogen-like molecules called phytoestrogens and natural progesterone are showing great promise in relieving symptoms of the menopausal transition and at restoring some of the protection enjoyed by premenopausal women against cancer and other chronic conditions.

Extracts of hops and Norway spruce are rich in such phytoestrogens, as well as in other molecules that protect women against low-estrogen-induced conditions. These molecules have now been studied and appear to lead the field in the combination of symptom relief and protective effects.

Additional plant extracts, many of them in use for centuries in traditional medical systems, can add further symptomatic relief and disease-preventive effects. These natural plant derivatives are increasingly being made available in convenient combination formulations.

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


Many aging individuals find themselves under assault from rising blood sugar levels. Despite a healthy diet and exercise, blood sugar levels can rise due to a number of factors including excess glucose production and excessive carbohydrate consumption. This can lead to a number of health issues, including excess glucose in the bloodstream, which can be harmful over time. The result is that even health-conscious, active people can experience higher-than-desired blood sugar levels as they age.

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

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

MULTI-PRONGED APPROACH

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

**Sorghum Extract**

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

- Balances the rate of sugar manufacture in the liver (gluconeogenesis).³
- Promotes insulin sensitivity.⁶
- Regulates PPAR-gamma, a metabolic thermostat controlling glucose metabolism.⁴,⁵
- Regulates the enzyme alpha-amyrase, which in turn controls the release of sugar found in starch.⁴,¹⁴

**Mulberry Leaf Extract**

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

- Targets the alpha-glucosidase enzyme to regulate conversion of starch into glucose.⁶,¹⁰
- Supports glucose transporter GLUT4 that moves glucose out of the bloodstream and into muscle and liver cells.³,¹²
- Promotes insulin sensitivity.¹³

**Phloridzin**

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

- Targeting carrier protein SGLT1, in turn helping to block the absorption of glucose into the bloodstream.⁷,⁸,¹⁶
- Targeting carrier protein SGLT2, in turn supporting glucose elimination via urine.¹⁷,¹⁸

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

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

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

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

**References**


To order Life Extension® Tri Sugar Shield™, 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.
Women suffering menopausal symptoms are challenged to safely manage night sweats, hot flashes, moodiness, and depression.

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

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

- **Hops Extract:** Clinically shown to reduce frequency of hot flashes by 50%¹ and improve various other menopausal discomforts.²
- **Lignan Extract:** Clinically shown to block some of estrogen's unwanted effects.³
- **Licorice Extract:** Clinically shown to reduce the severity and frequency of hot flashes.⁴
- **Broccoli Extract:** Found to modulate estrogens and maintain healthy cell division.⁵
- **Dong Quai:** Believed in Chinese medicine to help with menstruation and menopausal symptoms.⁶
- **Chasteberry Extract (Vitex agnus-castus):** Shown to support hormone and neurotransmitter balance, which is important for relief of menopausal symptoms.⁷,⁸

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

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

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

Contains soybeans.

**References**


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

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

Natural Relief Of
MENOPAUSE SYMPTOMS
Remove **Dark Pigmentation** Characteristic Of Aging Skin

Combating fine lines and wrinkles usually tops the list when it comes to retaining a youthful appearance, but ignoring an uneven skin tone and unwanted pigmentation can add years to your perceived age.

Over time, your picture-perfect complexion begins to display **hyperpigmentation** in the form of undesirable **dark patches**, unsightly brown and black growths, and mottling in the skin. An interesting research finding demonstrated that hyperpigmentation can make you look up to 20 years older!1

**Hyperpigmentation** stems from enhanced production2 and uneven distribution of **melanin**,3 the skin’s predominant pigment. While **hydroquinone** remains the gold standard for treating this common condition,4 it has fallen out of favor due to published studies reporting its allergenic5,6 and carcinogenic properties.7,8 This has sparked interest in agents that have comparable skin-lightening effects to hydroquinone without the serious side effects.

In this article, you’ll learn how three natural compounds work through multiple mechanisms to normalize melanin output and promote its even distribution in the epidermis for the appearance of even-toned, younger-looking skin.
Targeting Melanogenesis

As we age, melanin-synthesizing cells known as melanocytes become victim to excess sun exposure, inflammation, free radicals, and hormonal changes.\(^9,10\)

This triggers melanocytes to overproduce melanin, resulting in its uneven distribution in the epidermis. The outward appearance of hyperpigmentation and dark spots soon follows, with some of the most common sites being the face, arms, back, and hands.\(^1,11\)

The process of melanin synthesis (melanogenesis) can be narrowed down to the following three steps, regardless of the initiating factors involved: An early rate-limiting step involves the transformation of L-tyrosine to L-DOPA through tyrosinase or tyrosine hydroxylase. Then a series of intramolecular transformations occur, continuing the process of melanogenesis. Finally, mature melanosomes are transferred to more superficial keratinocytes. There, melanin provides skin color and frontline protection against the damaging effects of UV rays.\(^9,12\)

As we age, this process becomes dysregulated, causing the skin’s outward appearance to develop unsightly dark spots and uneven areas of hyperpigmentation.

After rigorous research and testing, scientists have zeroed in on three ingredients that intervene in melanogenesis to favorably modulate skin pigmentation.

Alpha-Arbutin

Since the key enzyme tyrosinase is a regulator of melanogenesis, it is a prominent target to control melanin formation and improve age-related skin discoloration. Scientists have discovered that alpha-arbutin, a compound derived from the leaves of the bearberry plant, exhibits a strong inhibitory effect on tyrosinase. This helps explain why a human skin model treated with alpha-arbutin decreased melanin synthesis by 60% compared to a control.\(^13\)

The ability of alpha-arbutin to dramatically decrease melanin production has translated into impressive findings in humans, with studies showing it has significantly faster skin-lightening effects than other commonly used agents. In one study of 80 participants, scientists compared the efficacy of alpha-arbutin against hydroquinone and kojic acid for decreasing hyperpigmentation. They found that topical application of alpha-arbutin increased skin lightness 60% over hydroquinone, and 25% over kojic acid. Both these results were observed after just one month!\(^14,15\)

Liver spots (age spots) are the visible consequences of chronic sun exposure. A three-month study revealed that more than 80% of participants who topically applied a formulation of alpha-arbutin showed noticeable reductions in the appearance of liver spots.\(^14,15\)

Phyllanthus Emblica Extract

*Phyllanthus emblica*, also known as Indian gooseberry, has a long history in Ayurvedic medicine for treating a variety of health ailments, from gastrointestinal disorders to liver diseases.\(^16\)

The latest research indicates that it can now add effective skin lightener to its already impressive resume.

In the laboratory, a standardized extract of *Phyllanthus emblica* displayed potent free-radical scavenging activity.\(^17\)

Oxidative stress may be an early step in the activation of tyrosinase.\(^18-21\)

It also binds to copper, which is required for tyrosinase function.\(^17\)
In human studies, extracts of *Phyllanthus emblica* were superior to both vitamin E and the conventional skin lightener *magnesium ascorbyl phosphate* (MAP) in preventing and reversing UV-induced pigmentation.\(^{17}\) One study showed that human volunteers applying a topical preparation of *Phyllanthus emblica* twice daily for nine weeks had markedly lighter skin at the study's end compared to those applying MAP.\(^{17}\)

Another study compared *Phyllanthus emblica* extract to hydroquinone for reducing upper arm hyperpigmentation. Subjects applied a topical application of either *Phyllanthus emblica* or hydroquinone twice daily to the designated area for six weeks. Researchers used the parameter *individual typology angle* (ITA°) to evaluate the intensity of skin pigmentation, with a higher ITA° signifying lighter skin. They found that treatment with *Phyllanthus emblica* extract significantly increased ITA° and was as effective as hydroquinone. This research demonstrates that *Phyllanthus emblica* provides similar skin-lightening properties to hydroquinone without the adverse effects.\(^{17}\)

When investigators examined the impact of *Phyllanthus emblica* extract on freckles in 19 patients, they observed that 89.5% of participants experienced significant fading of freckles in the facial area after just eight weeks.\(^{17}\)

**Niacinamide**

While alpha-arbutin and *Phyllanthus emblica* extract inhibit melanin synthesis to lighten discolored areas of the skin, a derivative of niacin (vitamin B3) known as niacinamide operates through an entirely different mechanism to provide the same benefit.

Scientists found that niacinamide suppressed the transfer of melanin to nearby keratinocytes on the surface of the skin by up to 68%.\(^{22}\) In other words, niacinamide blocked the accumulation of melanin in the epidermis that contributes to skin darkening.

In a double-blind clinical trial of 18 women aged 25-60, topical niacinamide was applied twice daily! to one side of the face and placebo to the other for eight weeks. Compared to baseline, the treated group reduced total area of hyperpigmentation by 25% versus only 15% in the placebo group. More subjects in the niacinamide group reported lighter skin than in the placebo group.\(^{22}\)

One of the most common and hard-to-treat skin disorders is *melasma*, a condition characterized by facial hyperpigmentation.\(^{23}\) Although it affects both sexes, melasma occurs more frequently in women.\(^{24}\) Eight weeks of topical niacinamide was shown to be nearly as effective as hydroquinone for treating melasma.
Even better, niacinamide produced fewer side effects than its counterpart. This led the researchers to conclude that niacinamide was “an effective, integral, and safe therapeutic alternative in the melasma treatment.”

Summary
Marked changes in the skin’s primary pigment melanin results in undesirable hyperpigmentation that can add years to your perceived age. Fortunately, a topical cream has been formulated with three natural compounds that show comparable skin lightening effects to hydroquinone without the serious side effects. Three ingredients, alpha-arbutin, Phyllanthus emblica extract, and niacinamide, beneficially modulate melanin synthesis and transfer to reduce the visual appearance of age spots, freckles, and melasma. This translates into more even-toned, radiant, younger-looking 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
Scientists have discovered that an extract of the fern Polypodium leucotomos helps inhibit cellular changes in the skin that can lead to premature aging due to sun exposure.\(^1\)

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

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

**Oral Sun Defense**

FernBlock® has shown remarkable effectiveness in promoting skin defenses against harmful solar radiation.\(^4-7\)

FernBlock® in this oral formulation works by promoting the body’s ability to inhibit absorption of ultraviolet rays and to quench the free radicals that this type of radiation can generate.\(^5,6\) In one clinical study, Polypodium leucotomos offered significant protection against the sun’s rays, even for those taking medication that causes increased sun sensitivity.\(^8\) The study subjects experienced an almost three-fold increase in the amount of time they spent in the sun.

**Enhanced FernBlock® Formula**

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

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

In a controlled human trial, 15 days of oral supplementation with Red Orange Complex was demonstrated to measurably support natural skin defenses against ultraviolet radiation.\(^11,12\)

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

Note: This product is not a sunscreen.

---

**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.
The scalp and hair follicles play a critical role in the health of the hair, and they’re continually challenged by chemical, mechanical, and environmental stressors.

A novel plant extract derived from the rare Argan tree—enhanced by supporting compounds—protects and stimulates the activity of self-renewing dermal stem cells. This serves to moisturize the scalp, provide nutrients to every strand of hair, and sustain a strong hair growth cycle.¹,²

ARGAN OIL
The new Rejuvenating Scalp Serum contains Argan oil, which is unlike any other oil. It is a “dry” oil, easily absorbed by the skin so it leaves no residue or build-up on the hair or scalp. Argan oil has been shown to be exceptionally effective at targeting scalp skin cells to prevent dry scalp conditions, nourish hair follicles, and revive dull, tired, brittle hair.²

The effectiveness of the Argan oil in Rejuvenating Scalp Serum is enhanced by four compounds:

1. Procyanidin B-2 to support hair growth.³⁻⁵
2. Biotin to help support hair growth.⁶
3. Copper to support hair follicles.
4. Tea extracts to inhibit free radicals that cause dryness, itchiness, and dullness of the scalp.

SCALP AND HAIR HEALTH
The suggested use of Rejuvenating Scalp Serum is to massage 3-5 drops into the scalp each day. This will:

• Improve the health of the scalp.
• Actively nourish hair follicles.
• Promote natural hair growth cycle.
• Lock in moisture for a silky shine.
• Promote strong hair fibers.
• Improve hair texture and volume.

A 2-ounce bottle of Cosmesis Rejuvenating Scalp Serum retails for $46. If a member buys two bottles, the price is reduced to $29.25 per bottle.

References

To order Cosmesis Rejuvenating Scalp Serum, call 1-800-544-4440 or visit www.LifeExtension.com
Uneven skin color and age spots can make skin look old beyond its years.

Age spots and discoloration begin when melanin, the skin’s predominant pigment, is overproduced\(^1\) and unevenly distributed.\(^2\) This is medically termed hyperpigmentation.

**Cosmesis Advanced Lightening Cream** contains three natural compounds that, in combination, correct skin tone and dark spots—resulting in younger-looking skin.\(^3\)-\(^7\)

1. **Alpha-arbutin**, derived from bearberry plant leaves, removes pigment from age spots and helps inhibit further melanin production (melanogenesis) by up to 60%.\(^3\)
   In one clinical study, over 80% of individuals who topically applied alpha-arbutin showed noticeable reductions in the appearance of age spots in just three months.\(^4\)-\(^5\)

2. **Indian gooseberry** binds to copper, which inhibits an enzyme (tyrosinase) involved in melanin production.\(^6\)
   Scientists found that topical application of **Indian gooseberry** extract substantially faded facial freckles for 89.5% of participants—after just eight weeks.\(^6\)

3. **Niacinamide**—a derivative of vitamin B3 or niacin—evens out skin coloration via a different mechanism: It suppresses transfer of already produced melanin to the main cells on the skin surface (keratinocytes) by up to 68%.\(^7\)

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

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

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

**To order Cosmesis Advanced Lightening Cream, call 1-800-544-4440 or visit www.LifeExtension.com**

---

**References**

The Little-Known Benefits Of Tocotrienols

If your vitamin E supplement contains only tocopherol forms, you may not be getting all of the benefits this nutrient has to offer. While tocopherols are very important, they lack many of the synergistic benefits offered by their cousins, the tocotrienols.

Few people realize that vitamin E is composed of eight different compounds. Half of these are called tocopherols, which is the most common form of vitamin E. The other half are known as tocotrienols.

Scientists are discovering that tocotrienols provide valuable therapeutic and preventive options for the diseases of aging that tocopherols alone may not provide.

For example, researchers found that tocotrienols given to mice with pancreatic cancer significantly improved their survival. Only 10% of animals in the control group survived for the study period while 70% of those taking tocotrienols survived! Pancreatic cancer is a particularly fast-moving and lethal form of cancer, and this study presents a promising new treatment option.
Beyond cancer, research is showing that tocotrienols have a place in reducing important risk factors for some of the most lethal chronic diseases. For example, tocotrienols have been found to promote new artery formation after a stroke, lower homocysteine levels, improve insulin sensitivity, protect vital brain circuitry, and even prevent bone loss.²⁻⁵

In addition, tocotrienols have powerful lipid-lowering, anticancer, and neuroprotective properties that tocopherols lack.⁶⁻⁷

These recent investigations into this overlooked form of vitamin E are providing new strategies to fend off multiple risk factors to ensure optimal health.
**Tocotrienols And Cancer**

For many years, studies of vitamin E produced inconsistent results regarding its effect on cancer. It is now thought that this inconsistency was likely due to the widespread use of alpha-tocopherol alone in such studies.\(^8\) We now know that alpha-tocopherol has weak anticancer activity, while tocotrienols are more potent cancer-preventive agents.\(^8,10\)

In a recent finding that stunned researchers, tocotrienol supplementation was found to dramatically extend the life span of mice with pancreatic cancer.\(^9\) Pancreatic cancer is among the most aggressive and deadly human cancers, with survival times typically counted only in months.\(^11,12\) The 2013 study showed that after 16 weeks of treatment, just 10% of placebo-treated mice remained alive, while 30% survived in a group treated with gemcitabine, a standard chemotherapy drug. However, a remarkable 70% of mice had survived in the tocotrienol group. Combination treatment with gemcitabine and tocotrienols produced a remarkable 90% survival rate.\(^1\)

Tocotrienols are the ultimate multi-targeting nutrient when it comes to cancer. Their actions affect virtually every step in the progression of cancer.\(^13\) They share antioxidant effects with tocopherols, but there seems to be a considerable amount of anticancer action that is unrelated to antioxidant actions.\(^13,14\)

**Proposed Mechanisms Of Tocotrienols In Cancer Prevention\(^{13}\)**

<table>
<thead>
<tr>
<th>Effect (programmed cell death)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apoptosis</td>
<td>Tumor cell death</td>
</tr>
<tr>
<td>Cell cycle arrest</td>
<td>Slows tumor growth</td>
</tr>
<tr>
<td>Inhibit new blood vessel growth (angiogenesis)</td>
<td>Starves tumor of nutrients and oxygen</td>
</tr>
<tr>
<td>Inhibit HMG-CoA reductase enzyme</td>
<td>Inhibits metastasis(^{65})</td>
</tr>
<tr>
<td>Decreases expression of cancer causing genes</td>
<td>Prevents initiation of cancer</td>
</tr>
<tr>
<td>Increases the expression of genes that suppress cancer</td>
<td>Prevents initiation and progression of cancer</td>
</tr>
</tbody>
</table>

**Proposed Mechanisms Of Tocotrienols In Cancer Prevention**

Tocotrienols impact several factors that tumors need for their development and growth. Tocotrienols have been shown to inhibit the growth of new blood vessels to rapidly growing tumors and inhibit growth and proliferation of cancer cells.\(^9,15\)

Tocotrienols also sensitize cancer cells to the effects of standard chemotherapy, and astonishingly, appear capable of combating cancer stem cells, which are highly resistant to standard chemotherapy and contribute to cancer recurrences.\(^9\) They also blunt the impact of chemical carcinogens in animal studies.\(^16\)

Tocotrienols also trigger apoptosis, which is the programmed cancer cell death that can prevent a tumor from ever getting a toe-hold in the body. Apoptosis is also vital in shrinking existing tumors, a factor that may account for the growing use of tocotrienols (alone or with conventional chemotherapy drugs) in patients with existing cancers.\(^14,17\)

Tocotrienols have another rather unusual mechanism for fighting cancer. They appear to block an enzyme that cancer cells need for invasion and metastasis. This enzyme, called HMG-CoA reductase, is the same enzyme blocked by statin drugs.\(^2\) In fact, the combination of tocotrienols with the statin drug atorvastatin (Lipitor\(^{16}\)) was recently shown to greatly increase inhibition of cancer cell growth.\(^18\)
Tocotrienols For Cardiovascular Disease And Stroke

Tocotrienols offer many important complementary benefits to the tocopherol form of vitamin E, such as:

1. Improving Lipid Profiles

Tocotrienols help lower plasma cholesterol levels by blocking HMG-CoA reductase. This enzyme is a rate-limiting step in producing cholesterol, so blocking it is an effective means of lowering cholesterol levels. In fact, the common statin drugs used for lowering lipid levels also operate by inhibiting HMG-CoA reductase, although they do so by a different mechanism.4,19-21

Human research shows that tocotrienol supplementation can lower total serum lipids by up to 23%, total cholesterol by 30%, and LDL (bad) cholesterol by 42%. Not all human studies show this dramatic reduction in LDL and cholesterol.22 And animal studies demonstrate significant reductions in lipids, with the added benefit of reducing lipid oxidation; a precursor to the arterial damage that leads to stroke and heart attacks.23

Tocotrienols also can lower dangerous forms of apolipoproteins, which are lipid-carrying proteins that can increase cardiovascular risk.24 Alpha tocopherol has no effect on serum lipids.25

2. Reducing Homocysteine

Tocotrienols have also been found to reduce blood levels of homocysteine, another important contributor to cardiovascular disease.

