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The ULTIMATE Source For New Health And Medical Findings From Around The World

February 2013

How Engineered Stem Cells May Enable Youthful Immortality

Near 100% Protection Against Glucose-Induced Arterial Damage

Restore Function to Damaged Hearts

High Glucose Sharply Elevates Cancer Risk

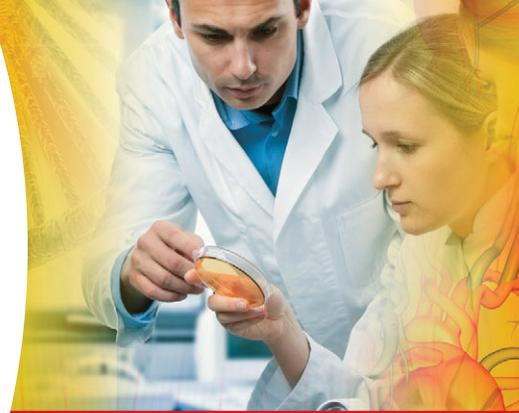
Broad-Spectrum Protection Against Age-Related Disorders

Simple Method to Extend Cellular Longevity Today!



SUPER SALE

The annual **SUPER SALE** enables members to obtain premium grade supplements at prices substantially **below** what commercial companies charge. When members buy products from the **Life Extension Foundation Buyers Club**, they know that the **quality** of the products are backed by the organization's commitment to achieving an indefinitely extended life span. What follows are a few examples of the **savings** members enjoy during the **SUPER SALE**.



Member SUPER SALE
Retail Discount Price Per Bottle

Super Omega-3 EPA/DHA with Sesame Lignans/Olive Fruit Extract 120 softgels, Item # 01482 Super-refined EPA/DHA fish oil plus sesame lignans and olive fruit extract to provide critical omega-3 fatty acids and essential components of the Mediterranean diet.	\$32	\$16.81 <i>(ten-bottle purchase)</i>
PQQ Caps with BioPQQ™ • 10 mg, 30 vegetarian capsules, Item # 01500 Promotes mitochondrial biogenesis (generation of new mitochondria) in aging cells.	\$24	\$14.85 <i>(four-bottle purchase)</i>
Super Bio-Curcumin® • 400 mg, 60 vegetarian capsules, Item # 00407 Advanced formulation that absorbs up to <u>seven</u> times greater than conventional curcumin.	\$38	\$23.63 <i>(four-bottle purchase)</i>
Bone Restore • 150 capsules, Item # 01611 High-potency bone protection formula with highly <i>absorbable</i> forms of calcium, magnesium, and boron. (Also available with vitamin K2)	\$22.50	\$13.16 <i>(four-bottle purchase)</i>
ArthroMax™ Advanced with UC-II® and AprèsFlex™ 60 capsules, Item # 01618 Promotes joint health and may promote comfortable joint structure and function.	\$36	\$21.60 <i>(four-bottle purchase)</i>
Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ 100 mg, 60 softgels, Item # 01426 Superior ubiquinol form of CoQ10 plus an organic compound (shilajit) shown to <u>double</u> mitochondrial CoQ10 levels.	\$62	\$35.10 <i>(ten-bottle purchase)</i>
Ultra Natural Prostate Formula • 60 softgels, Item # 01695 Comprehensive prostate protection utilizing nettle, pygeum, saw palmetto, boswellia, lycopene, boron, and other botanical extracts.	\$38	\$21.60 <i>(twelve-bottle purchase)</i>
Reishi Extract Mushroom Complex 60 vegetarian capsules, Item # 01708 Standardized mushroom extract to restore and regulate immune function.	\$30	\$18.23 <i>(four-bottle purchase)</i>
Optimized Resveratrol with Synergistic Grape-Berry Actives 250 mg, 60 vegetarian capsules, Item # 01430 High potency <i>trans</i> -resveratrol with quercetin, plus <i>trans</i> -pterostilbene and fisetin to support DNA "longevity genes." One-per-day resveratrol formula.	\$46	\$27.90 <i>(four-bottle purchase)</i>
Super Booster Softgels with Advanced K2 Complex 60 softgels, Item # 01680 A convenient <u>one</u> -per-day softgel that includes optimal potencies of gamma-tocopherol, sesame lignans, lycopene, lutein, ginkgo, chlorophyllin, and both forms of vitamin K2.	\$42	\$25.65 <i>(four-bottle purchase)</i>

The SUPER SALE extends to January 31, 2013.

Members traditionally take advantage of the **SUPER SALE** to stock up on a year's supply of their favorite supplements. To place your order, call **1-800-544-4440** or visit **www.lef.org**
(**SUPER SALE** pricing available only to members in the US, Canada, and England.)

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.

REPORTS

26 IMPACT OF AFTER-MEAL GLUCOSE ON ARTERIAL FUNCTION

A major contributor to heart attack risk is *after-meal* blood sugar surges that inflict acute and long-term damage to the inner arterial lining. A new study documented that human subjects given an oral glucose challenge test suffer a **30-44% decrease** in **endothelial function**. This kind of inner arterial wall (endothelial) injury is the underlying cause of coronary artery occlusion and ischemic stroke. Remarkable new findings show that people supplementing with **gamma tocopherol** before the glucose challenge had virtually **no** loss of **endothelial function**.

38 BREAST CANCER AND GLUCOSE: THE SURPRISING CONNECTION

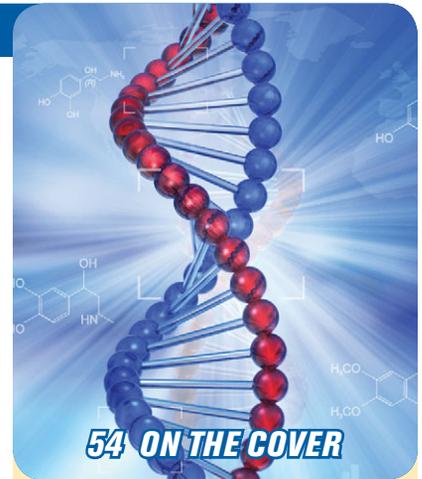
A review of published scientific studies strongly implicates high-normal **blood glucose** with increased **breast cancer** risk. A striking study in **2012** links high-normal glucose to **brain shrinkage** and **cognitive decline**. The take home message is to initiate aggressive actions to maintain **glucose** blood levels at the **low** end of normal range.

68 IMPROVE HEART MUSCLE FUNCTION

New research documents the ability of **hawthorn** and **arjuna** to improve cardiac health. The benefits of these botanicals are enhanced **heart muscle function** and increased **coronary blood flow**, making them of particular interest to those concerned about **congestive heart failure**.