When scientists used a tocotrienol-rich fraction in a rat study to reduce plasma homocysteine and heart oxidative stress, they discovered that it proved more powerful than folate, the standard homocysteine-reducing vitamin.2

And in rabbits, tocotrienol supplementation after a high-fat diet significantly lowered a host of markers of both inflammation and heart muscle damage.26

3. Protecting Against Ischemia

If a vessel does become blocked, tocotrienols offer potent resistance to the loss of blood flow known as ischemia, which is generally involved in the development of heart attack or stroke.26 This was powerfully demonstrated in a study of rabbits, in which supplementation not only lowered their lipids, but also protected their heart muscle from damage by ischemia induced in the laboratory. This was especially true of the alpha- and gamma-tocotrienol, which reduced the area of heart muscle damage significantly.26

Breakthrough Research On Tocotrienols

- Typical vitamin E supplements contain only alpha-tocopherol, the best known member of the eight-member vitamin E family.
- But tocopherols, while important nutrients, lack some of the additional benefits offered by their cousins, the tocotrienols.
- By virtue of small but important structural differences, tocotrienols can get more involved in profound biological processes, such as modulating gene expressions and regulating vital enzyme functions.
- Tocotrienols have potent anticancer and anti-diabetes abilities, as well as cardio-, neuro-, liver-, and bone-protective actions based on their unique functions in the body.
- It is now apparent that studies showing little or no effect from vitamin E supplementation failed in part because they used only alpha-tocopherol, rather than also including other tocopherols and tocotrienols.
BENEFITS OF TOCOTRIENOLS

4. Guarding Against Stroke-Related Brain Damage

Acute ischemic stroke (reduced blood flow to an area of the brain) remains a leading cause of death and disability worldwide. Oral tocotrienols have been shown to protect against and minimize stroke-related brain damage in animal models. This protection is the result of several independent mechanisms. Tocotrienols work by:

- Slowing the conversion of arachidonic acid (the most abundant brain fatty acid) into pro-inflammatory molecules, thereby reducing the inflammation that arises after an acute stroke.
- Reducing the effects of specific oxidant damage-inducing molecules in brain tissue.
- Increasing the recruitment of arterioles to rapidly restore blood flow to areas injured by stroke.

5. Improving Metabolic Syndrome

In an exciting look ahead at what the future may hold in human studies, preclinical research has shown that tocotrienols can reverse many changes seen in metabolic syndrome, including improving lipid profiles, reducing atherosclerotic lesions, lowering blood glucose and markers of glycation, normalizing blood pressure, and inhibiting new fat deposits. At the functional level, tocotrienols improve heart muscle function, improve glucose and insulin tolerance, and reduce infiltration of inflammatory cells into heart muscle.

Tocotrienols And Diabetes

Diabetes accelerates aging through a variety of mechanisms. In fact, 80% of diabetic patients will die of an atherosclerotic event such as a heart attack or a stroke, making it especially important to address the factors involved in diabetes. Fortunately, a number of animal studies demonstrate that tocotrienols offer hope for patients suffering from this disease.

Tocotrienols have been found to improve blood sugar and kidney function in diabetic animals. This effect has been attributed to their sugar- and lipid-lowering effects, and to their ability to modulate specific growth factors that prevent fibrous proteins from being deposited in kidney tissue.

Other studies have shown that tocotrienols improve insulin sensitivity and whole-body sugar utilization in a similar way as some expensive diabetes drugs (through activation of the metabolic sensors known as peroxisome proliferator-activated receptors or PPARs). And a tocotrienol-rich diet reduced the attack of sugar on tissues (glycation), even in non-diabetic rats. In diabetic rats, it improved blood sugar control as well as glycation.

Because diabetes also attacks the nerves, it eventually produces neuropathy, a potentially painful condition that has resisted many attempts to treat it with drugs. In diabetic rats with neuropathy, tocotrienol supplementation substantially reduced pain behaviors and biochemical changes seen in neuropathy.

Tocotrienols And Liver Disease

In addition to growing indications that tocotrienols are effective against liver cancer, there is compelling evidence of their effectiveness in treating non-alcoholic fatty liver disease (NAFLD). In NAFLD, fat is deposited in the liver and can lead to hepatitis, liver failure, or even cancer.

In a randomized clinical trial, 87 adults with high cholesterol and NAFLD received either mixed tocotrienols (200 mg twice daily) or placebo. After one year, supplemented patients had a significantly greater rate of normalization of their liver tissue on ultrasound than did control patients. The rate of remission was also significantly higher in treated patients than in control patients, while NAFLD
worsened in two controls but didn't worsen in any of the supplemented patients. This is the first clinical study ever to show liver protective effects in NAFLD patients using tocotrienols.\textsuperscript{38}

Another study showed that oral tocotrienols delayed progression of end-stage liver disease in 50\% of liver transplant patients, compared with just 20\% in a group treated with alpha-tocopherol.\textsuperscript{39} The study also demonstrated good tissue penetration of oral tocotrienols in humans, countering previous reports of poor bioavailability.

**Tocotrienols For Neuroprotection**

Oxidation, inflammation, and toxicity resulting from normal brain cell activity are all involved in the terrifying progression of cognitive decline. That's why there has been so much interest in vitamin E in general, with its antioxidant effect, and more recently in tocotrienols, with their ability to regulate a wide variety of genes and signaling molecules.

Patients with Alzheimer’s disease and those with mild cognitive impairment are more likely than healthy people to have low blood tocopherol and tocotrienol levels.\textsuperscript{40} Conversely, very old people with higher levels of tocotrienols in their blood have a 64\% reduced risk of having Alzheimer’s.\textsuperscript{41} Tocotrienols are incredibly effective at protecting vital brain circuitry in these conditions.

Animal studies demonstrate the remarkable neuro-protection offered by tocotrienols. A tocotrienol-rich fraction not only protected rats from free-radical-induced brain cell death, but it also reduced DNA damage in brain cells, and improved the animals’ performance on various cognitive tests such as mazes and swimming challenges.\textsuperscript{42}

**Meet The Vitamin E Family**

Vitamin E was first discovered in 1938 as a “fertility factor.”\textsuperscript{61} During the ensuing years, it was discovered that vitamin E was an antioxidant with value in many different body systems.

Vitamin E can be divided into two groups: tocopherols, which is the most well-known form of vitamin E, and the lesser-known tocotrienols.\textsuperscript{6,7}

The tocopherol group has received the most attention since the vitamin’s discovery. This group contains members called alpha-, beta-, gamma-, and delta-tocopherol.\textsuperscript{7} They are all important nutrients.

The second group in the vitamin E family is the tocotrienols, which until recently received little scientific attention. Even today, less than 1\% of the literature on vitamin E is devoted to tocotrienols. The family resemblance is still close: Tocotrienols exist in the same four configurations (alpha, beta, gamma, and delta), and differ from their respective tocopherol cousins only by a few chemical bonds.\textsuperscript{62} But those small differences make for differences in function.

Tocotrienols and tocopherols are both antioxidants, but the antioxidant activity of tocotrienols is several times more than tocopherol.\textsuperscript{62,63} Beyond that, tocotrienols modify gene expression, inhibit various enzymes, and carry out functions that tocopherols can’t perform.

Tocotrienols have potent anticancer and anti-diabetes abilities, as well as cardio-, neuro-, liver-, and bone-protective actions based on their unique functions in the body.
Alpha-tocotrienol is the most potent neuroprotective form of natural vitamin E. It is so incredibly potent that concentrations in the nanomole to attomole range (one-billionth to one-billion-billionth of a mole) block brain cell death caused by prolonged excitatory stimulation by the neurotransmitter glutamate. Oral supplementation in humans results in tocotrienol plasma concentrations of 3 micromolar; that’s billions of times higher than the concentrations needed in the lab.

Tiny concentrations of tocotrienols, when administered before neurotoxins, led to a sharp reduction in brain cell damage, restoring their normal growth and viability in the laboratory. Most importantly, tocotrienol treatment of cultured brain cells under oxidative stress restores neurites, which are tiny projections off the cell that allow for normal cell-to-cell communication.

Tocotrienols For Bone Health

Tocotrienols are rapidly emerging as major contributors to greater bone density and major inhibitors of bone loss.

Postmenopausal women are the leading sufferers of osteoporosis, though older men develop some degree of abnormal bone loss as well. Long-term anti-inflammatory corticosteroid treatment is an increasingly common cause of bone loss. In addition, research suggests bone loss may be triggered by elevated cortisol levels from stress or smoking.

A host of studies has now established that tocotrienols can prevent, and even reverse, bone loss and promote fracture healing in animal models of osteoporosis from many different causes, including menopause and steroid treatment. The mechanisms are surprisingly well-understood.

How Tocotrienols Protect Your Heart

Tocotrienols modulate many different cardioprotective mechanisms. They have been shown to:

1. Reduce plasma levels of C-reactive protein (CRP), which is both a marker of and a cause in the inflammatory response that damages heart and blood vessels.
2. Reduce other inflammatory mediators such as cytokines.
3. Reduce advanced glycation end products (AGEs) arising from elevated blood sugar that damage vessels and tissues.
4. Reduce expression of adhesion molecules that cause platelets and white blood cells to stick to vessel walls, potentially blocking them.
5. Suppress expression of matrix metalloproteinases (MMPs) involved in the spread of certain cancers.
6. Reduce risk factors for destabilizing atherosclerotic plaques (such plaques, when unstable, readily burst, often blocking the artery and producing heart attack or stroke).
7. Reduce ischemia/perfusion injury to brain and heart muscle; this kind of injury subjects already vulnerable tissues to a blast of oxygen radicals, just when the tissue was beginning to heal.
8. Suppress, regress, and slow the progression of atherosclerosis.

Tocotrienols are potent antioxidants, which appear to reduce the oxidant-induced inflammation that contributes to bone loss. Tocotrienols also upregulate genes related to new bone formation, while suppressing inflammatory signaling that generates bone destruction; this activity is not shared by tocopherols.
As we mentioned earlier, tocotrienols inhibit the enzyme HMG-CoA reductase, which is associated with cholesterol production. HMG-CoA reductase is also profoundly involved in osteoporosis, favoring bone-resorbing cells over bone-forming ones. By inhibiting HMG-CoA reductase, tocotrienols prevent excessive bone resorption (bone breakdown) and promote new bone formation.

Since statins are also powerful HMG-CoA reductase inhibitors, combining statins with tocotrienols has been found to be especially beneficial for bone health. Animal studies have found that combining statins with tocotrienols potentially reduces the statin dose needed—therefore limiting the potential side effects of statins as well.

**Summary**

Tocotrienols are potent gene regulators and modulators of many enzymes involved in human health, helping to quash the inflammation, glycation, and other processes that contribute to age-related diseases. Tocotrienols are increasingly being recognized for their potential roles in protecting against cancer, heart disease, stroke, diabetes, liver disease, neurodegenerative diseases, and even osteoporosis.

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

---

**Tocotrienols Delay Brain Aging**

Basic laboratory and animal studies have long supported a role for tocotrienols in protecting brain cells and tissue from the ravages of aging. In these studies, tocotrienols have been closely linked to neuroprotection through their potent antioxidant properties, as well as their ability to redirect the production of inflammatory molecules to non- or even anti-inflammatory actions.

Now, for the first time, these pre-clinical studies have been compellingly validated in a human study of a pervasive form of brain aging known as leukoaraiosis, or white matter lesions. In this condition, damage to the endothelial lining of small arteries in the brain is thought to produce tiny areas of poor blood flow, resulting in the condition known as vascular cognitive impairment. If it progresses, stroke, cognitive impairment, gait disturbances, and other conditions may follow.

In a study released in April of 2014, researchers randomly assigned a group of volunteers with known cardiovascular risk factors and confirmed white matter lesions in their brains to receive either placebo or a twice-daily dose of 200 mg mixed tocotrienols. The study lasted two years.

In the placebo group, as expected, the mean volume of the white matter lesions increased over the two-year study period. But in the tocotrienol group, the volume of lesions remained unchanged, and the differences between the groups was statistically significant. No adverse effects, including changes in blood chemistry, were observed.

This study is a “first-ever,” then, for two reasons. It is not only the first time that tocotrienol supplementation has been confirmed to be neuroprotective in living human patients, it is also the first demonstration that a simple nutritional therapy can slow progression of the white matter lesions, which many neurologists suspect lies at the root of the tragic and progressive loss of cognition suffered by so many aging adults.
**References**


Cognitex

Brain decline affects all aging humans. Scientific studies demonstrate more youthful cognition and memory in response to the proper 11 nutrients. Cognitex® provides the following brain boosting ingredients in one advanced formula:

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

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

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

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

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

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

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

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

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

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

**MOST ADVANCED NEUROLOGICAL FORMULA AT NEW LOWER PRICES**

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

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

The retail price for 90 softgels of Cognitex® with Brain Shield™ is $62 (Item# 01897). If a member buys four bottles, the price per bottle is $39.75. If eight bottles are purchased, the cost per bottle drops to $37.50. Cognitex® is also available without pregnenolone at a slightly lower price (Item# 01896).

Contains soybeans.


References for most can be found at: http://www.lef.org/magazine/mag2007/feb2007_report_cognitex_03.htm

**Sensiri®** is protected under Leucovorin® is a registered trademark of Indena S.P.A. US Patents Nos. 6,153,198 and 6,713,092 and is a registered trademark of Nutreco, Inc. Perluxan® is used with permission. Sharp-PS® is a trademark of Enzymotec Ltd.

**To order Cognitex® with Brain Shield™, 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.
Most people don’t realize that vitamin E contains eight different compounds.

Commercial vitamin E supplements focus on only four of these compounds called tocopherols, while mostly leaving out the four tocotrienols that are rich in therapeutic and preventive benefits.

Tocotrienols are part of the full spectrum of vitamin E. Due to their unique chemical structure, tocotrienols provide potent antioxidant benefits throughout the body. Most importantly, tocotrienols shield DNA from oxidant damage while protecting cellular membranes.

As research continues to accelerate, scientists are discovering that tocotrienols support healthy cell division, promote a healthy lipid profile, protect brain function, and even support healthy hair growth.

Through a patented delivery system, Life Extension® provides the most absorbable tocotrienols supplement available today. The recommended dosage of Super Absorbable Tocotrienols is one softgel taken two times daily with food. The daily dose provides:

<table>
<thead>
<tr>
<th>Vitamin E</th>
<th>20 IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>(as naturally occurring D-alpha tocopherol from Tocomin® SupraBio™)</td>
<td></td>
</tr>
<tr>
<td>Tocomin® SupraBio™</td>
<td>263 mg</td>
</tr>
<tr>
<td>(providing 50 mg tocotrienols)</td>
<td></td>
</tr>
</tbody>
</table>

A bottle of 60 softgel Super Absorbable Tocotrienols retails for $30. If a member buys four bottles, the price is reduced to $21 per bottle.

References
4. Randomized Clinical Trial of Tocotrienols Supplementation vs. Placebo for Androgenetic Alopecia. Professor Yuen Kah Hay, b., School of Pharmaceutical Sciences, Universiti Sains, Malaysia.

To order Super Absorbable Tocotrienols, 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.
As we age, the steady decline of our immune system opens the door for infection and inflammation that underlies heart disease, diabetes, and cancer.\(^1\text{-}^4\) Known as immunosenescence, the deterioration of a once-vital immune system hastens the decay of our body’s defenses and functions.\(^5\)

In the search for remedies to ward off the dangers of immunosenescence, researchers have found that the medical mushroom known as Reishi contains multiple bioactive components that have a proactive effect on the immune system.

Ancient Chinese physicians discovered the multiple properties of Reishi and it has been used for centuries to promote health and longevity, which earned Reishi the title, “Mushroom of Immortality.”\(^6\text{-}^7\)

The complex compounds in Reishi have been shown to safely modulate an aging immune system, combat cancer, and reduce some of the causes of cardiovascular disease.\(^6\text{-}^8\text{-}^{12}\)
Modern scientists utilizing sophisticated technology and laboratory studies are providing evidence backing more than 2,000 years of traditional use in China. Reishi mushrooms contain a multitude of the pharmacologically active compounds that may ward off various factors of aging.6
Reishi Balances Aging Immune Systems

A youthful immune system prevents infection by bacterial, viral, fungal, and other organisms, and also conducts immune surveillance to track, identify, and destroy abnormal molecular patterns that might indicate an early cancer. Furthermore, an optimal immune system is capable of slowing and stopping the inflammatory response once the threat had been neutralized.

But over time, the immune system slows down in its normal function. There are three main results of this process known as immunosenescence.

1. First, with a reduced immune function, a person becomes increasingly vulnerable to infections that can produce fatal pneumonia in older adults. Even with the widespread pneumonia vaccine coverage among elderly people, the death rate continues to climb due to the debilitating effect of immunosenescence and the increase in antibiotic resistance. Other infections, such as influenza and herpes viruses, also threaten older adults as their immunity wanes.

2. The second major impact of immunosenescence is an apparent loss of the immune system’s ability to identify and destroy emerging cancer cells. Cancer cells display unusual molecular patterns that a healthy immune system routinely recognizes and eliminates.

With a decline in natural immunity, there’s an increased likelihood that malignant cells will escape detection and evolve into a full-blown tumor. This is one of the reasons why cancer is largely a disease of older people.

3. The third component of immunosenescence is loss of the ability to turn off the inflammatory response once the threat has been eliminated. With the inflammatory response switch left in the “on” position, this type of persistent, low-grade inflammation is potentially at the root of many “diseases” of aging, including cardiovascular disease, neurodegeneration, bone and joint disorders, and again, cancer.

The numerous chemical components of the Reishi mushroom exert subtle, but powerful effects that may reverse many of the impacts of immunosenescence. Reishi extracts boost the function of dendritic cells, which help other immune cells recognize foreign antigens and destroy them. Reishi also promotes development of B and T lymphocytes, immune cells involved in the production of antibodies and the regulation of immune function. Extracts of Reishi enhance development of specialized “natural killer” cells that target viral invaders and cancer cells for destruction.

Reishi Targets Age-Related Infections

Reishi mushrooms and their extracts have potent antiviral and antibacterial properties that can help protect the body from deadly microorganisms that threaten health as one ages.

Many of the components found in Reishi have been shown to inhibit infection of herpes simplex, the virus that causes cold sores and genital herpes. It also may defend against herpes zoster, reducing pain associated with shingles and demonstrating a treatment response in several manifestations of the herpes zoster virus in one pilot trial of a Reishi combination formula. Reishi components directly bind to the viruses, interfering with the process in which viruses attach to and enter healthy body cells in order to create an infection. Unlike medications, research showed that Reishi did not cause toxicity to cells.

In patients who had already developed shingles, administration of Reishi extract was shown to dramatically reduce the painful effects of the viral outbreak. As with many natural therapies, Reishi is most effective against herpes viruses when it is administered prior to, rather than following, development of the infection.
Influenza viruses are also the targets of Reishi mushroom extracts, which are rich in trace elements like zinc and selenium that are known to be essential for preventing viral infections and mitigating their severity. Studies also show that Reishi extracts potently inhibit the Epstein-Barr virus that causes mononucleosis syndrome and is also strongly implicated in several kinds of lymphomas. And Reishi extracts also target the hepatitis B virus, while protecting the liver against its damaging effects in preclinical research.

Remarkably, Reishi extracts have now been shown to produce a dramatic drop in the number of active virus particles known as “viral load” in monkeys infected with simian acquired immunodeficiency syndrome (SAIDS), a model of the human HIV/AIDS disease. Laboratory studies demonstrate that active compounds from Reishi mushrooms act by inhibiting HIV enzymes called proteases: an action similar to that of some of the most successful anti-HIV drugs on the market. In this context, Reishi mushrooms have been said to have “huge potential for HIV drug discovery.”

Components from Reishi increase the activity of cell surface receptors that trigger the release of inflammatory cytokines signaling molecules and thereby helping the immune system identify and destroy bacterial invaders.

**Reishi Immunomodulation Slashes Inflammation And Lowers Cholesterol**

Inflammation is a major component of atherosclerosis and cardiovascular disease, which promotes the development of cholesterol-containing plaques and increases the tendency of platelets and white blood cells to stick to those plaques, further narrowing and blocking arteries. Reishi mushrooms’ potent immune-modulating properties have been shown to lower these inflammatory stimuli by reducing cells’ ability to stick to vessel walls and preventing the overgrowth of smooth muscle cells that stiffens and “hardens” arteries.

But Reishi components have other means of improving cardiovascular health as well.

Polysaccharides from Reishi significantly reduced triglycerides and total cholesterol (including LDL) cholesterol after 12 weeks of supplementation in rats, while also raising HDL cholesterol levels. In the same experiments, Reishi supplementation lowered markers of oxidation, while increasing natural cellular antioxidant systems. Microscopic examination of the animals’ livers revealed a remarkable reduction in fatty degeneration of liver cells, an inflammatory stage that readily leads to cirrhosis and liver failure.
Basic laboratory studies demonstrate that certain “sterol” compounds in Reishi can interfere with the cholesterol synthesis pathway in human cells, diminishing the amount of new cholesterol produced each day.53,54 This mechanism is similar to that of the statin cholesterol-lowering drugs, but operates on an entirely different enzyme system.55

Human studies with Reishi have been conducted in patients with mild hypertension and elevated blood lipids. While the results showed little change in blood pressure, the researchers found a marked reduction in serum triglycerides and a marked increase in HDL-cholesterol.

Additionally, the Reishi group saw better plasma insulin and insulin resistance results—a major risk factor for later cardiovascular disease development and diabetes—than the placebo group.56 Other research showed a reduction in the activity of an enzyme that contributes to elevated blood sugar and lipid levels.57

In diabetic rats, which like their human counterparts are at increased risk for atherosclerosis and heart disease, Reishi extract supplementation decreased fasting blood glucose and improved insulin concentrations in a manner comparable with the antidiabetic drugs metformin and rosiglitazone.58,59 The animals given Reishi had lower levels of free fatty acids, triglycerides, and total and LDL-cholesterol, and higher levels of beneficial HDL-cholesterol.58

Reishi’s Immunomodulation Protects Against Cancer

Reishi mushrooms have multiple mechanisms by which they fight the development and spread of human cancers.60 Studies suggest Reishi mushrooms have six potential anticancer mechanisms.61,62 Because of the numerous bioactive compounds contained in Reishi, many of these mechanisms are somewhat complex. We describe six of Reishi’s known anticancer mechanisms next:

1. Activation and modulation of the host immune system.

Natural killer (NK) cells identify abnormal cancerous tissue and attack it before it develops into a full-blown tumor.63 Immunomodulation is primarily the result of Reishi polysaccharides interacting with immune system cells, especially those in the spleen and the thymus, both sources of aggressive cancer-killing cells.9,10,64,65 Animal studies show that Reishi inhibited tumor growth and prolonged the lifespan of mice bred to carry cancers. Reishi stimulated normal immune function, even when the animals were treated after the tumors had developed.66

A preparation of Reishi extract markedly increased the ability of immune system cells to surround and destroy tumor cells in mice bearing a variety of human cancers. The extract also prevented the decrease in immune system function caused by exposure to ionizing radiation.67 Reishi polysaccharides also inhibit adhesion of the “coating” protein fibrinogen to cancer cells. This makes cancer cells more vulnerable to destruction by stripping them of the protection naturally afforded by fibrinogen, and making the cells more accessible to NK cells that can destroy them.8

Another compound from Reishi appears to bind to specialized cell receptors that trigger a sequence of events resulting in the destruction of malignant cells.68 And a series of unique long-chain fatty acids from Reishi is also able to modulate antitumor responses.69,70 Even Reishi proteins may play an active role in the inhibition of tumor cell growth.71
2. Direct killing of cancer cells.
Studies show that Reishi components not only decrease numbers of tumor cells, but also inhibit their ability to form colonies that spread into healthy tissue, while leaving healthy cells unaffected.72,73 These effects are powerful enough to augment the activity of the chemotherapy drug cisplatin.72

3. Inhibition of new blood vessel formation (angiogenesis).
Studies show that a polysaccharide/protein-like molecule from Reishi inhibited new vessel formation by up to 40% in a laboratory model of angiogenesis.74

4. Inhibition of cancer cell proliferation and invasion (metastasis).61,64,75
Reishi mushroom components reduce inflammatory signaling and estrogen receptor signaling in breast cancer cells, taking away two of the most potent promoters of cancer cell proliferation.61,77 In prostate cancer cells, Reishi induces a decrease in inflammatory signaling and slows cell proliferation.60,78 Reishi extracts also cause “cell cycle arrest,” in which the cell replication cycle becomes “locked” in one phase, making further replication impossible and stopping the growth of the tumor.72,79-82

An important component of Reishi, ganoderic acid, has been shown to inhibit tumor invasion by its ability to block a “protein-melting” enzyme called matrix metalloproteinase, or MMP.83-86 Cancer cells use MMP to dissolve away the protein matrix between normal cells, allowing them to squeeze their way through barriers and invade nearby tissues, and even enter the bloodstream to form metastases far away from the original tumor.86,87 Ganoderic acid has been shown to both inhibit prostate cancer cell growth and create an environment in bone tissue that is not favorable for the spread of the cancer.88

5. Deactivation of carcinogens.
This process protects cells from damage that may initiate cancer development.61 When rats were exposed to the powerful colon carcinogens azoxymethane or PhIP, those treated with higher doses of Reishi extract developed significantly fewer and/or smaller tumors than those given the carcinogen only.89,90 Similarly, fewer tumors developed in the lungs of rats treated with a lung carcinogen when the animals were treated with Reishi extracts.91

6. Promotion of programmed cell death (apoptosis).
With the process of programmed cell death (apoptosis), normal cells die when their useful lives are over. However, some cancer cells lose the ability to die off by apoptosis, and instead continue to proliferate endlessly, taking over healthy cells and organs.92,93 By increasing apoptosis, this kind of accelerated cancer cell death has been demonstrated in human cervical cancer and other cell lines after treatment with Reishi extracts, especially those containing ganoderic acid.62,72,94

These six specific properties have made Reishi extracts of special interest to oncology researchers who are studying highly aggressive and invasive cancers, especially of the breast and prostate.60,95,96 Inflammatory breast cancer is one such condition in which malignant cells do not form a cohesive tumor mass in the breast, but rather spread rapidly by forming tiny “spheroids” of cells that travel through the blood and lymphatic system, resulting in the appearance of multiple metastases throughout the body.97,98 Reishi’s ability to inhibit many of the steps in metastatic spread is now being actively explored as a means of stopping such deadly, invasive cancers.95-97

Today, Reishi mushrooms’ combined anticancer activities have been demonstrated in studies of lung, breast, prostate, ovarian, cervical, and colon cancers, both for prevention and for treatment of these devastating malignancies.62,64,88-91,94,97,99 Early clinical trials are especially encouraging.

One study in a group of 30 patients with advanced-stage cancer showed that 1,800 mg of a Reishi polysaccharide extract three times daily produced a sharp increase in immune function, including increases in
Modern science has revealed the virtual pharmacy of Reishi mushroom extracts in combating the very dramatic orders/biology_of_theimmune_system/overview_of_the_immune_system.html. Accessed May 14, 2014. 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**


---

**Summary**

Chinese medical practitioners have long recognized the value of the medicinal Reishi mushroom, and used it to promote healthy, long lives in their patients. Modern science has revealed the virtual pharmacy contained inside these mushrooms, which contain a broad array of biologically active molecules.

Chief among the benefits of Reishi mushrooms is their ability to counteract immunosenescence, the aging and gradual loss of immune function. Immunosenescence raises risk for infection, cancer, and cardiovascular disease.

Studies now convincingly demonstrate the value of Reishi mushroom extracts in combating the very infections that most prominently threaten our health as we age, by boosting functions of immune system cells that identify, track, and destroy infectious agents. Similar immune-boosting effects from Reishi extracts help the immune system recognize the abnormal molecular patterns that mark cancer cells, helping to eliminate them before they mature into malignant tumors. Reishi extracts also act on the other extreme of the immune system, helping to end the overactive inflammation that contributes to cardiovascular disease.

---

**tumor-fighting interleukin-2 and interferon-gamma and in natural killer cell activity.**100 And another study in patients with precancerous colon lesions called colorectal adenomas demonstrated that a supplement dose of **1,500 mg/day** of a Reishi extract for 12 months decreased the rate of appearance of at least one adenoma by **52%** at 12 months; in contrast, the group receiving placebo experienced an **increase** in the rate of incidence of at least one adenoma by a dramatic **42%** at 12 months. In this study, there was also a **decrease** in total size of tumors of **1.40 mm** in supplemented patients, with an **increase** of **1.73 mm** in untreated controls.101 The typical dose for normal aging people is about **1,000 mg** each day of **standardized Reishi extract**, along with other natural components of the Reishi mushroom.


THE NEXT OMEGA...

Are You Getting Your OMEGA-7?

PROVINAL® Purified Omega-7 From Highly Purified Fish Oil Supports Healthy Metabolic Factors

Omega-3s are already a part of Life Extension® members’ health routines and are recognized for their many benefits. But scientists are increasingly excited about the newly discovered effects of a little known family of “good fats”—omega-7 fatty acids.

Rather than replace omega-3s, the omega-7 fatty acid palmitoleic acid has been shown to powerfully complement omega-3s with its unique cellular-signaling properties that directly support healthy metabolic factors associated with:

- Superior cardiovascular health,¹,²
- Healthy inflammatory response,¹³,¹⁴
- Optimum normal metabolism of glucose and insulin,¹⁵,¹⁶ and
- Beneficial modulation of hunger and satiety.⁷,⁸

Unique Cell-Signaling Support

Palmitoleic acid is a monounsaturated omega-7 that has been identified as a lipokine—meaning a lipid-controlling hormone—making it an incredibly unique fatty acid.⁹

Scientific studies have shown that the cell-signaling and metabolic support provided by palmitoleic acid promotes healthy levels of triglycerides, total cholesterol, LDL, and HDL already within normal range—after just one month of 210 milligrams of daily palmitoleic acid supplementation.¹⁰

Studies also show that within normal ranges, palmitoleic acid helps balance C-reactive protein levels, a marker of whole-body inflammation,¹⁰ optimizes insulin sensitivity,¹¹,¹² and regulates levels of satiety-promoting and hunger-promoting gastric hormones.⁷,⁸

Advanced Purified Omega-7

Conventional processing methods result in omega-7 products containing only about 25% of palmitoleic acid. But ProVinal® Purified Omega-7 is concentrated to 50% beneficial palmitoleic acid. This purifying technique also enables superior palmitoleic acid availability.

Convenient One-Per-Day Dosing

The suggested daily dosage of one softgel of ProVinal® Purified Omega-7 softgel provides:

<table>
<thead>
<tr>
<th>Palmitoleic Acid (Omega-7)</th>
<th>210 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>(from ProVinal® highly refined anchovy and/or menhaden oil) (non-GMO)</td>
<td></td>
</tr>
</tbody>
</table>

A bottle of 30 softgels of ProVinal® Purified Omega-7 retails for $27. If a member buys four bottles, the price is reduced to $18 per bottle.

ProVinal® is a registered trademark of Tersus Pharmaceuticals, LLC.

References
1. Lipids Health Dis. 2011;10:120.
10. Effect of Two Dosage Levels of ProVinal™ on serum lipid and C-reactive protein (CRP) profiles in humans: Tersus Pharmaceuticals, LLC; 2012.

To order ProVinal® Purified Omega-7, call 1-800-544-4440 or visit www.LifeExtension.com

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

Low Testosterone Levels May Lead to:
Reduced Sex Drive • Less Energy
Cloudy Thinking • Weight Gain
Cardiovascular Issues

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 with Standardized Lignans contains the following testosterone supporting ingredients:

- 1,500 mg Chrysin
- 15 mg Bioperine®
- 850 mg Muira puama
- 282 mg Nettle 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 with Standardized Lignans call 1-800-544-4440 or visit www.LifeExtension.com

Caution: If you are taking any medication, use only under physician supervision. Men with existing prostate cancer may not be able to use this product. Elevations in free testosterone can unmask an occult (hidden) prostate cancer. Anyone with this concern should have a baseline PSA prior to using this product and a follow-up PSA test 60 days later. If a significant elevation of PSA is found, discontinue this product and advise physician. Do not take more than 15 mg per day of Bioperine®.

Bioperine® is a registered trademark of Sabinsa Corp. HMRlignan™ is a trademark used under sublicense from Linnea S.A.

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.
Reishi Mushroom
Boosts Immune Vitality

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

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

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

The suggested 2 capsules a day of Reishi Extract Mushroom Complex provide:

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reishi mushroom (Ganoderma lucidum) extract</td>
<td>980 mg</td>
</tr>
<tr>
<td>(Fruit body) [standardized to 13.5% polysaccharides (132.3 mg) and 6% triterpenes (58.8 mg)]</td>
<td></td>
</tr>
<tr>
<td>Shell-broken Reishi mushroom spore</td>
<td>150 mg</td>
</tr>
<tr>
<td>(Ganoderma lucidum)</td>
<td></td>
</tr>
</tbody>
</table>

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

References
13. FASEB. 2012;26:373.2.


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

The hydrating action of Lipowheat® ceramides have proven effective in clinical trials. Aging Americans can now offset the visible impact of the gradual decline in their ability to produce enough ceramides by using Skin Restoring Phytoceramides with Lipowheat®.

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

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

---

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

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

**Restore Ceramides Naturally from Within!**

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

Wheat-derived oils have been used topically for centuries as a natural moisturizer. But you can't get enough ceramides from topically applied wheat oil to have a long-term impact on your skin's appearance. And they don't appear in sufficient concentration in your diet. That's why Life Extension® brought together these skin-nourishing oils in a concentrated oral formula called Skin Restoring Phytoceramides with Lipowheat®.

**References**

5. www.fda.gov/ohrms/dockets/dockets/95s0316/95s-0316-rpt0275-04-Udell-vol211.pdf


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.
Beta-Blockers Cause Lack Of Restful Sleep

**Q:** My doctor prescribed *atenolol* (*Tenormin*®) to lower my blood pressure. Ever since I started taking it, I constantly feel fatigued and lethargic, yet at night I don't get any restful sleep. Why is this and what can I do?

**A:** Atenolol is a beta-blocker commonly prescribed for patients with cardiovascular disease and hypertension. Beta-blockers, also known as beta-adrenergic blocking agents, reduce the effects of *catecholamines* (norepinephrine and epinephrine, the fight-or-flight hormones). This in turn slows the heart rate, relaxes blood vessels, and improves conduction signals in the heart, thereby lowering blood pressure.¹,²

Unfortunately, this can lead to adverse side effects since beta-receptors affect multiple metabolic and physiologic functions.³,⁴ Common side effects associated with the use of beta-blockers include fatigue and sleep disturbances.⁵,⁷
Beta-Blockers and CoQ10 Deficiency

Beta-blockers have been shown to block the biological pathway of coenzyme Q10-dependent enzymes in the body.8 This interferes with energy production and protection against free radicals, contributing to fatigue.8,9 This drug-induced depletion may be particularly serious in the elderly, who already suffer from a natural age-related CoQ10 deficiency. CoQ10 is a mitochondrial enzyme essential for the production of adenosine triphosphate (ATP), the core of cellular energy processes.10-13 A 2009 clinical study showed a close correlation between lowered levels of CoQ10 and its role in the pathophysiology of chronic fatigue as a direct result of mitochondrial dysfunction.14

Levels of CoQ10 naturally decline with age. While adults over the age of 30 can benefit from taking CoQ10 supplements, they are especially important for people with cardiovascular concerns, and those who take certain blood pressure medications like beta-blockers.15-18 Ubiquinol (the active form of CoQ10) has a much greater bioavailability than ubiquinone (the oxidized form), helping to improve metabolic efficiency of the cardiovascular system to maintain heart health.19

Based on a meta-analysis of published scientific research, therapeutic doses of ubiquinol range between 100 to 200 mg daily, but may be increased if conditions warrant.9

Beta-Blockers and Melatonin

Beta blockers have long been associated with sleep disturbances such as difficulty falling asleep, staying asleep, and insomnia. They have been shown to reduce the production of melatonin via specific inhibition of beta-1 adrenergic receptors. Melatonin is a hormone secreted by the pineal gland in the brain, and helps in maintaining normal circadian rhythms.5,20-21 People with hypertension already have a lower melatonin production rate than those with normal blood pressure.22

According to the Centers for Disease Control and Prevention, insufficient sleep is a public health epidemic. Persons experiencing sleep insufficiency are also more likely to suffer from chronic diseases such as hypertension, diabetes, depression, obesity, and cancer. They’re also at risk of increased mortality and reduced quality of life and productivity.23

Clinical data indicates melatonin not only plays a significant role in regulating our sleep-wake cycle, it also plays a part in protecting against cardiovascular disease, neurological disease, and other diseases related to aging.24 Melatonin’s universal action on oxidative stress through its scavenging and antioxidant effects plays a role in several metabolic functions influencing virtually every living cell. Scientific evidence from the last 15 years has suggested that melatonin has positive effects on the cardiovascular system. The administration of melatonin doses typically ranges from 500 mcg to 5 mg nightly to promote sleep.25-27

Beta-blockers deplete nutrients that are essential to the metabolic activities of every cell in the body. The bottom line here is that we need to be aware of medications that could potentially create an imbalance in your nutritional status and correct them.

Note: Altering your dose or discontinuing any of your prescription medications should always be done under the care and supervision of your physician.
Kimmi Stultz is a member of the American Pharmacists Association Foundation, American Academy of Anti-Aging Medicine, and a clinical pharmacy educator for the Life Extension Foundation®.

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


ASK THE PHARMACIST
Over 6,000 studies have been published on resveratrol, a compound shown to favorably alter genes that help slow the aging process. In fact, resveratrol triggers many of the same beneficial genes activated by calorie restriction.¹

In addition, researchers have identified specific compounds found in berries, such as pterostilbene and fisetin, that work in synergy with resveratrol to activate the body’s own “longevity genes.”

Standardized trans-resveratrol combined with botanical extracts is the most complete resveratrol complex available.

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

Reference

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.
A myriad of laws censor our ability to mention in advertisements all of the topical hormone creams we make available at rock bottom prices.

You are still allowed, however, to phone or fax the Life Extension Pharmacy® with the prescription drugs you are currently prescribed and receive a free price quote.

You may be pleasantly surprised to find savings of 50% or greater on out-of-pocket expenses. In some cases, we save our clients thousands of dollars a year on their prescription drug costs.

In addition to a free price quote, we may make some suggestions to ensure you are getting optimal benefits from your medications, while reducing side effect risks.

We offer the convenience of automatic refills and free shipping to your door.

To obtain a free price quote, just let us know the medications you are taking by calling 1-877-877-9700.

You can also fax copies of your prescriptions to us at 1-877-877-9708.

As you may know, the Life Extension Foundation®, our partner in preserving your health, is a pioneer in the use of natural bioidentical hormones. The Foundation’s track record documents it was almost a decade ahead of the mainstream in identifying the toxic effects of FDA-approved synthetic hormones. To find out how much you can save, contact the Life Extension Pharmacy® today by phone or fax.
Choosing the Right Probiotic for You

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

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

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

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

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

Why Don’t Probiotics Always Work?

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

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

FlorAssist® Probiotic Liquid Vegetarian Capsules...

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

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.

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

References
Unleash The Power Of The Female Brain

Renowned neuropsychiatrist and best-selling author Dr. Daniel Amen has written his first book specifically addressing the female brain. He gives a comprehensive and much-needed guide to understanding a woman’s unique brain and its strengths (intuition, empathy, multitasking, collaborating) and vulnerabilities (anxiety, depression, a tendency to worry). In the pages of *Unleash the Power of the Female Brain*, Dr. Amen discusses strategies women can use for peak brain performance, including what supplements to take, how to balance their hormones, and what lifestyle changes may lead to increased brain health.

**LE:** While there is an enormous amount of information in your book about how women can improve their brains, you mention some specific laboratory tests that women should get and monitor, including a vitamin D blood test and a homocysteine blood test. Why are they so important?

**Dr. Amen:** Low levels of vitamin D have been associated with obesity, depression, cognitive impairment, heart disease, reduced immunity, cancer, psychosis, and all causes of mortality. Two-thirds of the population is low in vitamin D; this is the same percentage of US residents who are overweight or obese.
LE: What about homocysteine?

Dr. Amen: Elevated homocysteine levels in the blood have been associated with damage to the lining of the arteries and atherosclerosis as well as an increased risk of heart attack, stroke, blood clot formation, and possibly Alzheimer's disease. This is a sensitive marker for B vitamin deficiency, including folic acid deficiency. Replacing these vitamins often helps return the homocysteine level to normal.

LE: One of the chapters in your book is titled, “Balance Your Hormones to Boost the Female Brain.” What is the relationship between hormone levels and brain function?

Dr. Amen: There is a very strong mutual influence between hormones and the brain. The brain produces signals that trigger hormones, and hormones from other parts of the body also influence the brain. For example, when thyroid activity is low, brain activity is typically low as well. That’s why a low thyroid often goes along with depression, irritability, and brain fog. Balanced hormones are critical to your brain's well-being.

LE: While there are several hundred hormones that affect the brain, you mention about a half-dozen that are the most important. Namely estrogen, progesterone, testosterone, thyroid, cortisol, DHEA, and insulin. However, you spend a lot of time on estrogen. What makes estrogen so critical?

Dr. Amen: Healthy levels of estrogen make you feel good. Too much estrogen can make you feel anxious and irritable. Estrogen withdrawal makes you feel anxious and confused. It’s the rise and drop in estrogen that drastically affects your mood, and the more erratic your particular fluctuation is, the more upset it can make you. These problems become worse during perimenopause and menopause, when estrogen levels wane.

LE: What are the symptoms of excess estrogen levels?

Dr. Amen: Puffiness, heavy bleeding, fibrocystic breasts, low libido, cravings for carbohydrates, weight gain around the hips, vaginal or oral yeast, mood swings, tender breasts, and headaches or migraines.

LE: And what are some symptoms of low estrogen levels?