80 MULTIPLE ANTI-AGING PROPERTIES OF REISHI

Reishi medicinal mushroom is best known for its ability to boost **immune surveillance**, which is critical for the detection and elimination of emerging cancers and infectious agents. An abundance of new studies reveal how Reishi's unique compounds target numerous pathological aging mechanisms.



TOWARDS

BIOLOGICAL IMMORTALITY

Scientists are moving closer to **reversing** human aging. **Life Extension®** has funded over **\$2 million** in research aimed at enabling doctors to inject *progenitor* (stem) *cells* that will regenerate our aging bodies. The objective of this historic project is nothing short of **biological immortality**. An incredible new finding reveals that what most Foundation members already do can increase **telomere length**...thereby promoting healthy longevity right now!

DEPARTMENTS

7 PREPARE YOUR BODY TO EAT

Aging humans with high-normal blood sugar face increased risks of virtually **every** degenerative disorder. By ingesting compounds **before** meals that impede sugar absorption and reduce the creation of surplus glucose in their liver, people today can enjoy significantly improved fasting and after-meal **glucose** levels.

19 IN THE NEWS

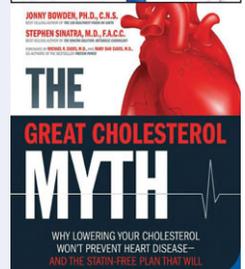
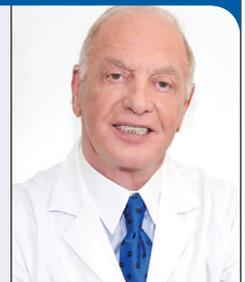
Higher CoQ10 and B6 levels linked to reduced risk of coronary artery disease; increased vitamin D levels protect against osteoarthritis pain; N-acetylcysteine (NAC) protects against CAT scan cancer risk; and more.

97 PROFILE

Cardiac surgeon Dr. Frederic J. Vagnini created the **V Protocol**—a cutting-edge program shown to reverse the killer combination of diabetes and heart disease. Dr. Vagnini uses a protocol of current medical practices with complementary medicine to create disease-free, longer life spans for his patients.

93 AUTHOR INTERVIEW

Coauthors Stephen Sinatra, MD, and Jonny Bowden, PhD, reveal in their new book, *The Great Cholesterol Myth*, the real culprits behind heart disease are sugar, inflammation, stress, and high-carbohydrate diets.



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CONTRIBUTORS

Jonny Bowden, PhD, CNS • D. Dye • Luke Huber, ND • Andrea Pryce, ND
M. Richmond • Kira Schmid, ND • Stephen Sinatra, MD, FACC
Emily Steiner • Michael West, PhD

ADVERTISING

Vice President of Marketing • Rey Searles • rsearles@lifeextension.com
National Advertising Manager • Eric Brown • 404-347-8992

VICE PRESIDENT OF SALES AND BUSINESS DEVELOPMENT

Ron Antriasian • rantriasian@lifeextension.com • 781-271-0089

CIRCULATION & DISTRIBUTION

Life Extension • 3600 West Commercial Blvd., Fort Lauderdale, FL 33309
Editorial offices: 954-766-8433 • fax: 954-491-5306

Customer Service: 800-678-8989 • email: customerservice@lef.org
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NEXT-GENERATION CoQ10

Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™

Since Life Extension® introduced CoQ10 in 1983, our scientists have continued to develop increased potency and absorbability.

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

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

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

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

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

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



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

Item # 01426



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

Item # 01425



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

Item # 01431

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Gustavo Tovar Baez, MD, operates the Life Extension Clinic in Caracas, Venezuela. He is the first physician in Caracas to specialize in anti-aging medicine.

Ricardo Bernales, MD, is a board-certified pediatrician and general practitioner in Chicago, IL, focusing on allergies, bronchial asthma, and immunodeficiency.

Thomas F. Crais, MD, FACS, 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.

William Davis, MD, 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* (www.trackyourplaque.com).

Martin Dayton, MD, DO, 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.

John DeLuca, MD, DC, 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, New Jersey, 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.

Sergey A. Dzugan, MD, PhD, was formerly chief of cardiovascular surgery at the Donetsk Regional Medical Center in Donetsk, Ukraine. Dr. Dzugan's current primary interests are anti-aging and biological therapy for cancer, cholesterol, and hormonal disorders.

Patrick M. Fratellone, MD, RH, is the founder and executive medical director of Fratellone Associates. He completed his Internal Medicine and Cardiology Fellowship at Lenox Hill Hospital in 1994, before becoming the medical director for the Atkins Center for Complementary Medicine.

Carmen Fusco, MS, RN, CNS, 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.

Norman R. Gay, MD, 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.

Mitchell J. Ghen, DO, PhD, holds a doctorate in holistic health and anti-aging and serves on the faculty of medicine at the Benemerita Universidad Autonoma De Puebla, Mexico, as a professor of cellular hemapoetic studies.

Gary Goldfaden, MD, 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.

Miguelangelo Gonzalez, MD, is a certified plastic and reconstructive surgeon at the Miguelangelo Plastic Surgery Clinic, Cabo San Lucas.

Garry F. Gordon, MD, DO, 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.

Richard Heifetz, MD, 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.

Roberto Marasi, MD, is a psychiatrist in Brescia and in Piacenza, Italy. He is involved in anti-aging strategies and weight management.

Maurice D. Marholin, DDC, DO, is a licensed osteopathic physician and chiropractor. He completed a NIH Fellowship in nutrition at UAB. Board certified in family medicine with a CNS in nutrition, he is currently the medical director at Leon County Jail. He is responsible for 1,100–1,200 inmates' medical needs.

Prof. Francesco Marotta, MD, PhD, gastroenterologist and nutrigenomics expert with extensive international university experience. Consulting Professor, WHO-affiliated Center for Biotech & Traditional Medicine, University of Milano, Italy. Hon. Res. Professor, Human Nutrition Dept, TWU, USA. Author of over 130 papers and 400 congress lectures.

Philip Lee Miller, MD, is founder and medical director of the Los Gatos Longevity Institute in Los Gatos, CA.

Michele G. Morrow, DO, FAAFP, is a board-certified family physician who merges mainstream and alternative medicine using functional medicine concepts, nutrition, and natural approaches.

Herbert Pardell, DO, FAAIM, practices internal medicine at the Emerald Hills Medical Center in Hollywood, FL. He is a medical director of the Life Extension Foundation.

Lambert Titus K. Parker, MD, practices internal medicine at the Integrative Longevity Institute of Virginia in Virginia Beach, VA.

Ross Pelton, RPh, PhD, CCN, is director of nutrition and anti-aging research for Intramedicine, Inc.

Patrick Quillin, PhD, RD, CNS, 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.

Allan Rashford, MD, 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.

Marc R. Rose, MD, practices ophthalmology 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.

Michael R. Rose, MD, 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.

Ron Rothenberg, MD, 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.

Roman Rozenzwaig, MD, 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.

Carol Ann Ryser, MD, FAAP, is medical director of Health Centers of America in Kansas City, MO, and focuses on pediatrics and mental health.

Michael D. Seidman, MD, is the regional coordinator of otolaryngology-head and neck surgery for the Bloomfield 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.

Ronald L. Shuler, BS, DDS, CCN, LN, is involved in immunoncology for the prevention and treatment of cancer, human growth hormone secretagogues, and osteoporosis. Board certified in Anti-Aging medicine.

Herbert R. Slavin, MD, is medical director of the Institute of Advanced Medicine in Lauderhill, FL, specializing in anti-aging medicine, disease prevention, chelation therapy, and natural hormone replacement therapy.

Stephen L. Smith, MD, Richland, WA, focuses on treating allergies and is a member of the American Society for Lasers in Medicine and Surgery.

Stephen Strum, MD, is a medical oncologist who has specialized in prostate cancer treatment since 1983. He is co-founder and past medical director of the Prostate Cancer Research Institute. Currently, he directs a practice for prostate cancer patients in Ashland, OR.

Javier Torres, MD, is a member of the American Academy of Physical Medicine and Rehabilitation and is on the medical staffs of Sunrise Hospital, Desert Springs Hospital, Valley Hospital, and Mountain View Hospital, all in Las Vegas, NV.

Paul Wand, MD, Fort Lauderdale, FL, is a clinical neurologist with special expertise in treating and reversing diabetic peripheral neuropathy and brain injuries from various causes.

Charles E. Williamson, MD, Boca Raton, FL, focuses on anti-aging, longevity, and pain management.

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

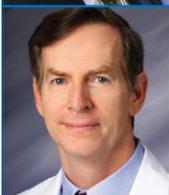
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Aubrey de Grey, PhD, is a biomedical gerontologist and Editor-in-Chief of Rejuvenation Research, the world's highest-impact peer-reviewed journal focused on intervention in aging. He received his BA and PhD from the University of Cambridge in 1985 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 organisations.



Örn Adalsteinsson, PhD, 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*.



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



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.



Eric R. Braverman, MD, is director of the Place for Achieving Total Health (PATH Medical and the PATH Foundation) in New York City. Dr. Braverman received his BA from Brandeis University Summa Cum Laude/ Phi Beta Kappa and his MD from New York University Medical School with honors. He is the author of *Younger You* (2006) and *Younger Thinner You* (2009) and over 100 research papers and is clinical assistant professor of integrative medicine in the Department of Neurosurgery at Cornell Weill Medical College, as well as a lecturer on mild cognitive decline.



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 Castrangius, 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 triple board-certified in internal medicine, sleep disorder medicine, and anti-aging medicine. She also earned the Cenegenics 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.



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.



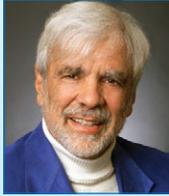
Robert Pastore, PhD, CNS, is a clinical nutritionist practicing in New York City. Due to his thorough nature and focus on organic chemistry and biochemistry, his colleagues have termed his practice forensic nutrition. He is a member of Harvard Medical School Postgraduate Association, the American College of Nutrition, New York Academy of Sciences, and the American Association of Pharmaceutical Scientists.



Stephen B. Strum, MD, FACP, is a medical oncologist who has specialized in prostate cancer treatment since 1983. He is co-founder and past medical director of the Prostate Cancer Research Institute. Currently, he directs a practice for prostate cancer patients in Ashland, OR.



Jonathan Treasure, AHG, MNIMH, is a British medical herbalist at the Centre for Natural Healing in Ashland, OR. Originally a medical sciences graduate from Cambridge University, he studied herbal medicine at the UK School of Phytotherapy. His clinical specialty is integrative botanical medicine for cancer, and his principal research interest is herb/drug interactions.



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

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

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ITEM # 01697

Hops and **rosemary** have all shown to have anti-inflammatory capabilities.

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

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

Just three softgels of Cognitex® provide the following nutrients:

Alpha-Glycerol Phosphoryl Choline (A-GPC)	600 mg
Phosphatidylserine-DHA (PS-DHA) [Sharp-PS® GOLD Conjugated Phosphatidylserine-DHA]	100 mg
Pregnenolone	50 mg
Vinpocetine	20 mg
Phospholipid-Grape Seed Extract	150 mg
Wild Blueberry Extract (<i>Vaccinium angustifolium</i>)	150 mg
Sensoril® Ashwagandha Extract (<i>Withania somnifera</i>)	125 mg
Uridine-5'-Monophosphate (disodium)	50 mg
Proprietary NeuroProtection Complex Blend Perlunan® Hops Extract (<i>Humulus lupulus</i>) Rosemary (<i>Rosmarinus officinalis</i>) Extract	125 mg

To order **Cognitex® with NeuroProtection Complex**, call **1-800-544-4440** or visit **www.LifeExtension.com**

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Preparing Your Body To Eat



BY WILLIAM FALOON



As the **New Year** commences, millions of Americans resolve to **lose weight**.

This desire extends beyond **cosmetic appearance** as the public learns that **surplus body fat** markedly shortens **longevity**.

What's missing is a before-meal strategy that enables people to eat sensibly without **every** excess calorie converting to **stored fat**.

In **2012**, a study was published showing that people consuming **350 mg** of **green coffee bean extract** before meals lost an average of **17.6 pounds** while reducing **body fat**.¹

What few comprehend is that the **glucose-lowering** effect of **green coffee bean extract** not only facilitates **weight loss**, but may lower vascular risks as well.

By way of example, another **2012** study found that **heart attack** risk increased **69%** in a risk group who had only modestly elevated **after-meal** blood glucose levels.²

No one disputes that **diabetics** suffer higher incidences of virtually every disease. What researchers are confirming is that even **non-diabetics** with high normal **glucose** face shortened life spans.³

The encouraging news is that the **obesity-inducing** impact of after-meal **glucose surges** can be mitigated if one commits to "**preparing their body to eat**" before each meal. >

In **1950**, Americans spent an average of **30%** of their income on **food**.⁴

Food cost outlays have since dropped to **10%** as more efficient ways of growing and processing foods have evolved.⁵ This makes excess calorie consumption affordable to most everyone in modern societies.

A consequence of food becoming so cheap is that people eat too much, causing obesity rates to explode.

One can easily draw a correlation to the reduction in food costs as a percentage of average income and the increased amounts of **body fat** people carry. There is more to the story, however.

Tobacco use has plummeted from over **45%** in the **1950s** to around **19%** today.^{6,7} People who smoke cigarettes **weigh less** because they usually consume fewer calories. Nicotine also boosts metabolic rate which facilitates burning of body fat.