Dr. Amen: Weight gain, bladder incontinence and infection, mood changes or depression, insomnia, low libido, heart palpitations, osteoporosis, painful intercourse, foggy-headedness, irritability, fatigue, weepiness, hot flashes, and pain.

LE: Fortunately, you mention some foods that can help improve the conversion of estrogen into good metabolites, or metabolites that can easily be excreted. What are they?

Dr. Amen: There are great foods that can help improve the conversion of estrogen into good metabolites away from bad ones. These foods include insoluble dietary fibers, such as lignans found in green beans, peas, carrots, seeds, and Brazil nuts. The reason that dietary fiber, especially lignans so beneficial is that it can bind harmful estrogens into the digestive tract, so they can be excreted in the feces instead of being reabsorbed. Dietary fiber also improves the composition of intestinal bacteria so that harmful estrogen metabolites can be excreted from the body.

LE: And can you quickly explain why sugar and simple carbohydrates are so detrimental to brain health and overall health?

Dr. Amen: Sugar and simple carbohydrates cause unfriendly flora to grow in the gastrointestinal tract and disrupt estrogen metabolism. These foods also raise blood sugar and insulin levels, resulting in adverse influences in sex hormone balance. Too many simple carbohydrates have been associated with postmenopausal breast cancer risk among overweight women and women with a large waist circumference.

LE: There are some dietary supplements that you recommend women begin taking to improve their estrogen imbalance, including omega-3 fatty acids and melatonin. How are they beneficial?

Dr. Amen: Omega-3 fatty acids contain EPA, which has been reported in laboratory studies to help control estrogen metabolism and decrease the risk of breast cancer. Eating grass-fed organic beef also supplies these fats. Melatonin levels decline with age and may lead to sleep disturbances common during menopause. Melatonin has been shown in laboratory studies to inhibit the growth of breast cancer cells. It also acts as an anti-inflammatory and antioxidant in the brain and other tissues like the intestine.

LE: You discuss a lot of instances where hormones affect overall mood. In particular, you state...
that low progesterone can lead to a host of unsettling symptoms for women. Can you expand on that a bit?

**Dr. Amen:** Progesterone can fluctuate greatly in women who are in their late thirties and forties, making them feel anxious and irritable. Often, progesterone cream can be very helpful under the care of an experienced health care provider.

**LE:** What are some things that produce low levels of progesterone?

**Dr. Amen:** Progesterone production can decrease with low levels of thyroid hormone, the use of antidepressants, chronic stress, deficiencies in the vitamins A, B6, C, or zinc, and a diet high in refined sugar. Chasteberry has been found to help support healthy progesterone levels. It can also be taken to reduce the symptoms of PMS and endometriosis (20-40 mg a day).

**LE:** Low levels of DHEA can also wreak havoc on a woman’s system. Why is that?

**Dr. Amen:** One of the most important reasons to measure DHEA is that low levels in combination with high cortisol levels put you at risk for memory loss. Originally, it was thought that high cortisol was the culprit in damaging the hippocampus, the brain’s major learning and memory center, but new studies report that people with Alzheimer’s have lower DHEA levels. When DHEA drops, the protective effects of DHEA on the brain are lost.

**LE:** How can women combat this problem?

**Dr. Amen:** If your DHEA is low, it can easily be supplemented. There is good evidence that validates DHEA supplementation to help support adrenal gland function and your weight. DHEA is usually well-tolerated, but there can be some unpleasant side effects like acne and facial hair owing to the tendency of DHEA to increase testosterone levels. These can be avoided by using a specific metabolite of DHEA called 7-Keto-DHEA.

**LE:** Are there any other supplements that might be helpful to the adrenal system?

**Dr. Amen:** B vitamins support the adrenal system and can help you deal with stress. 5-HTP is a calming supplement that boosts serotonin levels and can support sleep so that you feel less stress, which can also help with weight loss. Also, L-theanine, Relora, magnesium, holy basil, ashwagandha, and rhodiola have been shown to be useful.

**LE:** In addition to supplements that can support hormone levels and protect the brain, you have a section in the book titled “Amen Clinics’ Nine Rules of Brain-Healthy Eating.” People should absolutely buy the book for the complete list of rules, but you mention a few specific foods that readers may find are interesting in terms of how much benefit they offer. Hemp seeds and raw cacao come to mind. Why are they so beneficial?

**Dr. Amen:** Raw cacao is loaded with antioxidants and is high in flavonoids, which are substances shown to increase blood flow, magnesium, iron, chromium, zinc, copper, and fiber. It can also decrease cravings and balance blood sugar. But eat only a small amount of dark chocolate or it will turn to fat.

**LE:** And what about hemp seeds?

**Dr. Amen:** Hemp seeds are high in protein, contain all essential amino acids and fatty acids, and are high in omega-3s and healthy omega-6s (including gamma-linolenic acid, which has anti-inflammatory properties).

**LE:** From what foods to eat, to what supplements to take, to stress-relieving strategies and hormone balancing advice, *Unleash the Power of the Female Brain* is a must-read for women of all ages. Thank you.

Daniel G. Amen, MD, is a physician, double-board-certified psychiatrist, teacher, and eight-time *New York Times* best-selling author. He is widely regarded as one of the world’s foremost experts on applying brain imaging science to everyday clinical practice. Dr. Amen is the founder of Amen Clinics in Newport Beach and San Francisco, California; Bellevue, Washington; Reston, Virginia; Atlanta, Georgia; and New York City. To order a copy of *Unleash The Power of The Female Brain*, call 1-800-544-4440 or visit www.LifeExtension.com

Retail price $16
Member price $12
Item # 33869

If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.
Most people don’t get enough oil-based nutrients from their diet. Super Booster solves that problem with a once-a-day softgel that provides high potencies of fat-soluble nutrients and other compounds.

Just one SUPER BOOSTER provides:

- **Vitamin K2**: Studies show vitamin K2 provides superior benefits for bones, arteries, and other tissues. The MK-4 form of vitamin K2 is the most rapidly absorbed, but only remains active in the blood for a few hours. The MK-7 form of K2, however, remains bioavailable for a sustained 24 hours. Super Booster provides a potent dose of MK-7 and MK-4 (along with vitamin K1) to keep calcium in the bones and out of the arteries.

- **Lutein**: This carotenoid helps maintain healthy cell division, supports eye health, and protects the endothelial lining of the arteries.

- **Gamma tocopherol**: Taking only alpha tocopherol displaces the critically important gamma tocopherol from cells in the body. Gamma tocopherol also quenches a dangerous free radical (peroxynitrite) that plays a major role in age-related decline. It is vital that those taking vitamin E supplements also consume at least 200 mg a day of gamma tocopherol.

- **Sesame lignans**: Help boost tissue levels of gamma tocopherol via several different mechanisms.

- **Lycopene**: Evidence suggests those who ingest this carotenoid enjoy healthier prostate function. Lycopene also helps guard against LDL oxidation.

- **Ginkgo**: Hundreds of studies substantiate how Ginkgo biloba promotes healthy circulation and brain function.

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

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

Just one Super Booster softgel should be taken each day with the heaviest meal.

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

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

Contains soybeans.

Caution: If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product. Tomat-O-Red® is a registered trademark of LycoRed, Ltd.

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

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

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

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

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

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

References
3. Available at: http://www.innovatewithdairy.com/
A FULL SPECTRUM PHOSPHOLIPID–OMEGA-3 COMPLEX

KRILLPOWER
HEALTHY LIPID MANAGEMENT*  BRAIN NUTRITION*  METABOLIC HEALTH*

KRILL OIL: A UNIQUE & POWERFUL ALTERNATIVE TO FISH OIL

Jarrow Formulas® Krill Oil, produced from shrimp-like crustaceans abundant in the Antarctic (Euphausia superba), is not only rich in EPA and DHA but contains other valuable and unique constituents like phospholipids. Phospholipid-bound Omega-3s are better absorbed and utilized than the ethyl ester (EE) or triglyceride (TG) forms of Omega-3s found in regular fish oil.

Jarrow Formulas® Krill Oil also includes astaxanthin, a powerful carotenoid antioxidant, for additional antioxidant support to enhance the benefits of Omega-3s.

For more information visit us at www.Jarrow.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.

© 2014 Jarrow FORMULAS®
Cardiologist Dennis Goodman, MD, could not get rid of the nagging feeling he was experiencing as he did rounds in the hospital. Day after day, he was treating heart patients and helping them live longer, but increasingly he had the sense that he was simply putting out a fire with the medical treatments he had to offer. The root causes of heart problems, he felt, were simply not being addressed.

“I had that sense that I was taking care of people who were already in deep trouble,” says Dr. Goodman, a board-certified cardiologist who trained at Baylor College of Medicine in Houston, Texas. “It got to the point where I kept thinking about how we can prevent this stuff in the first place. I had this sense of starting to focus on what people can do themselves to keep themselves healthy before you have to come to the doctor with an acute problem.”
Dr. Goodman graduated *cum laude* from the University of Cape Town Medical School in Cape Town, South Africa. He completed his residency in Pittsburgh, did his fellowship at Baylor, and is currently a Clinical Associate Professor of Medicine at New York University and the Director of Integrative Medicine at New York Medical Associates in Manhattan.

“What makes people healthy is what we eat, being active, and stress management, which includes avoiding things that create inflammation in the body,” Dr. Goodman says. “There’s also a huge component of illness that is psychological. I started to look at things we can do to minimize oxidative stress and how we can deal with the stresses that everybody faces.”

Zeroing In On Magnesium

“People are unaware of how important magnesium is,” Dr. Goodman says. “And it’s all too common how deficient people are. When I tell patients that they have the classic symptoms of magnesium deficiency, which can be very non-specific, ranging from fatigue, insomnia, palpitations, and things people just attribute to everyday life, they don’t understand it. Then I prescribe them something as simple as magnesium and they come back and can’t believe how well they’re feeling.”

Dr. Goodman points out that since humans don’t make magnesium, we need to take it in because it is crucial to so many bodily functions. The right level of magnesium can help avoid heart attacks, lower blood pressure, halt muscle cramps, relieve insomnia, and boost calcium absorption.

So why don’t more people know about it?

“That’s the question I began asking when I decided to write *Magnificent Magnesium—Your Essential Key to a Healthy Heart and More,*” he says. “How do we get educated if there is no company to pay for advertisements and if Big Pharma isn’t benefiting from getting the word out?”

Even in medical schools, Dr. Goodman says that magnesium does not get put in the proper place based on its importance. He laments that doctors don’t even hear about it unless they have a specific interest in nutrition and learn about it themselves.

Spreading The Word

“One of the reasons I wanted to write this book was to spread the word about magnesium,” Dr. Goodman explains. “I wanted to come to Life Extension® and places that understand how important these things are.”

Another facet of Dr. Goodman’s magnesium mission is to help people lessen the number of prescription medications they are currently taking. For instance, a lot of people have high blood pressure, yet one cause of magnesium deficiency is high blood pressure. Many doctors will simply prescribe a blood pressure lowering medication, which may then cause side effects that require additional drugs, and a vicious cycle begins.

“You start with the pills and then it is one pill for this and one pill for that, and then all of a sudden you’re on 10 pills,” he says, describing a situation that is all too common. “And they just came out with a recommendation that more people should take statins... I say before medication, we talk about lifestyle changes and nutrition. Let’s start with a low-salt diet, exercise, and magnesium. To me, that’s a lot better than taking drugs. Also, it allows people to take their health in their own hands.”

**Common Health Conditions That Benefit From Magnesium:**

- Asthma
- Chronic Fatigue Syndrome
- Chronic Pain
- Depression
- Fibromyalgia
- GI Problems
- Headache And Migraine
- Heavy Metal Toxicity
- Kidney Stones
- Osteoporosis
- Sleep Disorders
WELLNESS PROFILE

In his book, Magnificent Magnesium, Dr. Goodman outlines a comprehensive plan for supplementing with magnesium, as well as all of the benefits that can be obtained from maintaining proper levels. One of the major points he focuses on is the area of heart health, where he builds a bedrock case for understanding heart disease and how a deficiency of magnesium may play a role in exacerbating or even causing some of our nation's most common cardiac problems.

The guidelines Dr. Goodman sets forth in his book are a must-read for anyone looking to take control of their heart and total body health.

“As always, talk to your doctor before you start taking any new supplement,” he says. “But when it comes to magnesium, after reading my book, it’s possible you may educate him!”

To order a copy of Magnificent Magnesium, call 1-800-544-4440 or visit www.LifeExtension.com
Retail price $14.95
Member price $11.21
Item # 33870

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

A Golden Opportunity

One of the reasons Dr. Goodman is so excited about the current era of modern medicine is that little-known vitamins and minerals like magnesium are finally getting their due. With the Internet and social media, people have more ways than ever to do their own research, find their own books and blogs, and seek out ways to intervene in their own health management. He points to the rise in awareness of the importance of vitamin D as a perfect example. Whereas a decade ago, the general public couldn’t differentiate D from any of the other vitamins, nowadays, it is becoming standard for people to ask about their own vitamin D levels.

“We all check vitamin D now,” he says. “The day is coming when we’ll check magnesium red blood cells. It is such an easy test to repeat.”

And it’s also an easy deficiency to correct. Magnesium is found in green leafy vegetables, almonds, and pumpkin seeds. However, the levels of magnesium in these foods isn’t as high as it once was.

“The problem is that the soil is deficient in so many places and you could be eating large amounts of these foods and not be getting enough magnesium,” he says. “You need to buy organic forms of these foods or buy them from a farmer’s market.”

If you want to make sure you’re hitting your magnesium marks, in addition to consuming the above foods, you can always add a high-quality magnesium supplement to your regimen.

“As a maintenance dosage I recommend 3 mg per pound of body weight,” Dr. Goodman says. “But that’s for maintenance. If you’re stressed out and there is inflammation in your system, you can go up to 5 mg per pound of body weight.”
TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT

FOR DNA PROTECTION

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

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

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

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

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

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

**References**

To order **Triple Action Cruciferous Vegetable 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.
Magnesium and Brain Health

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

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

New Cognitive Benefits Revealed!

Although research into the role of magnesium in the brain dates back 70 years, scientists continue to uncover its comprehensive benefits for cognitive function.¹² Studies using magnesium-L-threonate show this unique form of magnesium maintains the quantity of synaptic connections between brain cells and inhibits the dysregulation of signaling pathways.¹

Capsules or Powder... Value Priced

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

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

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

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

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

References

Warning to Coumadin® (warfarin) Drug Users: Patients prescribed vitamin K-antagonist anticoagulant prescription drugs like warfarin should consult their physician before taking vitamin K supplements like Super K and Super Booster. There is evidence, however, that users of drugs like warfarin could benefit from a consistent low dose of supplemental K. Ask your doctor if you can take a low dose (45 mcg a day) of vitamin K2 in the long-acting MK-7 form for the purpose of stabilizing your INR levels and also protecting your body against long-term vitamin K deficit. Do not initiate any form of vitamin K supplementation without full cooperation of your treating doctor, as your doctor may need to increase your dose of warfarin to compensate for your vitamin K supplement. Life Extension® provides several forms of low-dose vitamin K for physician consideration.
Researchers continue to confirm that the Mediterranean diet, rich in olive oil, is one of the best ways to lower the risk of all-cause mortality. Those who adhere to a Mediterranean diet have a longer life expectancy and a lower risk of heart disease, high blood pressure, and stroke.

Olive oil is a rich source of monounsaturated fatty acids, along with various phenolic compounds such as oleocanthal, oleuropein, hydroxytyrosol, and tyrosol. These substances are believed to modulate nearly 100 human genes and in turn, cell signaling and age-associated processes.

Olive oil has built a strong reputation for defending against cardiovascular disease, diabetes, cancer, rheumatoid arthritis, and other diseases. But newly released studies demonstrate that by incorporating olive oil into your daily diet, you may also protect against other age-related diseases such as Alzheimer’s, osteoporosis, skin aging—even premature death.

Two 2013 studies found that these benefits are even greater when extra-virgin olive oil is substituted for regular olive oil—and that many of the health effects of the Mediterranean diet can be ascribed largely to the nutraceutical properties of extra-virgin olive oil.
Staving Off Alzheimer’s Disease

Scientists recently linked oleocanthal, a natural phenylethanoid found in extra-virgin olive oil, to a reduced risk of Alzheimer’s disease, the sixth leading cause of death in America.13 Alzheimer’s disease is characterized by the accumulation of amyloid-beta and tau proteins in the brain.14

A study published in 2013 showed that oleocanthal enhances the clearance of amyloid-beta from the brain by increasing two major amyloid-beta transport proteins at the blood-brain barrier.7

Additionally, this study demonstrated that oleocanthal treatment significantly increased the degradation of amyloid-beta through its upregulation of amyloid-beta-degrading enzymes.7

This finding may lead to the development of a novel olive-oil-based Alzheimer’s therapy.

Reducing Mortality Risk

The Mediterranean diet has long been shown to have pro-longevity effects, but the degree to which its greater use of olive oil contributes to this effect has not been established. However, a recent study focused on the specific, individual role that olive oil plays in this association.19

Scientists analyzed data from a large, prospective study that followed 40,622 participants aged 29 to 69 for a combined total of over 550,000 person-years. They observed an impressive 26% reduction in mortality among healthy adults in the upper quartile of olive oil consumption compared to non-consumers. Even a relatively small increase in olive oil consumption was shown to have a

Preventing Skin Aging

Skin aging is due to intrinsic as well as external factors; especially UV exposure.17 Sun exposure, otherwise known as photoaging, causes pigmentation abnormalities, wrinkling, and tissue slackening.18

In a study published in 2012, scientists surveyed 1,264 women and 1,655 men, aged 45 to 60, and analyzed their monounsaturated fatty acid intakes from dietary sources over the first 2.5 years of the follow-up period. Severity of facial skin photoaging was graded over this period by investigators using a 6-grade scale illustrated by photographs.11

The team found significantly lower risk of severe photoaging, for both sexes, among those with higher intakes of monounsaturated fatty acids, specifically olive oil. Interestingly, photoaging protection was not associated with the intake of monounsaturated fatty acids from animal sources (including meat, processed meat, or dairy sources).11

Inhibiting Osteoporosis

In a recent report, researchers found that eating a Mediterranean diet enriched with virgin olive oil for two years robustly increased serum concentrations of osteocalcin and procollagen type I N-terminal propeptide (P1NP), which in turn suggests potent protective effects against osteoporosis.8

Osteocalcin is produced by the body and is bone-building, by nature.15 (In addition to its role as a bone marker, osteocalcin has been related to blood sugar stability). Enhanced P1NP is a strong indication of increased bone collagen synthesis and bone formation rate.8

These results confirm a previous experimental report that associates the consumption of olive oil with the prevention of bone-mass loss in animal models of osteoporosis,10 which affects 55% of Americans aged 50 and over.16

Selecting, Storing, And Using Olive Oil

Most of the world’s olive oil is produced in the Mediterranean regions of Greece, Spain, France, and Italy.35,36 The highest quality—and most healthful—olive oil has a low acid content, which is expressed as oleic acid.37,38

Virgin olive oils come from the first pressing of the olives and contain no more than 2% free acidity.37,38 They are considered to have a superior taste compared to refined olive oils. True virgin olive oil contains no refined oil at all. Because high-quality, extra-virgin olive oil contains a greater abundance of potent compounds, it is well worth the higher cost.39

Exposure to light and heat can cause olive oil to turn rancid. Be sure to store it in an opaque bottle kept in a cool, dark place.40,41

Consider using olive oil in soups, sauces, stews, and vegetable dishes. Coat cooked pasta with it. Olive oil makes a great dip for bread, especially when embellished with herbs.

Selecting, Storing, And Using Olive Oil

Most of the world’s olive oil is produced in the Mediterranean regions of Greece, Spain, France, and Italy. The highest quality—and most healthful—olive oil has a low acid content, which is expressed as oleic acid. Virgin olive oils come from the first pressing of the olives and contain no more than 2% free acidity. They are considered to have a superior taste compared to refined olive oils. True virgin olive oil contains no refined oil at all. Because high-quality, extra-virgin olive oil contains a greater abundance of potent compounds, it is well worth the higher cost.

Exposure to light and heat can cause olive oil to turn rancid. Be sure to store it in an opaque bottle kept in a cool, dark place.

Consider using olive oil in soups, sauces, stews, and vegetable dishes. Coat cooked pasta with it. Olive oil makes a great dip for bread, especially when embellished with herbs.

Staving Off Alzheimer’s Disease

Scientists recently linked oleocanthal, a natural phenylethanoid found in extra-virgin olive oil, to a reduced risk of Alzheimer’s disease, the sixth leading cause of death in America. Alzheimer’s disease is characterized by the accumulation of amyloid-beta and tau proteins in the brain.