For decades, nicotine was the **drug of choice** for large segments of society. Nicotine was smoked throughout the day to induce pleasurable effects in the brain. As smoking rates decline, consumption of **high-glycemic calories** has become a **drug substitute**, as people turn to “feel good” food to replace the brain chemical alteration that previous generations derived from nicotine (tobacco).

Obesity-related disease has now *overcome* the epidemic ill effects caused by **cigarette smoking**. Just think, while **19%** of the population still smokes, almost **70%** are now **overweight** or **obese**, placing them at sharply higher risks of degenerative disease.⁸

Unless aggressive interventions are instituted, a **public health disaster** of unprecedented magnitude is upon us.



Consequences of After-Meal Glucose Surges

Glucose levels rise in your blood after a meal and if you are healthy, glucose will quickly drop back to pre-meal ranges. If glucose rises too much and stays *elevated too long*, however, a tremendous amount of tissue damage is inflicted.⁹⁻¹¹

Diabetics have sharply higher rates of cardiovascular disease compared to non-diabetics.^{12,13} Yet, even in many not considered diabetic, cardiovascular death rates are **40% higher** when **fasting glucose** levels are above **85 mg/dL**.³

The Honolulu Heart Program found that the risk of coronary artery disease correlated with glucose levels measured one hour after a 50-gram oral glucose load. The incidence of fatal coronary artery disease was **twice as high** in patients with after-meal glucose levels between **157-189 mg/dL** compared to those under 114 mg/dL.¹⁴

The Whitehall Study of British male civil servants showed that blood glucose levels of **96 mg/dL** or higher **two hours after a meal** were associated with a **two-fold increase** in mortality from **coronary artery disease**.¹⁵

The Oslo Study indicated that the risk of fatal stroke in diabetic patients increased by **13%** for each **18 mg/dL** elevation in *after-meal* glucose.¹⁶ This is corroborated by a 2012 study showing a **69% increase** in heart attack risk in a risk group based on *after-meal* glucose levels that were only **18 mg/dL** above healthy ranges.²

In an interesting study where after-meal glucose spikes were **impeded**, heart attack rates dropped an astounding **91%**.¹⁷ Even when someone suffers a heart attack, the amount of damage to the heart muscle is **significantly reduced** when steps are taken ahead of time to reduce post-meal glucose surges.^{18,19}

The consistent finding from the scientific literature is that people with higher glucose levels suffer **sharply** higher **vascular disease** rates.

Critical Need to Impede Calorie Absorption

Doctors are so used to seeing elevated blood sugar that they seldom comment when **fasting glucose** levels approach or modestly exceed **100 mg/dL**. Not only do these *slightly* higher blood **glucose** levels increase disease risk,

but they contribute to excess **storage of body fat**.²⁰

There is a tiny percentage of the population that practices rigid **calorie restriction**. These individuals maintain **fasting glucose** under **86 mg/dL** and meticulously guard against **after-meal** meal glucose surges. Their reward for eating around **1,500-1,800 calories a day** is reductions in almost every disease risk and a probable reversal of certain aging processes. Calorie restriction favorably restores gene expression that promotes youthful cellular function.²¹

Life Extension® has advocated moderate to intense calorie restriction since its inception in **1980**. We are well aware, however, that even dedicated health-conscious individuals cannot consistently under-eat.

So to achieve some of the **benefits of calorie restriction** without suffering chronic hunger, most aging people should “**prepare their body to eat**” by ingesting compounds **before** meals that impede sugar absorption and reduce the creation of surplus glucose in their liver from other foods.

Your Liver Converts Protein Into Glucose

Animal and human studies show that those who chronically under eat have markedly **lower** blood **glucose** and **insulin** levels.^{22,23} Excess insulin contributes to the same degenerative diseases as does high glucose. High insulin also causes excess **storage of cellular fat** that precludes successful long-term weight loss.

People who consistently over-eat often have chronically elevated blood glucose, which results in the pancreas secreting a continuous flow of insulin.²⁴⁻²⁶

Even when one reduces consumption of high-glycemic carbohydrates (sugars and starches), the liver continues to synthesize glucose from the protein-based foods one eats.^{27,28} The pancreas of course steps up insulin production to reduce levels of this liver-generated glucose in the blood.

The vast majority of aging people thus suffer chronically elevated **glucose** and **insulin** blood levels. The tragic result can be seen in today’s soaring epidemic of **obesity**.

The take-home lesson is that to achieve health benefits associated with **low glucose-insulin blood levels**, one must reduce after-meal surges of glucose into the bloodstream AND suppress the synthesis of glucose by the liver (gluconeogenesis).

Fortunately, a variety of nutrients and/or drugs (when taken before meals) can both impede glucose absorption **and** slash the amount of glucose synthesized in the liver. A further benefit to these nutrients (and/or drugs) is improvement in muscle cell **insulin sensitivity**, thus further reducing blood glucose/insulin levels.

Confirmation of Sugar’s Lethal Danger

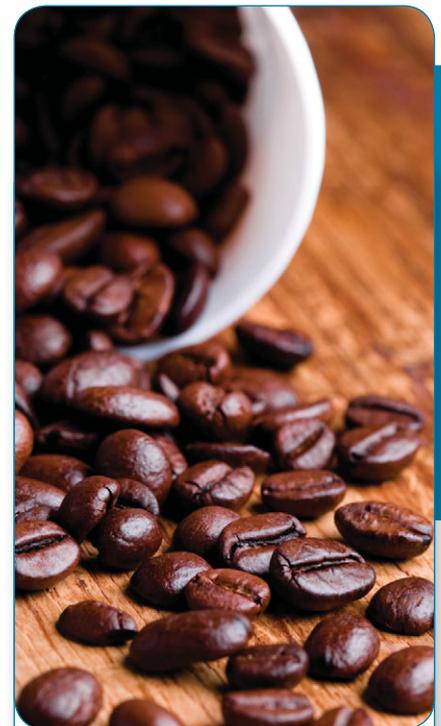
A headline **2012** news story reported that if a person drinks just **one** 12-ounce **sugar sweetened beverage** a day, their risk of having a **heart attack** **increases** by **20%**.²⁹

This finding should not surprise **Life Extension**® members who have already learned that **post-meal** spikes in blood glucose increase risk of virtually every age-related disorder.

For example, a study we previously reported on showed that an

increase of **63 mg/dL** in **after-meal** glucose increases risk of a heart attack by **two-fold** or **200%**.³⁰

This consistent stream of published data is telling us to **avoid** any kind of sweetened beverage. This includes naturally sweetened drinks like **orange juice** that provide little in the way of beneficial polyphenols (like those found in pomegranate), but cause glucose blood levels to spike.



Anti-Diabetic Effects of Coffee

Extensive epidemiological evidence shows that a high level of coffee consumption lowers the risk of **type II diabetes** by **67%**.⁵⁹ This anti-diabetic effect appears to result from **reduced** levels of **blood glucose**, **increased insulin sensitivity**, and **decreased** storage of **fat**.