A study published in 2013 showed that oleocanthal enhances the clearance of amyloid-beta from the brain by increasing two major amyloid-beta transport proteins at the blood-brain barrier.

Additionally, this study demonstrated that oleocanthal treatment significantly increased the degradation of amyloid-beta through its upregulation of amyloid-beta-degrading enzymes.

This finding may lead to the development of a novel olive-oil-based Alzheimer’s therapy.

Reducing Mortality Risk

The Mediterranean diet has long been shown to have pro-longevity effects, but the degree to which its greater use of olive oil contributes to this effect has not been established. However, a recent study focused on the specific, individual role that olive oil plays in this association.

Scientists analyzed data from a large, prospective study that followed 40,622 participants aged 29 to 69 for a combined total of over 550,000 person-years.

They observed an impressive 26% reduction in mortality among healthy adults in the upper quartile of olive oil consumption compared to non-consumers. Even a relatively small increase in olive oil consumption was shown to have a
beneficial effect. The impact on the risk of death was similar for the use of both regular olive oil and virgin olive oil.19

The pathway by which olive oil reduces mortality is unclear. However, it may flow from its protective effect on the risk of chronic diseases such as cardiovascular disease and cancer.19

Let’s review olive oil’s established protection against these age-related disorders.

Promoting Cardiovascular Health

Olive oil regulates nearly 100 genes, many of which modulate inflammation—and inflammation can cause numerous detrimental effects, including cardiovascular disease.5

It has long been known that olive oil helps decrease total cholesterol and low-density lipoprotein (LDL) levels,20 but later research has shed light on additional cardiovascular benefits. A controlled study measured the effect of consuming virgin versus refined olive oil on inflammatory markers in 28 heart disease patients. Each subject consumed 50 mL (almost two ounces) of virgin olive oil for three weeks and 50 mL of refined olive oil for another three weeks.21 Virgin olive oil produced significant reductions in interleukin-6 and C-reactive protein—inflammatory markers associated with increased heart disease risk—suggesting it represents a potent, additional intervention to pharmacological treatment.21

Scientists then tested three classes of olive oil—containing low, medium, or high content of polyphenols—on plasma lipid levels and oxidative stress. This study randomly assigned 200 healthy men to consume 25 mL of each type of olive oil daily for three weeks per type. While triglyceride levels decreased similarly with all three kinds of olive oil, the most polyphenol-rich olive oil produced the greatest improvements in HDL levels and the most dramatic decreases in oxidative stress markers. It is worth noting that extra-virgin olive oil has richer polyphenol content than refined olive oil.22

In 2011, scientists concluded that, compared to those who never use olive oil, those with highest olive oil consumption have a 41% reduced risk of stroke.2 And in a 2012 study, participants whose olive oil intake ranked in the top quarter had a 44% lower risk of dying from heart disease compared to those who consumed no olive oil.9

Suppressing Cancer

A Mediterranean-style diet rich in olive oil is associated with a decreased risk of many types of cancer. Several constituents of olive oil appear to be responsible for its anticancer effects, including polyphenols and oleic acid.23 Oleic acid suppresses over expression of a cancer-triggering gene that plays a key role in the invasive progression and metastasis of several human cancers; a finding that could lead to an olive oil-based cancer therapy.24

Evidence of olive oil’s potency against breast cancer has been accumulating quickly. Researchers separated phenolic compounds in olive oil into “fractions,” each of which was tested against breast cancer cells. The major polyphenols found in extra-virgin olive oil suppressed the breast cancer-promoting gene HER2. Cells with overactive HER2 reacted to the extra-virgin olive oil compounds by self-destructing.25
Other scientists determined that olive oil attacks breast cancer tumors in several potent ways: Olive oil suppresses the oncogene that drives tumor growth; it switches off the proteins that cancer cells rely on to survive and multiply, and it protects DNA against damage that can eventually lead to cancer.36

**Quelling Inflammation**

Extra-virgin olive oil reduces the expression of multiple inflammatory genes27 and does not activate inflammatory pathways (in contrast to other dietary fats, such as butter)28 and decreases inflammatory markers.29 Increased olive oil consumption is linked to a decreased risk of rheumatoid arthritis, an autoimmune disease characterized by joint inflammation and pain.6

Scientists conducted a clinical trial on rheumatoid arthritis patients. Olive oil and fish oil produced greater improvements in clinical measurements of the disease than fish oil alone.30 This suggests olive oil may help prevent rheumatoid arthritis and may restore mobility and function in those already afflicted.

**Protecting Stomach Health**

*Helicobacter pylori* are bacteria linked to peptic ulcers and some strains are linked with gastric (stomach) cancer.31 Researchers have reported that virgin olive oil compounds exert “strong bactericidal activity against eight strains of *H. pylori*, three of them resistant to some antibiotics. These results open the possibility of considering virgin olive oil a chemopreventive agent for peptic ulcer or gastric cancer.”32

Another study found those with the highest intakes of oleic acid, abundant in olive oil, had a 90% lower risk of developing ulcerative colitis. Dr. Andrew Hart, who along with his colleagues performed the study, stated “half of the cases of ulcerative colitis could be prevented if [2 to 3 daily tablespoons of olive oil] were consumed.”33,34

**Summary**

Olive oil’s potent compounds have long been known to defend against cardiovascular disease, diabetes, cancer, and rheumatoid arthritis. But new research demonstrates extra-virgin olive oil modulates nearly 100 genes that protect against other aging-related diseases such as Alzheimer’s, osteoporosis, peptic ulcers, and even aging 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**


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

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

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

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

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

Combined Benefits Of Fish And Krill Oils

Human studies suggest that omega-3 fatty acids from fish oil result in a more rapid uptake into plasma triglyceride and platelet phospholipids, which specifically benefit the cardiovascular system.⁴

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.
The omega-3s found in krill appear to be more rapidly incorporated into red blood cell phospholipids, which are rapidly absorbed into brain cells.5 When combined, krill and fish oil appear to offer enhanced benefits for both the cardiovascular and nervous system than either form by itself.

**Astaxanthin: Super-Antioxidant**

Astaxanthin protects cells by controlling free-radical activity and boosting mitochondrial function.6 This potent antioxidant carotenoid has been shown to help optimize joint, immune,7,8 brain,9,10 cardiovascular,11,12 DNA,13,14 and mitochondrial15,16 health. Astaxanthin also supports healthy blood sugar levels for those already in the normal range.17,18 And astaxanthin crosses the blood-eye barrier, supporting vascular health within the eye19 and protecting the eyes’ sensitive cells.20-23

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

**Newly Documented Benefits Of Mediterranean Diet**

In 2013, the results of a huge trial of people who followed a Mediterranean diet were published in the *New England Journal of Medicine*. Those who supplemented this diet either with olive oil or nuts showed such a huge reduction in primary cardiovascular problems that the trial was stopped early to spare the lives of those on the control diet.24

The Mediterranean diet—rich in omega-3 fatty acids, monounsaturated fatty acids found in olive oil, and antioxidant-rich fruits, vegetables, and herbs—has long been associated with cardiovascular health and increased life span.25-33

To help emulate a Mediterranean diet, **Super Omega** provides a **standardized olive fruit polyphenol extract** to protect normal LDL from oxidation.34-38 Research shows that a combination of olive oil and fish oil supplements helps with inflammation better than a placebo or fish oil alone.39 The daily dose of Super Omega softgels provide the equivalent polyphenol content of 4 to 6 tablespoons of extra virgin olive oil.

**Sesame Lignans Extend Fish Oil’s Benefits**

The unstable nature of fatty acids like fish oil limits their biological efficacy in the body. Scientific studies show that when **sesame lignans** are supplemented with fish oil, the beneficial effects are augmented.40,41

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

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

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

**Pure-e™ Wild Fish Oil Concentrate** 4,050 mg

**Yielding:**

- EPA (eicosapentaenoic acid) 1,400 mg
- DHA (docosahexaenoic acid) 1,000 mg
- Typical EPA (eicosapentaenoic acid) 158 mg

**Antarctic Krill (Euphausia superba) oil** 300 mg

**Polyphen-Oil™ Olive extract (fruit and leaf)** 400 mg

(providing 90 mg polyphenols, 20.50 mg verbascoside/oleuropein, 15 mg hydroxytyrosol)

**Sesame seed lignan extract** 10 mg

**Natural Astaxanthin** 4 mg

(from CO2 extract of Haematococcus pluvialis algae)

**Contains crustacean shellfish (krill).**

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

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

---

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

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

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

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

---

**COMPREHENSIVE PANELS**

**MALE LIFE EXTENSION PANEL (LC122582)**

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

DHEA-S Homocysteine

TSK for thyroid function Free Testosterone Estradiol Total Testosterone Vitamin D 25- hydroxy PSA (prostate-specific antigen) Hemoglobin A1c

$269

**FEMALE LIFE EXTENSION PANEL (LC322535)**

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

DHEA-S Homocysteine

TSK for thyroid function Free Testosterone Estradiol Total Testosterone Progesterone Vitamin D 25- hydroxy Hemoglobin A1c

$289

**WEIGHT LOSS LOSS PANEL-COMPREHENSIVE (LC100028)**

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

$275

**WEIGHT LOSS PANEL-BASIC (LC100027)**

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

$130

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

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

$155

**FEMALE HORMONE ADD-ON PANEL (LCADDF)**

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

$125

**LIFE EXTENSION THYROID PANEL (LC304131)**

TSH, 14, Free T3, Free T4.

$75

**FEMALE COMPREHENSIVE HORMONE PROFILE (LC100011)**

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

$298

**MALE COMPREHENSIVE HORMONE PROFILE (LC100010)**

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

$298

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

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

**CARDIOVASCULAR RISK PROFILE**

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

**LIVER FUNCTION PANEL**

AST (SGOT) Total Bilirubin ALT (SGPT) Alkaline Phosphatase LDH

**KIDNEY FUNCTION PANEL**

BUN BUN/Creatinine Ratio Creatinine Uric Acid Albumin Albumin/Globulin Ratio

**BLOOD PROTEIN LEVELS**

Globulin Total Protein Albumin

**BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE**

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

**BLOOD MINERAL PANEL**

Calcium Sodium Magnesium Potassium Phosphorus Iron

**COMPREHENSIVE THYROID PANEL (LC100018)**

TSH, 14, Free T4, Free T3, Reverse T3, TPO, ATA

$199

**FOOD SAFE ALLERGY TEST**

This test measures delayed (IgG) food allergies for 55 common foods.

$198

**ADRENAL FUNCTION PANEL (LC100021)**

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

$136

**OMEGA SCORE**

Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA: EPA ratio, allowing you to determine and track a major factor in total body inflammation.

$131.25

**HEALTHY AGING PANEL-COMPREHENSIVE**

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

$249

**HEALTHY AGING PANEL-BASIC**

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

$149

**VAP™ TEST**

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 subclasse.

$90

---

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

** This test is packaged as a kit, requiring a finger stick performed at home.
Other Popular Tests and Panels

**ENERGY PROFILE (LC100005)**

- CBC/Chemistry Profile (see description)
- Vitamin B12, Folate, Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.

- **$375**

**HORMONES**

- **DHEA-SULFATE (LC004020)**
- This test measures the amount of DHEA-S in the body. It is useful for assessing adrenal function and may be used to evaluate the risk of developing certain diseases or conditions such as cardiovascular disease or metabolic syndrome.

- **$61**

**ANEMIA PANEL* (LC100006) **$86**

- CBC/Chemistry Profile (see description)
- Vitamin B12, Folate, Reticulocyte Count.

**INFLAMMATION PANEL (LC100007)**

- CBC/Chemistry Profile (see description above)
- C-Reactive Protein (high sensitivity), Sedimentation Rate, Rheumatoid (RA) Factor, Antinuclear Antibodies (ANA) Screen.

- **$135**

**THYROID ANTIBODY PROFILE (LC100004)**

- Thyroid Antibodies (TPO) (high sensitivity), TSH, T4, T3

- **$99**

**CARDIAC PLUS* (LC100008) **$145**

- CBC/Chemistry profile (see description)
- Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), Fibrinogen, Homocysteine, DHEA-S.

**VAP™ PLUS* (LC100009)**

- **$330**

**CARDIAC RISK**

- **COQ10* (COENZYME Q10) (LC120251)**
- This test measures the level of CoQ10 in the blood and will provide more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.

- **$99**

**Lp-PLA2 (PLAC® TEST) (LC123240)**

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

- **$125**

**GLYCOMARK (LC500115)**

- This test measures your average maximum glucose over the past two weeks and is an excellent tool in monitoring postmeal glucose control.

- **$99**

**NUTRIENT PANEL* (LC100024)**

- Vitamin B12, Folate, Vitamin D 25-hydroxy, Vitamin C, Vitamin A, Selenium, Zinc, CoQ10, and RBC magnesium.

- **$49**

**MALE HEALTH**

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

- **$31**

**BONE HEALTH**

- **VITAMIN D (250H) (LC081950)**
- This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.

- **$47**

**OSTEOCALCIN* (LC010249)**

- Osteocalcin is often used as a biochemical marker, or biomarker, for the bone formation process. It has been routinely observed that higher serum osteocalcin levels are relatively well correlated with bone diseases characterized by increased bone turnover, especially osteoporosis.

- **$91**

**DPD CROSS LINK URINE TEST (LC51105)**

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

- **$79**

**TERMS AND CONDITIONS**

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

Signature of Life Extension Member

X

Life Extension Foundation Members only

MEMBER NO.

- Male
- Female

Name

Date of Birth (required) / / 

Address

City

State Zip

Phone

Credit Card No.

Expiration Date / 

Mail your order form to:

Life Extension National Diagnostics, Inc.
3600 West Commercial Boulevard
Fort Lauderdale, FL 33309

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

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

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

This is NOT a complete listing of LE blood test services. Call 1-800-208-3444 for additional information.
AMINO ACIDS
Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginine
 Branched Chain Amino Acids
 D, L-Phenylalanine Capsules
 Glycine Capsules
 L-Arginine Capsules
Arginine/L-Ornithine Capsules
 Acetyl-L-Carnitine-Arginate
 N-Acetyl-L-Cysteine Capsules
Optimized Carnitine with GlycoCarn®
Arginine/L-Ornithine Capsules
Acetyl-L-Carnitine-Arginate
AMINO ACIDS
Vinpocetine
Optimized Carnitine with GlycoCarn®
Optimized Ashwagandha Extract
Glycine Capsules
Ginkgo Biloba Certified Extract™
Carnosoothe w/PicroProtect
CDP Choline Capsules
Super Carnosine Capsules
Super Ginkgo Extract
Carnosoothe w/PicroProtect

FOOD
Rich Rewards™ Black Bean Vegetable Soup
Rich Rewards™ Spicy Cruciferous Vegetable Soup
Rich Rewards™ Cruciferous Vegetable Soup
Rich Rewards™ Lentil Soup
Rich Rewards™ Mung Bean Soup with Turmeric
Rich Rewards™ Coffee (Available in mocha, vanilla and decaffeinated)
Rich Rewards™ Protein Creamer
Rich Rewards™ Whole Bean Coffee

HEART CARE
Dr. Proctor’s Advanced Hair Formula
Dr. Proctor’s Shampoo
Super-Absorbable Tocotrienols

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

HERBAL/PHYTO PRODUCTS
Artichoke Leaf Extract
Asian Energy Boost
Astaxanthin w/Phospholipids
Berry Complete
Blueberry Extract
Blueberry Extract w/Pomegranate
Butterbur Extract w/Standardized Rosmarinic Acid
Calcium D-Glucarate
Enhanced Berry Complete with Acai
Full-Spectrum Pomegranate™
Grapeseed Extract with Resveratrol & Pterostilbene
Huperzine A
Kyoic® Garlic Formula 102 + 105
Kyoic® Reserve
Lycopene Extract
Mega Green Tea Extract
Mega Green Tea Extract (Decaffeinated) (also w/FlavoneGenic® Green Coffee Extract)
Mega Lycopene Extract
Optimized Ashwagandha Extract
Optimized Garlic
Pomegranate Extract
Pomegranate Juice Concentrate
Pyrocynogen
Optimized Quercetin
Resveratrol with Synergistic Grape-Berry Actives
Rhodiola Extract
Silymarin
SODzyme™ with GliSODin®
Stevia Extract
Advanced Bio-Curcumin® with Ginger & Turmerones
Super Bio-Curcumin®
Super Ginkgo Extract
Triple Action Cruciferous Vegetable Extract
Venotone
Whole Grape Extract

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

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

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

LIVER HEALTH
Branch Chain Amino Acids
Certified European Milk Thistle
N-Acetyl Cysteine
L-Carnitine
Liver Efficiency Formula
European Milk Thistle
Advanced Phospholipid Delivery
Hepatopro
SAMe
Silymarin
MINERALS
Biosil
Bone Restore
Bone Strength Formula w/KoAct®
Bone-Up™
Boron Capsules
Calcium Citrate with D3
Chromium Ultra
Copper
Iodoral
Iron Protein Plus
Magnesium
Magnesium Citrate
Only Trace Minerals
Optimized Chromium w/Crominex® 3+ OptiZinc
Sea-Iodine™
Selenium
Se-Methyl L-Selenocysteine
Strontium
Vanadyl Sulfate
Zinc Lozenges

MISCELLANEOUS
Blood Pressure Monitor Arm Cuff
CR Way Edition Advanced Dietary Software

MOUTH CARE
Advanced Oral Hygiene
Mouthwash w/Pomegranate
Toothpaste
Xylitol White™ Mouthwash

MULTIVITAMIN
Booster
Children's Formula Life Extension Mix™
Comprehensive Nutrient Packs Advanced
Life Extension Mix™ Capsules
Life Extension Mix™ Powder
Life Extension Mix™ Tablets
Life Extension Mix™ w/Copper Capsules
Life Extension Mix™ w/Copper Tablets
Life Extension Mix™ w/Extra Niacin
Life Extension Mix™ w/Extra Niacin w/Copper
Life Extension Mix™ w/Stevia Powder
Life Extension Mix™ w/Stevia w/Copper Powder
Life Extension One-Per-Day
Life Extension Two-Per-Day
Super Booster Softgels w/Advanced K2 Complex

PET CARE
Cat Mix
Dog Mix

PROSTATE & URINARY HEALTH
Optimized Cran-Max® with UTI-Rose®
Pomi-T™
Super Saw Palmetto/Nettle Root Formula
w/Beta-Sitosterol
Ultra Natural Prostate Formula

SKIN CARE
Advanced Lightening Cream
Advanced Triple Peptide Serum
Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermAbrasion
Anti-Aging Mask
Anti-Glycation Serum
Anti-Aging Rejuvenating Face Cream with Coffee Extracts
Anti-Aging Rejuvenating Scalp Serum
Antioxidant Rejuvenating Foot Cream
Antioxidant Rejuvenating Foot Scrub
Antioxidant Rejuvenating Hand Cream
Antioxidant Rejuvenating Hand Scrub
Anti-Redness & Blemish Lotion
Bio-Collagen w/Patentd UC-II®
Bioflavonoid Cream
Broccoli Sprout
Corrective Clearing Mask
DNA Repair Cream
Dual-Action MicroDermAbrasion
Essential Plant Lipids Reparative Serum
Face Master® Platinum
Face Rejuvenating Antioxidant Cream
Enhanced FernBlock™ with Red Orange Complex
Fine Line-Less
Hair Suppress Formula
Healing Formula All-in-One Cream
Healing Mask
Hyaluronic Facial Moisturizer
Hydrating Anti-oxidant Face Mist
Hydrotein®
Lifting & Tightening Complex
Lycopene Cream
Melatonin Cream
Mild Facial Cleanser
Neck Rejuvenating Antioxidant Cream
Pigment Correcting Cream (Ultra) Rejuvenex®
Rejuvenex® Body Lotion
Rejuvenex® Factor Firming Serum
Rejuvenating Serum
Renewing Eye Cream
Resveratrol Anti-Oxidant Serum
Skin Lightening Serum
Skin Restoring Phytoceramides w/Lipowheat®
Skin Stem Cell Serum
Stem Cell Cream w/Alpine Rose
Ultra Rejuvenex®
Ultra RejuveNight® w/Progestosterone
Ultra Lip Plumper
Ultra Wrinkle Relaxer
Under Eye Refining Serum
Under Eye Rescue Cream
Vitamin C Serum
Vitamin D Lotion
Vitamin Essential Cream
Vitamin K Healing Cream
Youth Serum

SOY
Natural Estrogen w/Pomegranate
Super Absorbable Soy Isoflavones
Ultra Soy Extract

SPECIAL PURPOSE FORMULA
Anti-Alcohol Antioxidants w/HepatoProtection Complex
Benfotiamine w/Thiamine
Breast Health Formula
Butterbur Extract w/Standardized Rosmarinic Acid
Chlorine
Chlorophyllin
Green Coffee Extract CoffeeGenic®
(Also w/Glucose control)