Deadly Impact of Obesity

According to the World Health Organization, some **1.5 billion people** are obese or overweight.⁶⁸

Each of these obese individuals runs up to a **three times increased risk of death** compared to normal-weight people.⁶⁹

Obesity results in shortening of the life span by an average of **eight to 10 years** compared with people at normal weight. For every **33 extra pounds**, risk of early death increases by around **30%**.⁷⁰

Healthcare costs associated with **obesity** are exceeding those associated with **smoking**!⁷¹

Beyond just looking good, shedding extra pounds is a proven life-saving strategy.

What to Do If You Can't Resist Sweets

Diets comprising of starches and simple sugars cause the majority of the population to suffer dangerously high **glucose-insulin levels**.²⁴

As we age, even carbohydrate restriction does not always get us to optimal fasting glucose levels (under **86 mg/dL**) because we tend to convert other foods into sugar (via **gluconeogenesis**).

For the past four years, I have made it a strict habit to take several **glucose regulating agents** before virtually **every** meal. The result is that a recent **fasting glucose** test

came in at **81 mg/dL**, and I've shed considerable abdominal fat.

I cannot emphasize enough, based on the **totality** of the scientific evidence, the critical need to protect your bloodstream before meals against deadly **glucose surges**.

Drugs That Safely Lower Blood Glucose

For those who prefer to have their doctors prescribe them medications, there are two with proven blood glucose lowering effects.

The first is the glucosidase-inhibiting drug called **acarbose**.

Glucosidase is one of the digestive enzymes that converts ingested sugars into glucose.^{17,31,32} Taking **25-100 mg of acarbose** immediately before one eats will reduce the post-meal glucose surge. Some people complain about intestinal upset with acarbose. It should also be used with caution in those who are hypoglycemic, but otherwise is safe.

The second prescription drug to lower glucose is **metformin**. By inhibiting **gluconeogenesis** in the liver, metformin lowers blood glucose-insulin levels.³³⁻³⁷ Metformin also functions by other beneficial mechanisms.³⁸⁻⁴¹ For three decades, **Life Extension®** provided evidence that metformin is a broad-spectrum anti-aging drug, yet most doctors are ignorant of its multiple benefits and often refuse to prescribe it to non-diabetics.

Metformin can be safely used by virtually everyone as long as they don't have significant impairment of heart, kidney, or liver function and are not hypoglycemic.

Metformin and acarbose are sold as low-cost generic drugs, but many consumers are wary of prescription drugs and choose natural approaches instead. Fortunately, there are affordable **nutrients** that function in analogous ways to **acarbose** and **metformin**.

Natural Glucose Lowering Agents

Human clinical trials show markedly lower increases in **after-meal** blood glucose when **green coffee berry extract** is taken before an oral glucose loading test.^{42,43}

One compelling study showed that people not taking **green coffee extract** had glucose levels of **130 mg/dL** one hour after sugar

ingestion. In study subjects taking **400 mg of green coffee extract**, glucose levels dropped to **93 mg/dL** after sugar ingestion.⁴⁴ The difference between having a post-load glucose reading of **93 mg/dL** compared to **130 mg/dL** is about a **70% reduction** in heart attack risk.³⁰

Green coffee bean extract lowers blood glucose by inhibiting carbohydrate digestive enzymes (similar to the drug **acarbose**) and suppressing the creation of glucose in the liver (like **metformin**.)⁴⁵⁻⁴⁷

For many aging people, taking a **green coffee bean extract** capsule before each meal may be all they need to achieve healthier **fasting** and **after-meal** glucose levels.

Those seeking to reduce glucose readings down to those who practice aggressive **calorie restriction** should seek a **green coffee extract** supplement that also provides **chromium**,⁴⁸⁻⁵⁰ **green tea extract**,⁵¹⁻⁵⁵ and **Irvingia**.⁵⁶⁻⁵⁸

Unique Weight-Loss Mechanisms

Chlorogenic acid in **green coffee extract** antagonizes **glucose absorption**.⁶⁰ It apparently does so by shifting the glucose uptake to more distal regions of the small intestine.⁶⁰ It also seems to inhibit amylase, the enzyme that breaks down starch into sugar.⁶¹

What makes *chlorogenic acids* in **green coffee extract** particularly unique is that they inhibit glucose-6-phosphatase, an enzyme that promotes glucose synthesis and release in the liver (gluconeogenesis).^{46,47} This lowers blood sugar levels and helps promote weight loss.

Chlorogenic acid has been shown to specifically reduce **after-meal** glucose peaks associated with carbohydrate ingestion.⁶² This lowers insulin activity and reduces fat accumulation^{63,64}—both associated with favorable body mass changes.

Additional research has confirmed that compounds in coffee decrease adipose (fat) tissue.⁶⁴

Together, these **glucose-lowering** and **anti-adipose** mechanisms make **green coffee extracts** an exciting natural way to help combat unwanted body fat.

Preliminary Findings on Green Coffee Extract

A human study showed that daily consumption of coffee rich in the compounds that are found abundantly in **green coffee beans** resulted in a **lower calorie intake**—which caused reduced weight and body fat.⁶⁵

In a 12-week, placebo-controlled study, scientists tested the efficacy of **green coffee bean extract**. Thirty overweight or obese human volunteers took either the extract or a placebo, dissolved in instant coffee. The extract produced an average **11**



pound weight loss. This was paralleled by a **decrease in glucose absorption** and an increase in **glucose utilization**. The researchers reported that the lower availability of glucose that results from these effects would cause the body to increase the metabolism of fat reserves, which would eventually **decrease body fat** and mass.⁶⁶

A 2011 analysis of published and unpublished clinical human studies on **green coffee bean extract** concluded that there was an overall significant **decrease** in body weight. However, the scientists concluded that **further rigorous research** was needed to conclusively establish the weight-loss efficacy of the extract.⁶⁷

Dynamic Weight Loss Results

To determine conclusively whether **green coffee bean extract** has an **anti-obesity** benefit, scientists set up a randomized, double-blind, placebo-controlled, linear dose, crossover study on humans.¹

In a crossover study, participants are cycled through different phases of treatment and placebo. In this case, subjects took a high dose of **green coffee bean extract** for 6 weeks, a lower dose of **green coffee bean extract** for 6 weeks, and a placebo for 6 weeks in a randomized, double-blind manner. Between phases, there was a 2-week “washout” period, making the entire study 22 weeks long.¹

Crossover studies are considered sound, because each person in the test group serves as his or her own control. This improves the chances of getting an accurate result, because it eliminates the possibility of the outcome reflecting a difference between the active and control groups. To ensure the



findings were more representative, the investigation enlisted both men and women.

Participants were restricted to those who were classified as **obese** or **pre-obese**, because people who have these conditions are subject to obesity’s *metabolic effects* and find weight loss difficult to achieve.

To further ensure that any effect on weight, body fat or BMI could be solely attributed to the extract, there were **no significant changes in dietary calories** or in the dietary percentages of carbohydrates, fat, and proteins at any time during the study. There were also **no significant changes in exercise**. The daily **350 mg** capsules of **green coffee bean extract** were the only intervention, although in a non-study situation, people seeking weight reduction would ideally combine **green coffee bean extract** with lower calorie consumption and greater physical activity to promote maximum weight loss.

During the high-dose phase, subjects took **350 mg** of extract, **three times daily**. The lower dose phase included **350 mg** of extract, taken **twice daily**.¹ The placebo phase involved a **350 mg** dose **three times daily** of an inert capsule containing an inactive substance.¹

The **striking results** were published in **January 2012**.¹

Over the 22-week trial, investigators found that all subjects experienced a reduction in body weight, BMI, and body fat during both the high-dose and low-dose phases of the study, but not in the placebo phase!

After **12 weeks** of administering **350 mg** green coffee bean extract three times a day the scientists found that:¹

- **Weight** decreased by over **17.6 pounds** on average—with some subjects losing more than **22.7 pounds!**
- **BMI** decreased by an average of **2.92!**

- **Body fat** percentage decreased by an average of **4.44%**, with some subjects dropping their body fat percentage by **6.44%**!
- **Heart rate** decreased by a significant average of **2.56 beats per minute!**

The substantial anti-obesity impact was clearly reflected in the finding that a remarkable **37%** of participants who were assessed as having **pre-obesity** (25-30 BMI) at the start of the study had their condition **reversed** to the **normal-weight range!**¹

A study follow-up showed that, contrasting with food-restriction diets, a surprising **87.5%** of the test subjects were able to **maintain** their weight loss after completing the study.¹ No side effects were observed.

This and other studies demonstrate the importance of “*preparing your body to eat*” by taking **green coffee bean extract** before each meal. The dual effects of reducing *after-meal glucose* and inducing meaningful **weight loss** make it a supplement that virtually every aging person should take before eating.

Novel Approach to Reverse Fat Accumulation

Reversing obesity requires attacking it on several fronts, including exercise, diet, and novel interventions such as aggressively lowering glucose and **insulin** blood levels.

The good news is that scientists have confirmed that **green coffee bean extract** can inhibit certain obesity-inducing processes. Coffee compounds can reduce body fat,^{64,66,72} improve lipid profiles,⁷³⁻⁷⁵ reduce blood glucose,^{73,76} and can decrease the absorption of calories!^{46,66}

There are many **diet plans** that people are involved with right now. By taking **350 mg of green coffee bean extract** before each meal, the fat loss effects may be augmented.¹

In the study showing **weight loss of 17.6 pounds after 12 weeks**, the human subjects were not told to make any significant changes in calorie composition, calorie intake, or exercise habits!¹ It is important to understand, however, that people who take the time to participate in weight loss studies want to see results, and may instinctively cut some

calories and become more active even when they are told not to.

To optimize this natural approach, overweight and obese individuals should take **green coffee bean extract** and other nutrients like **chromium** and **green tea extract** before each meal.

Save Money While Supporting Research

Every time you purchase a Life Extension® product, you contribute to research aimed at extending healthy human life span. **Life Extension** continues to fund a record number of scientific projects, while battling incompetent bureaucrats who seek to suffocate medical innovation.

An article in this issue by Dr. Mike West describes how **\$2 million** of funding from the **Life Extension Foundation®** has accelerated a program by which engineered stem cells may someday **reverse** degenerative aging processes.

During our 24th annual winter **Super Sale**, all **Life Extension** formulas are **discounted** so that members can obtain up-to-date versions at the **lowest prices of the year**.

Until January 31, 2013, members take advantage of **Super Sale** discounts to stock up on cutting-edge formulas designed to circumvent the underlying mechanisms of aging...including deadly **surplus storage of fat pounds**.

For longer life,



William Faloon



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Remarkable Weight Reduction with **CoffeeGenic™** Green Coffee Bean Extract (GCA™)

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

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

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

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

How CoffeeGenic™ Works

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

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

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

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

New Comprehensive Formula

The standardized green coffee extract in the new **CoffeeGenic™ Weight Management™** formula has been enhanced with the following nutrients to reinforce the ability to support weight-loss:

1. Green Tea Decaffeinated Extract

Green tea contains health-promoting *polyphenols*, including **epigallocatechin-3-gallate (EGCG)**.⁷ A number of studies suggest it helps support healthy metabolic rate and weight loss.⁸⁻¹³

2. Iodine

This trace element is involved in the production of **thyroid** hormones that regulate the basal metabolic rate—which affects the body's rate of calorie burn.¹⁴

3. Chromium

Chromium plays an important role in glucose utilization and is required for the release of energy from glucose. It is now generally recognized as helping maintain healthy blood sugar levels for those already in the normal range.¹⁵⁻¹⁷

4. Integra-Lean® African Mango IGOB-131®

Fat cells secrete **leptin**, a hormone that signals our brain that we've eaten enough.¹⁸ But some individuals have become resistant to *leptin*, resulting in added pounds. An extract from an African mango called *Irvingia gabonensis* has been shown to support *leptin* sensitivity—followed by weight loss and a slimming of the waistline.^{19,20} African mango also helps the body control the rate of carbohydrate absorption from the intestines, and therefore, the caloric impact of starchy and sugary foods. And this extract supports healthy levels of adiponectin, a hormone that regulates metabolism of lipids and glucose. Research indicates it has the ability to promote weight loss.²⁰

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

Based on the latest research, **CoffeeGenic™ Weight Management™ with Green Coffee Extract** provides in each capsule:

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

The suggested dose is just one capsule before each meal.

A bottle of **90 vegetarian capsules of CoffeeGenic™ Weight Management™ with Green Coffee Extract (GCA™)** retails for \$48. If a member buys four bottles during **Super Sale**, the price is reduced to **\$28.35 per bottle**.

Caution: This product may lower blood glucose; consult your healthcare provider before taking this product if you are taking blood glucose-lowering medication.

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

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

IGOB-131® proprietary extract is a registered trademark of Gateway Health Alliances, Inc.

CoffeeGenic™ contains GCA™ which is a registered trademark of Applied Food Sciences, Inc.

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Item # 01707

BONE RESTORE

NOW WITH VITAMIN K2

and highly absorbable
Magnesium Citrate!



Item #01711

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

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

Bone Restore contains **magnesium citrate**, which is one of the most absorbable forms of magnesium.

The retail price for 150 capsules of **Bone Restore** is \$26.