SPORTS PERFORMANCE
Creatine Capsules
DMG (N, N-dimethylglycine)
L-Glutamine Capsules
L-Glutamine Powder
Whey Protein Isolate
Whey Protein Concentrate

VITAMINS
Ascorbyl Palmate Capsules
B12
Beta Carotene
Biotin Capsules
Buffered Vitamin C Powder
Complete B Complex
Effervescent Vitamin C
Fast-C®
Folic Acid + B12
Gamma Tocopherol w/Sesame Lignans
Gamma Tocopherol/Tocotrienols
Inositol Capsules
Mega Lycopene Extract
Methylcobalamin
MK-7
No-Flush Niacin
Optimized Folate
Super Ascorbate C Capsules
Super Ascorbate C Powder
Super K w/Advanced K2 Complex
Tocotrienols w/Sesame Lignans
Vitamin B3 (Niacin) Capsules
Vitamin B6
Vitamin B12 Lozenges
Vitamin C
Vitamin D3
Vitamin D3 w/Sea-Iodine™
Vitamins D and K w/Sea-Iodine™
Vitamin E
Vitamin K2

WEIGHT MANAGEMENT
Advanced Anti-Adipocyte Formula w/Meratrim® & Integra Lean®
Advanced Natural Appetite Suppress
Calorie Control Weight Management™ Formula w/CoffeeGenic® Green Coffee Extract
CoffeeGenic® Weight Management™ with
Green Coffee Extract
7-KETO DHEA® Complete
DHEA® Complete
Fucoxanthin Slim™
Garcinia HCA
IntegraLean® African Mango Irvingia
Optimized Irvingia w/Phase 3™ Calorie Control Complex
Optimized Saffron with Satireal®
Natural Glucose Absorption Control
Super Citrimax®
Super CLA Blend w/Guarana and Sesame Lignans
Super CLA Blend w/Sesame Lignans
WellBetX PGX® plus Mulberry
| No.  | Description                                                                 | Retail Each | Member Each | Qty | Total 
|-----|------------------------------------------------------------------------------|-------------|-------------|-----|-------
| 01524 | ACETYL-L-CARNITINE - 500 mg, 100 veg. caps                                  | $34.00      | $25.50      |     |       
| 01525 | ACETYL-L-CARNITINE ARGINATE - 100 veg. caps                                 | $36.00      | $25.50      |     |       
| 01628 | ADRENAL ENERGY FORMULA - 60 veg. caps                                       | $24.00      | $16.50      |     |       
| 01630 | ADRENAL ENERGY FORMULA - 120 veg. caps                                      | $42.00      | $31.50      |     |       
| 01828 | ADVANCED LIPID CONTROL - 60 veg. caps                                       | $30.00      | $22.50      |     |       
| 01521 | ADVANCED ORAL HYGIENE - 60 mini lozenges                                    | $20.00      | $15.00      |     |       
| 00681 | ACE - 500 mg, 30 caps                                                        | $70.00      | $52.50      |     |       
| 00457 | ALPHALIPIDIC ACID W/BOTIN (SUPER) - 250 mg, 60 caps                         | $37.00      | $27.75      |     |       
| 01440 | ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO - 100 caps                            | $20.00      | $15.00      |     |       
| 01509 | ANTI-ADIPOCYTE FORMULA w/MERATRIM* & INTEGRA LEAN* (ADVANCED) - 60 caps     | $39.00      | $30.00      |     |       
| 01625 | APPLEWISE POLYPHENOL EXTRACT - 600 mg, 30 veg. caps                         | $21.00      | $15.75      |     |       
| 01039 | ARGinine/ORNITHINE - 500/250, 100 caps                                      | $17.99      | $13.49      |     |       
| 00008 | ARGinine/ORNITHINE POWDER - 150 grams                                        | $22.95      | $17.21      |     |       
| 01624 | (L)-ARGININE CAPS - 700 mg, 200 veg. caps                                   | $26.50      | $19.88      |     |       
| 01617 | ARTHRIMAX® w/TEAFLAVINS & APRESFLUX® - 120 veg. caps                        | $44.00      | $33.00      |     |       
| 01618 | ARTHRIMAX® ADVANCED w/UC-II® & APRESFLUX® - 60 caps                         | $36.00      | $27.00      |     |       
| 01404 | ARTHRO-IMMUNE JOINT SUPPORT - 60 veg. caps                                  | $30.00      | $22.50      |     |       
| 00919 | ARTICHOKE LEAF EXTRACT - 500 mg, 180 veg. caps                             | $30.00      | $22.50      |     |       
| 01533 | ASCORBIL PALMITATE - 500 mg, 100 veg. caps                                  | $22.50      | $16.88      |     |       
| 00888 | ASHWAGANDHA EXTRACT (OPTIMIZED) - 60 veg. caps                              | $10.00      | $7.50       |     |       
| 01805 | ASIAN ENERGY BOOST - 90 veg. caps                                           | $24.00      | $18.00      |     |       
| 01438 | BLUEBERRY EXTRACT w/POMEGRANATE - 60 veg. caps                              | $30.00      | $22.50      |     |       
| 01506 | BONE FORMULA (DR. STRUM'S INTENSIVE) - 300 caps                             | $56.00      | $42.00      |     |       
| 01726 | BONE RESTORE - 120 caps                                                     | $22.00      | $16.50      |     |       
| 01727 | BONE RESTORE W/VITAMIN K2 - 120 caps                                        | $24.00      | $18.00      |     |       
| 01725 | BONE STRENGTH FORMULA w/KOACT® - 120 caps                                  | $45.00      | $33.75      |     |       
| 01379 | BOOSTER - 60 softgels                                                       | $48.00      | $36.00      |     |       
| 01680 | BOOSTER w/ADVANCED K2 COMPLEX (SUPER) - 60 softgels                         | $42.00      | $31.50      |     |       
| 01661 | BORON - 3 mg, 100 veg. caps                                                 | $5.95       | $4.46       |     |       
| 00202 | BOSWELLA - 100 caps                                                         | $38.00      | $28.50      |     |       
| 01802 | BRAIN SHIELD™ - 60 veg. caps                                                | $33.00      | $24.75      |     |       
| 01253 | BRANCHED CHAIN AMINO ACIDS - 90 veg. caps                                   | $19.50      | $14.63      |     |       
| 01699 | BREAST HEALTH FORMULA - 60 caps                                            | $34.00      | $25.50      |     |       
| 00933 | BRITE EYES III - 2 vials, 5 ml each                                          | $34.00      | $25.50      |     |       

**SUB-TOTAL OF COLUMN 1**

**SUB-TOTAL OF COLUMN 2**
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01203</td>
<td>Bromelain (Specially-Coated) - 500 mg, 60 enteric coated tablets</td>
<td>$21.00</td>
<td>$15.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00884</td>
<td>Buttebur Ext. w/STANDARDIZED ROSMARINIC ACID - 60 softgels</td>
<td>$44.00</td>
<td>$33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$39.60</td>
<td>$29.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01653</td>
<td>Calcium Citrate w/Vitamin D - 300 caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01651</td>
<td>Calcium D-Gluconate - 200 mg, 60 veg. caps</td>
<td>$18.00</td>
<td>$13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01693</td>
<td>Calorie Control Weight Management Formula w/COFFEEGENIC® Green Coffee Extract</td>
<td>$60.00</td>
<td>$45.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$54.00</td>
<td>$40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$50.00</td>
<td>$37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01700</td>
<td>Cardio Pena® w/STANDARDIZED HAWTHORN &amp; ARALUNA - 120 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00916</td>
<td>Carnitine w/GLYCOCARN® (Optimized) - 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01532</td>
<td>L-Carnitine - 500 mg, 30 veg. caps</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01258</td>
<td>Carnossothene w/PHICROPROTETM - 60 veg. caps</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01687</td>
<td>Carnosine (Super) - 500 mg, 90 veg. caps</td>
<td>$66.00</td>
<td>$49.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01003</td>
<td>Cat Mix - 100 grams powder</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01659</td>
<td>CDP Choline Caps - 250 mg, 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01391</td>
<td>Children's Formula Life Extension Mix® - 100 chewable tablets</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00550</td>
<td>Chellella - 500 mg, 200 tablets</td>
<td>$23.50</td>
<td>$17.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01571</td>
<td>Chlорофylln - 100 mg, 100 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01359</td>
<td>Chlo-Leet® - 90 capsules</td>
<td>$35.00</td>
<td>$26.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01477</td>
<td>Chromium Ultra - 100 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01504</td>
<td>Chromium w/Crominex® 3+ (Optimized) - 500 mcg, 60 veg. caps</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01503</td>
<td>Cisulin® w/WINSE® and Crominex® 3+ - 90 veg. caps</td>
<td>$38.00</td>
<td>$28.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01818</td>
<td>Citrimax® (Super) - 180 veg. caps</td>
<td>$40.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00818</td>
<td>CLA Blend w/Sesame Lignans (Super) - 3,000 mg, 120 softgels</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00819</td>
<td>CLA Blend w/Guarana &amp; Sesame (Super) - 3,000 mg, 120 softgels</td>
<td>$42.00</td>
<td>$31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01707</td>
<td>Coffeegenic® Weight Management® w/Green Coffee Extract - 90 veg. caps</td>
<td>$40.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01896</td>
<td>Cognitex® w/Brain Shield® - 90 softgels</td>
<td>$60.00</td>
<td>$45.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$52.00</td>
<td>$39.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$48.00</td>
<td>$36.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 3**

**SUB-TOTAL OF COLUMN 4**

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

August 2014
<table>
<thead>
<tr>
<th>No.</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>80133</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80127</td>
<td>$45.00</td>
<td>$33.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80128</td>
<td>$59.00</td>
<td>$44.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80117</td>
<td>$64.00</td>
<td>$48.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80121</td>
<td>$58.00</td>
<td>$43.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80105</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80147</td>
<td>$46.00</td>
<td>$34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80144</td>
<td>$46.00</td>
<td>$34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80120</td>
<td>$64.50</td>
<td>$48.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80141</td>
<td>$49.00</td>
<td>$36.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80108</td>
<td>$74.95</td>
<td>$56.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80123</td>
<td>$69.50</td>
<td>$52.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80107</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80131</td>
<td>$59.00</td>
<td>$44.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80137</td>
<td>$53.00</td>
<td>$39.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80115</td>
<td>$64.50</td>
<td>$48.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80102</td>
<td>$79.50</td>
<td>$59.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80109</td>
<td>$58.00</td>
<td>$43.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80110</td>
<td>$58.00</td>
<td>$43.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80138</td>
<td>$39.95</td>
<td>$29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80103</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80146</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80135</td>
<td>$33.00</td>
<td>$24.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80114</td>
<td>$59.00</td>
<td>$44.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80122</td>
<td>$64.00</td>
<td>$48.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80111</td>
<td>$74.00</td>
<td>$55.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80150</td>
<td>$65.00</td>
<td>$48.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80142</td>
<td>$46.00</td>
<td>$34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80112</td>
<td>$85.00</td>
<td>$63.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80130</td>
<td>$74.00</td>
<td>$55.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80143</td>
<td>$66.00</td>
<td>$49.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80148</td>
<td>$39.00</td>
<td>$29.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80116</td>
<td>$64.00</td>
<td>$48.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80101</td>
<td>$89.95</td>
<td>$67.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80113</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80104</td>
<td>$74.50</td>
<td>$55.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80129</td>
<td>$85.00</td>
<td>$63.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80136</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80145</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80149</td>
<td>$65.00</td>
<td>$48.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80138</td>
<td>$17.50</td>
<td>$13.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80126</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80144</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80144</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80144</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80106</td>
<td>$13.50</td>
<td>$10.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Item Description</td>
<td>Retail Each</td>
<td>Member Each</td>
<td>Qty</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-----</td>
</tr>
<tr>
<td>01640</td>
<td>DNA (VEGETARIAN SOURCED) - 30 veg. softgels</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>00677</th>
<th>DHEA - 25 mg, 100 tablets (dissolve in mouth)</th>
<th>14.00</th>
<th>10.50</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01478</td>
<td>DHEA COMPLETE - 60 veg. caps</td>
<td>48.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00335</td>
<td>DHEA - 25 mg, 100 caps</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00454</td>
<td>DHEA - 15 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00852</td>
<td>DHEA - 50 mg, 60 caps</td>
<td>19.00</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01689</td>
<td>DHEA - 100 mg, 60 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01358</td>
<td>DIGEST NC - 30 tablets</td>
<td>13.00</td>
<td>10.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01727</td>
<td>DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps</td>
<td>19.50</td>
<td>14.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01671</td>
<td>D.L-PHENYLALANINE CAPSULES - 500 mg, 100 veg. caps</td>
<td>18.75</td>
<td>14.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01540</td>
<td>DIME BITARTRATE - 150 mg, 200 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00059</td>
<td>DMO - 125 mg, 60 tablets</td>
<td>24.80</td>
<td>18.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01570</td>
<td>DNA PROTECTION FORMULA - 60 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00544</td>
<td>DOG MIX - 100 grams powder</td>
<td>19.50</td>
<td>14.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00321</td>
<td>DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 oz</td>
<td>39.95</td>
<td>29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00320</td>
<td>DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 oz</td>
<td>24.95</td>
<td>18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00999</td>
<td>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 oz</td>
<td>39.95</td>
<td>29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01528</td>
<td>ECHINACEA EXTRACT - 250 mg, 60 veg. caps</td>
<td>$14.35</td>
<td>$10.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01498</td>
<td>ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels</td>
<td>60.00</td>
<td>42.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00997</td>
<td>ENDOTHELIAL DEFENSE™ w/GLIADIN® - 60 veg. caps</td>
<td>54.00</td>
<td>40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00625</td>
<td>EPA/DHA (Mega) - 120 softgels</td>
<td>19.95</td>
<td>14.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01737</td>
<td>ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets</td>
<td>36.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01042</td>
<td>EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01706</td>
<td>EXTRAORDINARY ENZYMES - 60 caps</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01514</td>
<td>EYE PRESSURE SUPPORT w/MIRTGENIOL® - 30 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**SUB-TOTAL OF COLUMN 7**

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00154</td>
<td>FACE MASTER® PLATINUM</td>
<td>$199.00</td>
<td>$199.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00985</td>
<td>FAST-ACTING JOINT FORMULA - 30 caps</td>
<td>39.00</td>
<td>29.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01717</td>
<td>FAST-C® w/DIHYDROQUERCETIN - 120 veg. tabs</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20053</td>
<td>FEM DOPHILUS® - 30 caps</td>
<td>25.95</td>
<td>19.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20055</td>
<td>FEM DOPHILUS® - 60 caps</td>
<td>39.95</td>
<td>29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01064</td>
<td>FEMMENESSENCE MACAPAUSE® - 120 veg. caps</td>
<td>34.99</td>
<td>26.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01728</td>
<td>FERNILOCK® w/RED ORANGE COMPLEX (ENHANCED) - 30 veg. caps</td>
<td>42.00</td>
<td>31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01670</td>
<td>FIBER FOOD CAPS - 200 veg. caps</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00718</td>
<td>FIBRINOPEN GENIUS™ - 30 veg. caps</td>
<td>49.00</td>
<td>36.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01749</td>
<td>FLAX SEED (ORGANIC GOLDEN GROUND) - 14 oz.</td>
<td>11.67</td>
<td>8.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01806</td>
<td>FLORASSIST® PROBIOTIC - 30 liquid veg. caps</td>
<td>33.00</td>
<td>24.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01439</td>
<td>FOLATE (OPTIMIZED) (L-METHYLFOLATE) 1,000 mcg - 100 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01641</td>
<td>FOLIC ACID + B12 CAPSULES - 200 veg. caps</td>
<td>10.50</td>
<td>7.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01544</td>
<td>FORSKOLIN - 10 mg, 60 veg. caps</td>
<td>14.00</td>
<td>7.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01513</td>
<td>FUCOIDAN w/MARITECH® 925 (OPTIMIZED) - 60 veg. caps</td>
<td>35.00</td>
<td>26.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00993</td>
<td>FUCOXANTHIN-SLIM™ - 90 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00559</td>
<td>GAMMA E TOCOPHEROL/TOCOTHIENOLS - 60 softgels</td>
<td>$42.00</td>
<td>$31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00759</td>
<td>GAMMA E TOCOPHEROL w/SESAME LIGNANS - 60 softgels</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01394</td>
<td>(OPTIMIZED) GARLIC - 200 veg. caps</td>
<td>24.95</td>
<td>18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01301</td>
<td>GH PITUTARY SUPPORT DAY FORMULA - 120 tabs</td>
<td>48.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01302</td>
<td>GH PITUTARY SUPPORT NIGHT FORMULA - 120 veg. caps</td>
<td>25.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00122</td>
<td>GINGER FORCE - 60 softgels</td>
<td>31.95</td>
<td>23.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01658</td>
<td>GINKGO BILOBA CERTIFIED EXTRACT® - 120 mg, 365 veg. caps</td>
<td>46.00</td>
<td>34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01648</td>
<td>GINKGO EXTRACT 28/7 (SUPER) - 120 mg, 100 veg. caps</td>
<td>29.00</td>
<td>21.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00756</td>
<td>GLA WITH SESAME LIGNANS (MEGA) - 60 softgels</td>
<td>19.50</td>
<td>14.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03345</td>
<td>(L) GLUTAMINE CAPSULES - 500 mg, 100 caps</td>
<td>10.50</td>
<td>7.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00141</td>
<td>(L)-GLUTAMINE POWDER - 10 caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00522</td>
<td>GLUCOSAMINE/CHONDROITIN CAPSULES - 100 caps</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 8**

**AUGUST 2014**
### Buyers Club Order Form

**To order call:** 1.954.766.8433 or 1.800.544.4440

<table>
<thead>
<tr>
<th>No.</th>
<th>G CONTINUED</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01074</td>
<td>S HTP - 100 mg, 60 caps</td>
<td>$27.95</td>
<td>$20.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01738</td>
<td>HCA (GARCINIA) - 90 veg. caps</td>
<td>$17.00</td>
<td>$12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01393</td>
<td>HEPATOPRO - 900 mg, 60 softgels</td>
<td>$50.00</td>
<td>$37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01435</td>
<td>HOMOCYTEINE RESIST - 100 veg caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01527</td>
<td>HUPERZINE A - 200 mcg, 60 veg caps</td>
<td>$40.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00061</td>
<td>HYDRODERM® - 1 oz</td>
<td>$79.95</td>
<td>$59.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01060</td>
<td>I26® HYPERIMMUNE EGG - 140 grams powder</td>
<td>$54.99</td>
<td>$46.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01704</td>
<td>IMMUNE MODULATOR W/TROFENDO® - 60 veg. caps</td>
<td>$17.00</td>
<td>$12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00955</td>
<td>IMMUNE PROTECT W/Paractin® - 30 veg. caps</td>
<td>$29.50</td>
<td>$22.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01049</td>
<td>INNERPOWER® - 555 grams powder</td>
<td>$42.00</td>
<td>$31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01674</td>
<td>INOSITOL CAPSULES - 1,000 mg, 360 veg. caps</td>
<td>$62.00</td>
<td>$46.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01292</td>
<td>INTEGRA-LEAN® AFRICAN MANGO IRVINGIA - 150 mg, 60 veg. caps</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01002</td>
<td>IODORAL® - 180 tabs</td>
<td>$50.00</td>
<td>$37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01677</td>
<td>IRON PROTEIN PLUS - 300 mg, 100 caps</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01492</td>
<td>IRVINGIA W/PHASE 3™ - 120 veg caps</td>
<td>$6.00</td>
<td>$4.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 9**