If a member buys four bottles during **Super Sale**, the price is reduced to **\$15.53** per bottle. (Item# 01711)

The same **Bone Restore** formula without vitamin K2 (MK-7) is available as well. The retail price for 150 capsules is \$22.50. If a member buys four bottles during **Super Sale**, the price is reduced to **\$13.16** per bottle. (Item# 01611)

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

Just five capsules of Bone Restore provide:

Highly Absorbable Calcium (as DimaCal® dicalcium malate, TRAACS® calcium glycinate chelate, calcium fructoborate)	1,200 mg
Vitamin D3	1,000 IU
Vitamin K2 (as menaquinone-7)	200 mcg
Magnesium (as magnesium citrate)	100 mg
Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®)	3 mg
Zinc (as TRAACS® zinc glycinate chelate)	2 mg
Manganese	1 mg
Silicon	5 mg

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

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

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

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.



IN THE NEWS

Higher CoQ10 and B6 Levels Linked to Reduced Coronary Artery Disease Risk

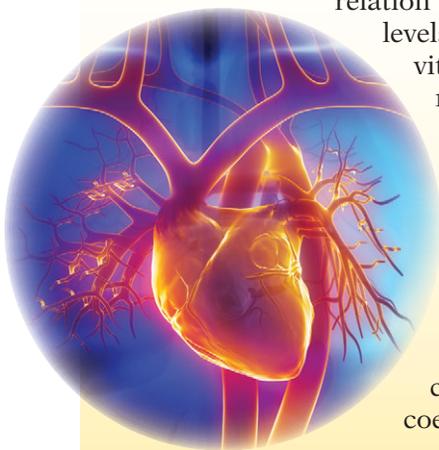
A recent study performed by scientists at the School of Nutrition, Chung Shan Medical University, Taichung, Taiwan, investigated the relationship between plasma levels of coenzyme Q10 and vitamin B6 and the risk of coronary artery disease.*

The study was comprised of a control group of healthy people with normal blood biochemistry and a case group comprised of patients with at least **50%** stenosis of one major coronary artery identified by cardiac catheterization.

The scientists discovered that there was a correlation between higher plasma levels of coenzyme Q10 and vitamin B6 and a reduced risk of coronary artery disease. Further study is needed to examine the benefits of administering coenzyme Q10 in combination with vitamin B6 to coronary artery disease patients, especially those with low coenzyme Q10 levels.

—M. Richmond

* Available at: <http://www.ncbi.nlm.nih.gov/pubmed/23146771>. Accessed November 30, 2012.



One Soda a Day May Raise Prostate Cancer Risk

In a recent study published in the *American Journal of Clinical Nutrition*, Swedish scientists investigated the association between sugar-sweetened beverage consumption and prostate cancer in 8,128 men during a 15-year time span.*

In an interview with the *Agence France-Press*, Isabel Drake, a PhD student at Lund University said, “Among the men who drank a lot of soft drinks or other drinks with added sugar, we saw an increased risk of prostate cancer of around **40%**.”

Those who ate a diet heavy on rice and pasta increased their risk of getting milder forms of prostate cancer, which often required no treatment, by **31%**, while a high intake of sugary breakfast cereals raised the incidence of milder forms of the cancer to **38%**, Drake told *AFP*.

In an editorial for the *American Journal of Clinical Nutrition* about the study, author Dagfinn Aune concludes that, taken together, these studies add to a growing body of observational evidence that soft drink consumption is related to a variety of health concerns, but further prospective studies are needed to assess the real risks that may or may not be involved.

Editor’s Note: This study helps corroborate the danger of consuming beverages and foods that spike blood glucose levels.

—M. Richmond

* Available at: <http://ajcn.nutrition.org/site/misc/release1.xhtml#esha>. Accessed November 29, 2012.



Insufficient Vitamin D Levels Associated with Knee Arthritis Pain

Findings reported in *Arthritis & Rheumatism* suggest a protective effect for increased vitamin D levels against knee osteoarthritis pain, which is greater in African Americans compared to those of European ancestry.* African Americans have, on average, lower vitamin D levels compared to Caucasians, which may help explain some of the health disparities observed between these populations.

Forty-five African Americans and 49 Caucasians with osteoarthritis of the knee completed questionnaires concerning knee symptoms and underwent tests of heat and pain sensitivity. Blood samples were analyzed for serum 25-hydroxyvitamin D levels.

African American participants reported more pain in comparison with Caucasian subjects. While half of the Caucasian participants had vitamin D levels that were lower than **30 ng/mL**, these insufficient levels occurred in **84%** of the African Americans. Average Caucasian vitamin D levels were **28.2 ng/mL**, in contrast with **19.9 ng/mL** among African Americans.

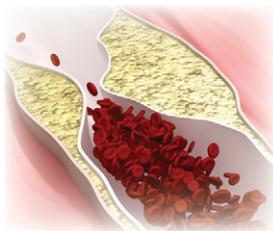
Editor's Note: "Chronic pain is a disease," explained lead author Toni L. Glover, MSN, ARNP and her associates. "The triage theory, proposed by Ames, hypothesizes long-term micronutrient deficiencies trigger chronic inflammation. In turn, chronic inflammation leads to chronic health conditions, many of which are characterized by pain as a disabling symptom. Recent research by Lee et al. supports the hypothesis that the etiology of osteoarthritis includes a systemic inflammatory component."

—D. Dye

* *Arthritis & Rheumatism*. 2012 Nov 7.

Study Finds No Association Between Calcium Intake and Arterial Calcification

Research described in a report published in the *American Journal of Clinical Nutrition* failed to establish a relationship between greater calcium intake and increased calcification of the coronary artery, a condition that characterizes heart disease.* The finding contradicts the conclusions of a recent study which suggested that calcium supplements might increase heart attack risk.



Researchers analyzed data from 588 men and 690 women enrolled in the Framingham Offspring Study, which includes children of participants in the Framingham Heart Study. Responses to questionnaires completed between 1998 and 2001 were analyzed for calcium intake from food and supplements. Computed tomography scans conducted between 2002 and 2005 evaluated coronary artery calcification, an indication of calcified plaque in the heart's arteries.

Adjusted analysis of the data failed to find a significant association between total calcium intake and coronary artery calcium. Similar findings were obtained in separate analyses of calcium supplements and calcium from food.

Editor's Note: The authors note that the Institute of Medicine recently concluded that evidence from clinical trials currently does not support an effect of calcium intake on cardiovascular disease risk.

—D. Dye

* *Am J Clin Nutr*. 2012 Nov 7.

N-Acetylcysteine Could Make Lung Cancer Screening Safer

The results of a study reported in *Carcinogenesis* suggest that administration of the antioxidant N-acetylcysteine (NAC) could help protect men and women at risk of lung cancer from the cancer-promoting effects of computed tomography (CT) screening.*

Researchers at Wake Forest School of Medicine treated male and female mice with a carcinogen found in tobacco smoke and exposed them to varying doses of either whole body CT radiation or no radiation weekly for four weeks. A separate group of female mice was given a diet enhanced with N-acetylcysteine beginning three days before irradiation, and continuing for the four-week radiation treatment period. Some females that did not undergo radiation also received a diet enhanced with NAC.