<table>
<thead>
<tr>
<th>No.</th>
<th>J, K</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00056</td>
<td>JARRO-DOPHILUS EPS® - 60 veg. caps</td>
<td>$22.95</td>
<td>$17.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01759</td>
<td>JARRO-DOPHILUS EPS® - 25 Billion - 30 caps</td>
<td>$39.95</td>
<td>$29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01724</td>
<td>K w/ADVANCED K2 COMPLEX (SUPER) - 90 softgels</td>
<td>$30.00</td>
<td>$22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600</td>
<td>KRILL HEALTHY JOINT FORMULA - 30 softgels</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01050</td>
<td>KRILL OIL PHOSPHOMEGA® - 60 softgels</td>
<td>$33.95</td>
<td>$25.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00316</td>
<td>KYOLIC® GARLIC FORMULA 102 - 200 caps</td>
<td>$26.45</td>
<td>$19.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00214</td>
<td>KYOLIC® GARLIC FORMULA 105 - 200 caps</td>
<td>$27.45</td>
<td>$20.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00789</td>
<td>KYOLIC® RESERVE - 600 mg, 120 caps</td>
<td>$27.95</td>
<td>$20.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01681</td>
<td>LACTOFERRIN (APOLACTOFERRIN) CAPS - 60 caps</td>
<td>$52.00</td>
<td>$39.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00200</td>
<td>LECITHIN - 16 oz. granules</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01855</td>
<td>LIFE EXTENSION MIX™ - 315 tablets</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01856</td>
<td>LIFE EXTENSION MIX™ POWDER - 14.81 oz</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01865</td>
<td>LIFE EXTENSION MIX™ - 315 tablets w/o copper</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01866</td>
<td>LIFE EXTENSION MIX™ - 315 tablets w/o copper</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01867</td>
<td>LIFE EXTENSION MIX™ W/EXTRA NIACIN - 315 tablets</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01868</td>
<td>LIFE EXTENSION MIX™ - 490 caps w/o copper</td>
<td>$110.00</td>
<td>$82.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01869</td>
<td>LIFE EXTENSION MIX™ - 490 caps w/o copper</td>
<td>$98.00</td>
<td>$73.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01870</td>
<td>LIVER EFFICIENCY FORMULA - 30 veg. caps</td>
<td>$18.00</td>
<td>$13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01639</td>
<td>S-LOX INHIBITOR W/Apresflex™ - 100 mg, 60 veg. caps</td>
<td>$22.00</td>
<td>$16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01678</td>
<td>L-LYSINE - 620 mg, 100 veg. caps</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00455</td>
<td>LYCOPEN EXTRACT (MEGA) - 15 mg, 90 softgels</td>
<td>$35.00</td>
<td>$26.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 10**
### Buyers Club Order Form

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01279</td>
<td>MOUTH WASH W/ POMEGRANATE - 16 oz</td>
<td>$18.50</td>
<td>$13.88</td>
<td></td>
</tr>
<tr>
<td>00451</td>
<td>MSM (METHYL SULFONYL METHANE) - 1,000 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td></td>
</tr>
<tr>
<td>01534</td>
<td>CMACICULAR ORAL SUPPORT - 60 softgels</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
</tr>
<tr>
<td>00066</td>
<td>NATTOKINASE - 60 softgels</td>
<td>25.50</td>
<td>19.13</td>
<td></td>
</tr>
<tr>
<td>01807</td>
<td>NATURAL APPETITE SUPPRESS (ADVANCED) - 60 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
</tr>
<tr>
<td>00984</td>
<td>NATURAL BP MANAGEMENT - 60 tablets</td>
<td>44.00</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>01892</td>
<td>NATURAL ESTROGEN - 60 veg. tabs</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
</tr>
<tr>
<td>01221</td>
<td>NATURAL FEMALE SUPPORT - 30 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01471</td>
<td>NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps</td>
<td>39.00</td>
<td>29.25</td>
<td></td>
</tr>
<tr>
<td>01626</td>
<td>NATURAL SEX FOR WOMEN 50+ (ADVANCED) - 90 veg. caps</td>
<td>59.00</td>
<td>44.25</td>
<td></td>
</tr>
<tr>
<td>01444</td>
<td>NATURAL SLEEP* - 60 veg. caps</td>
<td>13.00</td>
<td>9.75</td>
<td></td>
</tr>
<tr>
<td>01551</td>
<td>NATURAL SLEEP w/ MELATONIN (ENHANCED) - 30 caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
</tr>
<tr>
<td>01511</td>
<td>NATURAL SLEEP* w/ MELATONIN (ENHANCED) - 30 caps</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>01445</td>
<td>NATURAL SLEEP* MELATONIN - 5 mg, 60 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
</tr>
<tr>
<td>00987</td>
<td>NATURAL STRESS RELIEF - 30 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01603</td>
<td>NEURO-MAG® MAGNESIUM L-THREONATE - 90 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>01602</td>
<td>NEURO-MAG® L-THREONATE W/CALCIUM &amp; VITAMIN D 225 grams - Lemon flavor</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>00373</td>
<td>NO-FLUSH NIACIN - 800 mg, 100 caps</td>
<td>19.00</td>
<td>14.25</td>
<td></td>
</tr>
<tr>
<td>01800</td>
<td>MIGRA-MAG w/ BRAIN SHIELD™ - 90 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
</tr>
<tr>
<td>01522</td>
<td>MILK THISTLE (CERTIFIED EUROPEAN) - 60 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td></td>
</tr>
<tr>
<td>01822</td>
<td>MILK THISTLE (EUROPEAN) - 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01817</td>
<td>MILK THISTLE (EUROPEAN) - 120 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>01698</td>
<td>MIRAFOREST® w/ STANDARDIZED LIGNANS (SUPER) - 120 caps</td>
<td>62.00</td>
<td>46.50</td>
<td></td>
</tr>
<tr>
<td>01769</td>
<td>MITOCHONDRIAL BASICS w/BIOPOQ2™ - 30 caps</td>
<td>52.00</td>
<td>39.00</td>
<td></td>
</tr>
<tr>
<td>01768</td>
<td>MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPOQ2™ - 120 caps</td>
<td>94.00</td>
<td>70.50</td>
<td></td>
</tr>
<tr>
<td>00065</td>
<td>MK-7 - 90 mcg, 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 11**

<table>
<thead>
<tr>
<th>No.</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01511</td>
<td>CMACICULAR ORAL SUPPORT - 60 softgels</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
</tr>
<tr>
<td>00066</td>
<td>NATTOKINASE - 60 softgels</td>
<td>25.50</td>
<td>19.13</td>
<td></td>
</tr>
<tr>
<td>01807</td>
<td>NATURAL APPETITE SUPPRESS (ADVANCED) - 60 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
</tr>
<tr>
<td>00984</td>
<td>NATURAL BP MANAGEMENT - 60 tablets</td>
<td>44.00</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>01892</td>
<td>NATURAL ESTROGEN - 60 veg. tabs</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
</tr>
<tr>
<td>01221</td>
<td>NATURAL FEMALE SUPPORT - 30 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01471</td>
<td>NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps</td>
<td>39.00</td>
<td>29.25</td>
<td></td>
</tr>
<tr>
<td>01626</td>
<td>NATURAL SEX FOR WOMEN 50+ (ADVANCED) - 90 veg. caps</td>
<td>59.00</td>
<td>44.25</td>
<td></td>
</tr>
<tr>
<td>01444</td>
<td>NATURAL SLEEP* - 60 veg. caps</td>
<td>13.00</td>
<td>9.75</td>
<td></td>
</tr>
<tr>
<td>01551</td>
<td>NATURAL SLEEP w/ MELATONIN (ENHANCED) - 30 caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
</tr>
<tr>
<td>01511</td>
<td>NATURAL SLEEP* w/ MELATONIN (ENHANCED) - 30 caps</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>01445</td>
<td>NATURAL SLEEP* MELATONIN - 5 mg, 60 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
</tr>
<tr>
<td>00987</td>
<td>NATURAL STRESS RELIEF - 30 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01603</td>
<td>NEURO-MAG® MAGNESIUM L-THREONATE - 90 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>01602</td>
<td>NEURO-MAG® L-THREONATE W/CALCIUM &amp; VITAMIN D 225 grams - Lemon flavor</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
</tr>
<tr>
<td>00373</td>
<td>NO-FLUSH NIACIN - 800 mg, 100 caps</td>
<td>19.00</td>
<td>14.25</td>
<td></td>
</tr>
<tr>
<td>01800</td>
<td>MIGRA-MAG w/ BRAIN SHIELD™ - 90 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
</tr>
<tr>
<td>01522</td>
<td>MILK THISTLE (CERTIFIED EUROPEAN) - 60 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td></td>
</tr>
<tr>
<td>01822</td>
<td>MILK THISTLE (EUROPEAN) - 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
<tr>
<td>01817</td>
<td>MILK THISTLE (EUROPEAN) - 120 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td></td>
</tr>
<tr>
<td>01698</td>
<td>MIRAFOREST® w/ STANDARDIZED LIGNANS (SUPER) - 120 caps</td>
<td>62.00</td>
<td>46.50</td>
<td></td>
</tr>
<tr>
<td>01769</td>
<td>MITOCHONDRIAL BASICS w/BIOPOQ2™ - 30 caps</td>
<td>52.00</td>
<td>39.00</td>
<td></td>
</tr>
<tr>
<td>01768</td>
<td>MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPOQ2™ - 120 caps</td>
<td>94.00</td>
<td>70.50</td>
<td></td>
</tr>
<tr>
<td>00065</td>
<td>MK-7 - 90 mcg, 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 12**

To order online visit: www.LifeExtension.com
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01485</td>
<td>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; OLIVE FRUIT EXTRACT (SUPER) - 60 softgels</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 10 bottles, price each</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01619</td>
<td>OMEGA 3 EPA/DHA w/SESAME LIGNANS &amp; - 240 softgels</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 10 bottles, price each</td>
<td>24.90</td>
<td>18.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01632</td>
<td>OMEGA-3 LEMON WHIRL - 16 oz bottle</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01633</td>
<td>OMEGA-3 TROPICAL WHIRL - 16 oz bottle</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01801</td>
<td>ONE-PER-DAY - 60 tablets</td>
<td>$22.00</td>
<td>$16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01328</td>
<td>ONLY TRACE MINERALS - 90 veg. caps</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>12.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01789</td>
<td>PALMETTOGUARD® SAV PALMETTO w/BETA SITOSTEROL - 30 softgels</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 12 bottles, price each</td>
<td>12.00</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00773</td>
<td>PANCREATIN - 500 mg, 50 caps</td>
<td>$13.22</td>
<td>$9.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01323</td>
<td>PEAK A TP** with GLYCOCARN** - 60 veg. caps</td>
<td>$54.00</td>
<td>$40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>50.00</td>
<td>37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00342</td>
<td>PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder</td>
<td>$109.95</td>
<td>$82.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01080</td>
<td>PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps</td>
<td>$79.95</td>
<td>$59.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01811</td>
<td>PEONY IMMUNE - 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00673</td>
<td>PGS** PLUS MULBERRY (WELLBETX®) - 180 caps</td>
<td>$34.95</td>
<td>$26.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00865</td>
<td>PHARMA GABA*- 60 chewable tablets</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>27.00</td>
<td>20.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01676</td>
<td>PHOSPHATIDYLSERINE CAPS - 100 mg, 100 veg. caps</td>
<td>$54.00</td>
<td>$40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>48.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01390</td>
<td>PHOSPHOMEGA® - 60 softgels</td>
<td>$39.95</td>
<td>$29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01436</td>
<td>POLICOSANOL - 10 mg, 60 veg. caps</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 bottles, price each</td>
<td>15.00</td>
<td>11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01423</td>
<td>POMEGRANATE** (FULL-SPECTRUM) - 30 softgels</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>21.00</td>
<td>15.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00956</td>
<td>POMEGRANATE EXTRACT - 30 veg. caps</td>
<td>19.50</td>
<td>14.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>17.55</td>
<td>13.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00957</td>
<td>POMEGRANATE JUICE CONCENTRATE - 16 oz. liquid</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01797</td>
<td>POMO-T® - 60 veg. caps</td>
<td>$33.33</td>
<td>$25.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00577</td>
<td>POTASSIUM IODIDE - 1 box, 14 tablets</td>
<td>$6.95</td>
<td>$5.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 boxes, price each</td>
<td>5.25</td>
<td>3.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01500</td>
<td>POQ CAPS W/BIOPOQ® - 10 mg, 30 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01647</td>
<td>POQ CAPS W/BIOPOQ® - 20 mg, 30 veg. caps</td>
<td>$40.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>36.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00302</td>
<td>PREGNENOLONE - 50 mg, 100 caps</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00700</td>
<td>PREGNENOLONE - 100 mg, 100 caps</td>
<td>$30.00</td>
<td>$22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>27.00</td>
<td>20.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>**01373</td>
<td>PRELUX® NATURAL SEX FOR MEN® - 60 tablets</td>
<td>$52.00</td>
<td>$39.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>48.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 13**
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Oty</th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>00889</td>
<td>RHODIOLA EXTRACT** - 250 mg, 60 veg. caps</td>
<td></td>
<td>$11.75</td>
<td>$8.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>10.58</td>
<td>7.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00972</td>
<td>(D) NIBOSE POWDER - 150 grams</td>
<td></td>
<td>27.50</td>
<td>20.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 jars, price each</td>
<td></td>
<td>24.75</td>
<td>18.56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01473</td>
<td>(D) NIBOSE TABLETS - 100 veg. tabs</td>
<td></td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01609</td>
<td>RICH REWARDS® BREAKFAST GROUND COFFEE - 12 oz. bag</td>
<td></td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Vanilla</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01729</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag</td>
<td></td>
<td>15.00</td>
<td>11.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Vanilla</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01730</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag</td>
<td></td>
<td>15.00</td>
<td>11.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Natural Mocha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01612</td>
<td>RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE - 12 oz. bag</td>
<td></td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RICH REWARDS® DECAFERNATED ROAST GROUND COFFEE - 12 oz. bag</td>
<td></td>
<td>14.00</td>
<td>10.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01712</td>
<td>RICH REWARDS® BLACK BEAN VEGETABLE SOUP - 32 oz. bottle</td>
<td></td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>12.25</td>
<td>9.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01530</td>
<td>RICH REWARDS® CRUCIFEROSUS VEGETABLE SOUP - 32 oz. bottle</td>
<td></td>
<td>11.95</td>
<td>8.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 bottles, price each</td>
<td></td>
<td>11.25</td>
<td>8.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01531</td>
<td>CRICAN® CRUCIFEROSUS VEGETABLE SOUP - 32 oz. bottle</td>
<td></td>
<td>11.95</td>
<td>8.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 bottles, price each</td>
<td></td>
<td>11.25</td>
<td>8.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01705</td>
<td>RICH REWARDS® LENTIL VEGETABLE SOUP - 32 oz. bottle</td>
<td></td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 bottles, price each</td>
<td></td>
<td>12.25</td>
<td>9.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01810</td>
<td>RICH REWARDS® MUNG BEAN SOUP W/TURMERIC - 32 oz. bottle</td>
<td></td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 bottles, price each</td>
<td></td>
<td>12.25</td>
<td>9.19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01820</td>
<td>RICH REWARDS® PROTEIN COFFEE CREAMER - Vanilla - 5 grams</td>
<td></td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>23.00</td>
<td>17.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01208</td>
<td>R-LIPSIC ACID (SUPER) - 240 mg, 60 veg. caps</td>
<td></td>
<td>49.00</td>
<td>36.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>45.00</td>
<td>33.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00070</td>
<td>RITA CAPSULES - 500 mg, 100 caps</td>
<td></td>
<td>17.95</td>
<td>13.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>16.16</td>
<td>12.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**S</td>
<td>SAFRON w/SATIEREAL® (OPTIMIZED) - 60 veg. caps</td>
<td></td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01432</td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00358</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets</td>
<td></td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 8 boxes, price each</td>
<td></td>
<td>14.00</td>
<td>10.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00453</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets</td>
<td></td>
<td>36.00</td>
<td>27.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00557</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets</td>
<td></td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 6 boxes, price each</td>
<td></td>
<td>24.00</td>
<td>18.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01055</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets</td>
<td></td>
<td>66.00</td>
<td>49.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>60.00</td>
<td>45.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01740</td>
<td>SEA-IODINE®** - 1,000 mg, 60 veg. caps</td>
<td></td>
<td>8.00</td>
<td>6.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>7.20</td>
<td>5.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00046</td>
<td>SELENIUM - 2 oz dropper bottle</td>
<td></td>
<td>11.95</td>
<td>8.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01679</td>
<td>SE-METHYL L-SELENIODSTEINE - 200 mcg, 100 veg. caps</td>
<td></td>
<td>12.00</td>
<td>9.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>11.00</td>
<td>8.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00318</td>
<td>SERINAFLAVYZME - 100 tablets</td>
<td></td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00284</td>
<td>SHARK LIVER OIL (NORWEGIAN) - 1,000 mg, 30 softgels</td>
<td></td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01684</td>
<td>SILMARIN - 100 mg, 50 veg. caps</td>
<td></td>
<td>9.25</td>
<td>6.84</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td>8.25</td>
<td>6.19</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 15**
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01225</td>
<td>VITAMIN K2 (LOW-DOSE) - 45 mcg, 90 softgels</td>
<td>$18.00</td>
<td>$13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00409</td>
<td>XYLIWHITE™ MOUTHWASH - 16 oz</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01739</td>
<td>WINTER WELLNESS™ - 60 caps</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>13.00</td>
<td>9.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01813</td>
<td>ZINC HIGH POTENCY - 50 mg, 90 veg. caps</td>
<td>$7.95</td>
<td>$5.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>7.00</td>
<td>5.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01561</td>
<td>ZINC LOZENGES - 60 veg. lozenges</td>
<td>$8.00</td>
<td>$6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>8.00</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01051</td>
<td>ZYFLAMEND® WHOLE BODY - 120 softgels</td>
<td>64.95</td>
<td>48.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>29.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01721</td>
<td>TRYPTOPHAN PLUS (OPTIMIZED) - 90 veg. caps</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>29.00</td>
<td>21.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01816</td>
<td>TWO-PER-DAY - 60 tablets</td>
<td>10.50</td>
<td>7.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>9.50</td>
<td>7.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01815</td>
<td>TWO-PER-DAY - 120 tablets</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01814</td>
<td>TWO-PER-DAY - 120 caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00326</td>
<td>L-TYROSINE - 500 mg, 100 tablets</td>
<td>12.98</td>
<td>9.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00372</td>
<td>VITAMIN B3 NIACIN - 500 mg, 100 tablets</td>
<td>12.95</td>
<td>9.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>12.00</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00361</td>
<td>VITAMIN B12 - 500 mcg, 100 tablets</td>
<td>8.75</td>
<td>6.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>7.25</td>
<td>5.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01526</td>
<td>VITAMIN B3 NIACIN - 1,000 mg, 100 veg. caps</td>
<td>12.75</td>
<td>9.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>12.00</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00377</td>
<td>VITAMIN B3 NIACIN - 500 mg, 100 caps</td>
<td>7.65</td>
<td>5.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>6.65</td>
<td>4.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>VITAMIN B5 - 500 mg, 100 caps (Pantothenic Acid)</td>
<td>10.50</td>
<td>7.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>9.38</td>
<td>7.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01355</td>
<td>VITAMIN B6 - 250 mg, 100 veg. caps</td>
<td>12.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>11.00</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00361</td>
<td>VITAMIN B12 - 500 mcg, 100 lozenges</td>
<td>8.75</td>
<td>6.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>7.25</td>
<td>5.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01654</td>
<td>VITAMIN C w/ DHYDROQUERCETIN - 1,000 mg, 60 veg. tablets</td>
<td>10.00</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>9.00</td>
<td>6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>VITAMIN C w/ DHYDROQUERCETIN - 1,000 mg, 250 veg. tablets</td>
<td>25.50</td>
<td>19.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>23.25</td>
<td>17.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00864</td>
<td>VITAMIN C (BUFFERED POWDER) - 454.6 grams</td>
<td>23.95</td>
<td>17.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01736</td>
<td>(EFFERVESCENT) VITAMIN C-MAGNESIUM CRYSTALS - 180 grams</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01732</td>
<td>VITAMIN D3 - 2,000 IU, 1 fl oz, Mint flavor</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>25.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01753</td>
<td>VITAMIN D3 - 1,000 IU, 90 softgels</td>
<td>7.00</td>
<td>5.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>6.00</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01751</td>
<td>VITAMIN D3 - 1,000 IU, 250 softgels</td>
<td>12.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>11.25</td>
<td>8.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01713</td>
<td>VITAMIN D3 - 5,000 IU, 60 softgels</td>
<td>11.00</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>9.90</td>
<td>7.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01718</td>
<td>VITAMIN D3 - 7,000 IU, 60 softgels</td>
<td>14.00</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>12.60</td>
<td>9.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01758</td>
<td>VITAMIN D3 w/ SEA-IODINE™ - 5,000 IU, 60 caps</td>
<td>14.00</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>12.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00864</td>
<td>VITAMIN D3 Liquid Emulsion - 2,000 IU, 1 oz.</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>25.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01741</td>
<td>VITAMIN D AND K w/ SEA-IODINE™ - 60 caps</td>
<td>24.00</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01763</td>
<td>VITAMIN E (NATURAL) - 400 IU, 100 softgels</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 10 bottles, price each</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ORDER SUBTOTALS**

<table>
<thead>
<tr>
<th>Sub-Total Column</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
</table>

**ORDER TOTALS**

- **Sub-Total Column 1**
- **Sub-Total Column 2**
- **Sub-Total Column 3**
- **Sub-Total Column 4**
- **Sub-Total Column 5**
- **Sub-Total Column 6**
- **Sub-Total Column 7**
- **Sub-Total Column 8**
- **Sub-Total Column 9**
- **Sub-Total Column 10**
- **Sub-Total Column 11**
- **Sub-Total Column 12**
- **Sub-Total Column 13**
- **Sub-Total Column 14**
- **Sub-Total Column 15**
- **Sub-Total Column 16**
- **Sub-Total Column 17**
- **Sub-Total Column 18**

---

**Bill To Address**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City/State/Zip-Postal Code</td>
<td>Country</td>
</tr>
<tr>
<td>Phone</td>
<td>Fax</td>
</tr>
<tr>
<td>VISA/MasterCard/Alex/Discover #</td>
<td></td>
</tr>
</tbody>
</table>

---

**Ship To Address**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City/State/Zip-Postal Code</td>
<td>Country</td>
</tr>
<tr>
<td>Phone</td>
<td>Fax</td>
</tr>
</tbody>
</table>

---

**Prices Subject to Change Without Notice. Please Notify the Life Extension Foundation® of any Address Change**

---

**Buyers Club Order Form**

---

**LIFE EXTENSION FOUNDATION® MEMBERS ONLY**

- **Member No.**
- **Print Membership No. for Member Discount**

---

**Not a Member? Join Today!**

- I want to join the Life Extension Foundation®. Enclosed is $75 for annual membership. (Canadians add $7.00, all others outside the U.S. add $35.00). Send me: Disease Prevention & Treatment Protocol Book

---

**Order Online At:** www.LifeExtension.com

---

**PLEASE MAIL TO:**
Life Extension Foundation® Buyers Club, Inc.
P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198
Or Call Toll-Free 1-800-544-4440 • Fax: 866-728-1050

---

**ORDER SUBTOTALS**

- **Sub-Total Column 1**
- **Sub-Total Column 2**
- **Sub-Total Column 3**
- **Sub-Total Column 4**
- **Sub-Total Column 5**
- **Sub-Total Column 6**
- **Sub-Total Column 7**
- **Sub-Total Column 8**
- **Sub-Total Column 9**
- **Sub-Total Column 10**
- **Sub-Total Column 11**
- **Sub-Total Column 12**
- **Sub-Total Column 13**
- **Sub-Total Column 14**
- **Sub-Total Column 15**
- **Sub-Total Column 16**
- **Sub-Total Column 17**
- **Sub-Total Column 18**

---

**Order Totals**

- **Sub-Total Column A (Sub-total of Columns 1 through 18)**
- **Postage and Handling (Any size order, continental U.S.)** $5.50
- **C.O.D.s (Add $7 for C.O.D. orders)**
- **Shipping**
  - UPS Overnight: Add $7.00
  - UPS 2nd Day Air: Add $5.00
  - UPS 2nd Day: Add $5.00
  - Canada UPS Express: Flat rate $17.50
  - UK Flat Rate $25 USD
  - All Other International Air Will Be Added
- **Grand Total** (Must be in U.S. dollars)

---

**Bill To Address**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City/State/Zip-Postal Code</td>
<td>Country</td>
</tr>
<tr>
<td>Phone</td>
<td>Fax</td>
</tr>
<tr>
<td>VISA/MasterCard/Alex/Discover #</td>
<td></td>
</tr>
</tbody>
</table>

---

**Ship To Address**

<table>
<thead>
<tr>
<th>Name</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>City/State/Zip-Postal Code</td>
<td>Country</td>
</tr>
<tr>
<td>Phone</td>
<td>Fax</td>
</tr>
<tr>
<td>Signature</td>
<td></td>
</tr>
</tbody>
</table>

---

**Prices Subject to Change Without Notice. Please Notify the Life Extension Foundation® of any Address Change**
### LIFE EXTENSION MEDIA

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Year</th>
<th>Retail Price</th>
<th>Member Price</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>33869</td>
<td>UNLEASH THE POWER OF THE FEMALE BRAIN</td>
<td>by Daniel Amen, MD</td>
<td>2014</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33870</td>
<td>MAGNIFICENT MAGNESIUM</td>
<td>by Dennis Goodman, MD</td>
<td>2014</td>
<td>$14.95</td>
<td>$11.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33866</td>
<td>HEART, AN AMERICAN MEDICAL ODYSSEY</td>
<td>by Dick Cheney &amp; Jonathan Reiner, MD</td>
<td>2014</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33864</td>
<td>THE SUPPLEMENT PYRAMID</td>
<td>by Michael A. Smith, MD</td>
<td>2014</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT05</td>
<td>DISEASE PREVENTION AND TREATMENT, EXPANDED FIFTH EDITION (hardcover)</td>
<td></td>
<td>2014</td>
<td>$39.95</td>
<td>$39.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 books, price each</td>
<td></td>
<td></td>
<td>$36.00</td>
<td>$36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33865</td>
<td>THE RESTORATION OF THE HUMAN BODY [IN 7 PARTS]</td>
<td>by Sergey A. Dougan, MD, PhD</td>
<td>2014</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33862</td>
<td>I'M TOO YOUNG FOR THIS</td>
<td>by Suzanne Somers</td>
<td>2013</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33835</td>
<td>PHARMACRACY</td>
<td>by William Falcon</td>
<td>2011</td>
<td>$24.00</td>
<td>$9.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 3 books, price each</td>
<td></td>
<td></td>
<td>$5.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3358</td>
<td>THE VITAMIN D SOLUTION</td>
<td>by Michael F. Holick, PhD, MD (paperback)</td>
<td>2013</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33861</td>
<td>THE SOUTH BEACH DIET GLUTEN SOLUTION</td>
<td>by Dr. Arthur Agatston</td>
<td>2013</td>
<td>$25.99</td>
<td>$19.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33589</td>
<td>THE BLOOD SUGAR SOLUTION</td>
<td>by Mark Hyman, MD</td>
<td>2013</td>
<td>$27.99</td>
<td>$20.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33855</td>
<td>POWER FOODS FOR THE BRAIN</td>
<td>by Neal D. Barnard, MD</td>
<td>2013</td>
<td>$26.99</td>
<td>$20.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33854</td>
<td>THE GREAT CHOLESTEROL MYTH</td>
<td>by Jonny Bowden, PhD, CNS and Stephen Sinatra, MD</td>
<td>2012</td>
<td>$19.99</td>
<td>$14.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33852</td>
<td>THE MAGIC OF CHOLESTEROL NUMBERS</td>
<td>by Dr. Sergey Dougan</td>
<td>2012</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33848</td>
<td>YOUR BEST INVESTMENT SECRETS TO A HEALTHY BODY AND MIND</td>
<td>by Edwin Lee, MD</td>
<td>2012</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33847</td>
<td>THE FATIGUE SOLUTION</td>
<td>by Dr. Eva Cwynar</td>
<td>2012</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33843</td>
<td>BOMBshell</td>
<td>by Suzanne Somers</td>
<td>2012</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33845</td>
<td>DRUG MUGGERS</td>
<td>by R.Ph. Susy Cohen</td>
<td>2012</td>
<td>$21.99</td>
<td>$16.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33842</td>
<td>HEART ATTACK PROOF</td>
<td>by Michael Ozser, MD</td>
<td>2012</td>
<td>$19.95</td>
<td>$14.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33838</td>
<td>YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY</td>
<td>by Gary Goldladen, MD</td>
<td>2012</td>
<td>$26.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33833</td>
<td>THE LIFE PLAN</td>
<td>by Jeffrey S. Life, MD, PhD</td>
<td>2011</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33832</td>
<td>YOUR BONES</td>
<td>by Lara Pizzorno, MA, LMT</td>
<td>2011</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33822</td>
<td>BREAKTHROUGH: EIGHT STEPS TO WELLNESS</td>
<td>by Suzanne Somers (paperback)</td>
<td>2010</td>
<td>$15.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33836</td>
<td>WEIGHT LOSS GUIDE</td>
<td>by Steven V. Joyal, MD and William Falcon (hardcover) (3rd Edition)</td>
<td>2010</td>
<td>$29.95</td>
<td>$8.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3816</td>
<td>FDA: FAILURE, DECEPTION, ABUSE</td>
<td>by Life Extension Foundation</td>
<td>2010</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33818</td>
<td>STAY YOUNG &amp; SEXY WITH BIO-IDENTICAL HORMONE REPLACEMENT</td>
<td>by Jonathan Wright, MD</td>
<td>2010</td>
<td>$19.95</td>
<td>$14.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33815</td>
<td>KNOCKOUT</td>
<td>by Suzanne Somers</td>
<td>2009</td>
<td>$25.99</td>
<td>$17.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33812</td>
<td>LIFE OVER CANCER</td>
<td>by Keith Bloch, MD (hardcover)</td>
<td>2009</td>
<td>$25.00</td>
<td>$18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33809</td>
<td>TESTOSTERONE FOR LIFE</td>
<td>by Abraham Mangertaler, MD</td>
<td>2008</td>
<td>$16.95</td>
<td>$11.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33869</td>
<td>LIFE EXTENSION REVOLUTION</td>
<td>by Philip Lee Miller, MD (paperback)</td>
<td></td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33805</td>
<td>MIAMI MEDITERRANEAN DIET WITH 300 RECIPES</td>
<td>by Michael D. Ozser, MD, FACC, FAHA (hardcover)</td>
<td>2008</td>
<td>$24.95</td>
<td>$16.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33906</td>
<td>THE MIGRAINE CURE</td>
<td>by Sergey Dougan, MD, PhD</td>
<td>2006</td>
<td>$24.00</td>
<td>$15.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33670</td>
<td>A PRIMER ON PROSTATE CANCER</td>
<td>by Stephen B. Strum, MD, and Donna Pogliano</td>
<td>2005</td>
<td>$28.95</td>
<td>$21.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33808</td>
<td>THE CR WAY</td>
<td>by Paul McClothin and Meredith Avellin</td>
<td></td>
<td>$15.95</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33828</td>
<td>THE SEXY YEARS</td>
<td>by Suzanne Somers (paperback)</td>
<td>2004</td>
<td>$15.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33813</td>
<td>WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT DIABETES</td>
<td>by Steven V. Joyal, MD</td>
<td>2008</td>
<td>$14.99</td>
<td>$10.49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Shipping only $5.50 U.S. • $17.50 Canada • $12.50 Hawaii, Alaska, U.S. Virgin Islands, Puerto Rico • UK Flat rate $25 USD.**

Or Call Toll Free 1-800-544-4440  Fax: 866-728-1050

Other International Shipping Restrictions May Apply. Please visit www.lef.org/vitamins-supplements/shipping/shipping-information.htm for details.

### LIFE EXTENSION FOUNDATION® MEMBERS ONLY

**NAME E-MAIL**

**ADDRESS**

**CITY/STATE/ZIP-POSTAL CODE**

**COUNTRY**

**PHONE FAX**

**VISA/MASTERCARD/AMEX/DISCOVER EXP DATE**

**SIGNATURE**

- [ ] COD
- [ ] UPS RED LABEL
- [ ] UPS BLUE LABEL

**PLEASE MAIL TO:** Life Extension Foundation Buyers Club, Inc.
P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198
Or Call Toll Free 1-800-544-4440  Fax: 866-728-1050

**MEMBER NO.**

**PRINT MEMBERSHIP NO. FOR MEMBER DISCOUNT**

**NOT A MEMBER? JOIN TODAY!**

- [ ] I want to join the Life Extension Foundation®.
  Enclosed is $75 for annual membership. (Canadians add $7.00; all others outside the U.S. add $25.00. Send me: Disease Prevention & Treatment Protocal Book

**MEMBER NO.**

[Add $7 for C.O.D. • Add $16.00 for UPS overnight • Add $7.00 for UPS 2nd day air • International air mail costs will be added.]**
FREE Gift to New Members

This 2014 edition of Disease Prevention and Treatment provides 1,400 pages of information about therapies that are documented in the scientific literature, but are not routinely used in clinical medical practice. Gaining access to this knowledge enables one with a medical disorder to take advantage of these advanced modalities immediately, rather than waiting years for conventional medicine to catch on.

To order a copy of Disease Prevention and Treatment, visit www.LifeExtension.com

HOW TO JOIN THE LIFE EXTENSION FOUNDATION®

As a member of the Life Extension Foundation®, you have the opportunity to participate in a great scientific endeavor. We are the world’s premier organization dedicated to stopping and reversing aging.

Our 34-year track record shows that we have been five to 10 years ahead of conventional and alternative medicine in making new life-saving therapies available to our members.

When you join the Life Extension Foundation®, we update you on the latest published medical research by sending you FREE books. Our most impressive publication is the 1,400-page Disease Prevention and Treatment protocol book that contains novel therapies to treat 130 common diseases of aging. Disease Prevention and Treatment is the only book that combines conventional and alternative therapies in order to implement a treatment regimen for fighting the multiple processes involved in degenerative disease.

Each month, Life Extension Foundation® members receive a magazine packed with the latest medical findings from around the world. Members also can call a toll-free phone number to talk to our knowledgeable health advisors about their health issues.

If your number one priority is good health and a long life, please join our not-for-profit organization.

Four Easy Ways to Join
1. Call toll-free 1-800-544-4440  2. Go to www.lef.org  3. Fax back to 1-866-728-1050  4. Mail to: Life Extension Foundation® • PO Box 407198 Ft. Lauderdale, FL 33340-7198

MEMBERSHIP APPLICATION

I want to contribute to your research efforts to extend the healthy human life span. Enclosed is my first year’s membership donation of $75 to join the most elite group of longevity enthusiasts in the world. (Canadians add $7, all others outside the U.S. add $35) Item code: MEMB1. Call for multiple year membership rates.

Name

Address

City               ST               ZIP

Email

Phone

☑ Check enclosed (payable to Life Extension Foundation®)

☑ Charge my cc:

Card #               Exp.
Whole-Body Health as Nature Intended

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

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

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

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

Visit newchapter.com to learn more!

Available at Life Extension
To order, call 1-800-544-4440
or visit www.LifeExtension.com

Zyflamend Whole Body
120 Softgels (Item #01051) Retail $64.95 Member Price $48.71

*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.

*According to 2015 SPRING Market Research

© 2014 New Chapter, Inc.
You deserve the best.

At Master Supplements, we believe that you deserve the best; and that you need to follow your gut to get it. We have been raising the standard of digestive health for over 10 years and are dedicated to getting our powerful products into the hands of everyone who needs them.

WHAT SETS US APART?

- Maximum Economic Value! Two capsules a week on maintenance dose.
- Full transparency with lab tests published online by lot number.
- Patented Prebiotic Stimulation to power up probiotic strains.
- Deep delivery and natural acid proof protection.

Call Life Extension® now to order any of these fine Master Supplement products to feel the benefits for yourself. 800-544-4440

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.
Can a protein originally derived from a jellyfish improve your memory? Scientists say, “Yes!”

Can a simple protein hold the key to improving your memory?

Researchers have discovered a protein that actually supports healthy brain function.*

For many years, researchers have known that the human brain loses cells throughout our lives, part of the natural process of aging. In fact, we lose about 85,000 brain cells per day, that is one per second, over 31 million brain cells every year! This impacts every aspect of your life...how you think and how you feel.

Recently, scientists made a significant breakthrough in brain health with the discovery that apoaequorin can support healthy brain function, help you have a sharper mind, and think clearer.*

Supports Healthy Brain Function*

Apoaequorin is in the same family of proteins as those found in humans, but it was originally discovered in one of nature’s simplest organisms — the jellyfish.

Supports a Sharper Mind*

Now produced in a scientific process, researchers formulated this vital protein into a product called Prevagen®. Prevagen is clinically shown to help with mild memory problems associated with aging.*

Improves Memory*

This type of protein is vital and found naturally in the human brain and nervous system. As we age we can’t make enough of them to keep up with the brain’s demands. Prevagen supplements these proteins during the natural process of aging to keep your brain healthy. Prevagen comes in an easy-to-swallow capsule. It has no known side effects and will not interact with your current medication.

Supports Clearer Thinking*

Just how well does Prevagen work? In a computer assessed, double-blind, placebo-controlled study, Prevagen improved memory for most subjects within 90 days.*

Try Prevagen® for yourself and feel the difference.

Item #01576
Prevagen 10 mg
Retail $60
Member Price $45

Item #01577
Prevagen ES 20 mg
Retail $70
Member Price $52.50

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

**Ultimate Prostate Protection** formula provides the latest scientifically validated, standardized botanical extracts shown to promote healthy prostate function. No other prostate protection formula provides such a broad array of nutrients to support the multiple factors involved in promoting the aging prostate gland. Here are the ingredients in the **Ultimate Prostate Protection** formula:

- **Standardized lignans** convert to enterolactone in the intestine, which is then absorbed into the bloodstream to provide support for prostate cells against excess estrogen levels.1-3
- **AprèsFlex®** supports normal inhibition of 5-lipoxygenase or 5-LOX, an enzyme that is associated with undesirable cell division changes.4,5
- **Stinging and Dwarf nettle root extracts** help support prostate cells against excess estrogen levels.6,9
- **Saw Palmetto CO2 extract** helps inhibit dihydrotestosterone (DHT) activity in the prostate, helps support normal urinary flow, and helps regulate inflammatory reactions in the prostate.8-10
- **Pygeum** (Pygeum africanum) extract helps suppress prostat glandin production in the prostate and supports healthy urination patterns.11-13
- **Pumpkin seed oil**, from select pumpkins, enhances the composition of free fatty acids and augments saw palmetto’s benefits.14-16
- **Beta-sitosterol** enhances the protective effects of other botanical extracts and helps improve quality of life.17-19
- **Graminex® Flower Pollen Extract™**, has been shown to help relax the smooth muscles of the urethra and help regulate inflammatory reactions.20-22
- **Boron** has been shown to slow elevation of prostate-specific antigen (PSA).23-25
- **Lycopene** supports efficient cellular communication, helps maintain healthy DNA, regulates hormonal metabolism, and promotes healthy prostate size and structure.26-32

### The suggested daily dose of two softgels of **Ultimate Prostate Protection** provides:

- **Saw Palmetto CO2 extract** (fruit) [providing 272 mg total fatty acids] 320 mg
- **Graminex® Flower Pollen Extract™** (from rye) 252 mg
- **Stinging and Dwarf nettle extracts** (root) 240 mg
- **Beta-Sitosterol** (from pine) 180 mg
- **Phospholipids** 160 mg
- **Pygeum extract** (bark) 100 mg
- **Pumpkin seed oil** (providing 170 mg total fatty acids) 200 mg
- **AprèsFlex® Indian frankincense** (Boswellia serrata) extract (gum resin) [providing 14 mg AKBA™] 70 mg
- **Proprietary Enterolactone Precursors Blend** (HMRlignan™ Norway spruce (Picea abies) (knot wood) and Flax (seed) lignan extracts) 20.15 mg
- **Lycopene** (from natural tomato extract (fruit)) 10 mg
- **Boron** (as Albion® bororganic glycine) 3 mg

*3-O-acetyl-11-keto-ß-boswellic acid

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

Contains soybeans.

---

**To order Ultra Natural Prostate, call 1-800-544-4400 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.

---

**References**

7 WHY SICK CARE COSTS SO MUCH
Pharmaceutical lobbyists use regulatory barriers to gouge the public with monopolistic prices. Deregulation would improve healthcare, lower costs, and eliminate the need for government-mandated insurance programs.

22 GREEN TEA DEFENDS AGAINST ALZHEIMER’S DISEASE
Green tea inhibits Alzheimer’s disease by preventing amyloid plaque formation and creating new brain neurons—resulting in a 54% reduction in the risk of cognitive decline.

34 SAFELY MANAGE MENOPAUSAL SYMPTOMS
Recent studies show that hops and lignan extracts block menopausal discomforts such as hot flashes and irritability while providing anticancer and anti-inflammatory benefits.

44 BANISH AGE SPOTS AND HYPERPIGMENTATION
A formulation of three natural compounds reduces the appearance of aging skin by lightening age spots for 80% of individuals, fading freckles for almost 90% of participants, and lessening hyperpigmentation by 25%.

52 TOCOTRIENOLS’ LITTLE-KNOWN BENEFITS
Often overlooked by scientists and consumers, tocotrienols, a component of the spectrum of vitamin E, protect brain circuitry, improve pancreatic cancer survival in lab studies, and foster new artery formation after a stroke.

64 REISHI FIGHTS IMMUNE DECLINE
Scientists have confirmed that the medicinal mushroom reishi contains pharmacologically active compounds that bolster the immune system and help defend against age-induced immune decline.