Eight months following the final radiation treatment, the mice were examined for lung tumors. Treatment with NAC resulted in an amount of tumor formation in irradiated mice comparable to that of animals that were not irradiated.

Editor's Note: Annual CT screening of heavy current and former smokers who are at high risk of developing lung cancer was found to reduce lung cancer mortality by **20%** in comparison with screening with chest X-rays in a recent trial. However, a concern has been raised regarding the risks associated with the relatively high amount of radiation delivered by CT scans, which could induce cancer in normal cells or promote the growth of precancerous cells.

—D. Dye

* *Carcinogenesis*. 2012 Oct 26.



Arthritis Supplement Use Associated with Decreased Marker of Inflammation

An article published in the *American Journal of Epidemiology* reports an association between supplementation with glucosamine, chondroitin or fish oil and a reduction in serum C-reactive protein (CRP), a marker of inflammation.* These supplements are regularly used by people with arthritis, a disease characterized by inflammation and joint degeneration.

Researchers at Fred Hutchinson Cancer Center analyzed data from 9,947 men and women who participated in the National Health and Nutrition Examination Survey (NHANES). Subject interviews provided information concerning health behaviors and diet, including the type and frequency of dietary supplements.

Increased dietary fiber was associated with lower CRP. Participants who reported regular use of glucosamine had CRP levels that were **17%** less on average in comparison with those who didn't use glucosamine. For chondroitin users, the reduction in CRP averaged **22%** and for fish oil users, CRP levels averaged **16%** lower.

Editor's Note: Fish oil contains omega-3 fatty acids that reduce inflammation via inhibition of nuclear factor kappa beta (NF-kB), as well as by inhibition of pro-inflammatory omega-6 polyunsaturated fatty acids by displacement of omega-6 stores in cell membranes.

—D. Dye

* *Am J Epidemiol.* 2012 Nov 8.

Diabetes Rates Skyrocket in Southern US

According to a recent report by the Centers for Disease Control and Prevention, between 1995 and 2010 there has been a staggering **82%** increase in the rate of diabetes diagnosis among US adults. Diagnosed cases of diabetes increased by at least **50%** in 42 US states, of these, 18 experienced increases of **100%** or more. The trend is particularly alarming in Southern US states like Oklahoma, where a **226%** increase was reported, Kentucky, where rates increased **158%**, Georgia, increased **145%**, and Alabama up **140%**. Appalachian states such as West Virginia also saw an astounding **131%** increase.*

CDC scientists speculate that the reason for the increase in people diagnosed with diabetes is due to more people developing the condition. However, the study states that there were fewer deaths due to diabetes indicating that improvements in diabetes treatment may mean that more people are living longer with the disease. According to the Director of the CDC's Division of Diabetes Translation, "These rates will continue to increase until effective interventions and policies are implemented to prevent both diabetes and obesity."

—A. Pryce

* Available at: <http://www.cdc.gov/mmwr/pdf/wk/mm6145.pdf>. Accessed November 19, 2012.



Compound in Grapes, Red Wine Could be Key to Fighting Prostate Cancer

Resveratrol, a compound found commonly in grape skins and red wine, has been shown to have several beneficial effects on human health, including cardiovascular health and stroke prevention. A University of Missouri researcher has discovered that the compound can make prostate tumor cells more susceptible to radiation treatment, increasing the chances of a full recovery from all types of prostate cancer, including aggressive tumors.*

Prostate tumor cells contain very low levels of two proteins, *perforin* and *granzyme B*, which can function together to kill cells. However, both proteins need to be highly "expressed" to kill tumor cells. In the study, Michael Nicholl, an assistant professor of surgical oncology in the MU School of Medicine said that when he introduced resveratrol into the prostate tumor cells, the activity of the two proteins increased greatly. Following radiation treatment, Nicholl found that up to **97%** of the tumor cells died, which is a much higher percentage than treatment with radiation alone.

If additional studies, including animal studies, are successful within the next few years, MU officials will request authority from the federal government to begin human drug development. After this status has been granted, researchers may conduct human clinical trials with the hope of developing new treatments for cancer.

—M. Richmond

* Available at: <http://munews.missouri.edu/news-releases/2012/1108-compound-in-grapes-red-wine-could-be-key-to-fighting-prostate-cancer/>. Accessed November 26, 2012.

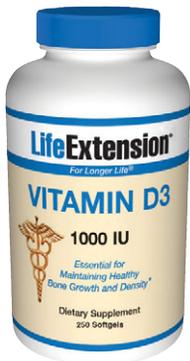
D₃

New Vitamin D3 Softgels For Superior Absorption

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

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

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

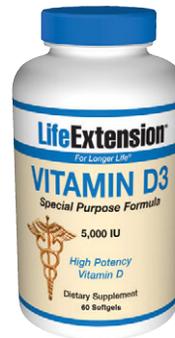


Vitamin D3 1,000 IU 250 softgels

Retail: \$12.50
**Four-bottle during Super Sale
Member Price: \$7.59 ea.**

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

Item # 01751

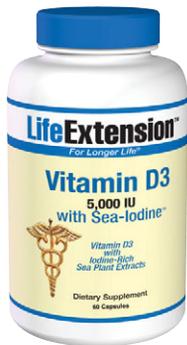


Vitamin D3 5,000 IU 60 softgels

Retail: \$11
**Four-bottle during Super Sale
Member Price: \$6.68 ea.**

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

Item # 01713



Vitamin D3 5,000 IU with Sea-Iodine™* 60 capsules (non-softgel)

Retail: \$14
**Four-bottle during Super Sale
Member Price: \$8.44 ea.**

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

Item # 01573



Vitamin D3 7,000 IU 60 softgels

Retail: \$14
**Four-bottle during Super Sale
Member Price: \$8.51 ea.**

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

Item # 01718

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.



Vitamin D3 Liquid Emulsion 2,000 IU 1 ounce

Retail: \$28
**Four-bottle during Super Sale
Member Price: \$16.88 ea.**

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

Item # 00864

Advanced RESVERATROL Formula

In 2003, the **Life Extension Foundation**® introduced a standardized **resveratrol** extract shown to favorably alter genes implicated in the aging process—many of the same genes that respond to **calorie restriction**.

Since then, we have identified additional compounds that simulate calorie restriction's ability to trigger youthful **gene expression**—the process by which genes transmit signals that slow certain aspects of aging.

Compelling evidence reveals that certain compounds found in berries, such as **pterostilbene** and **fisetin**, possess potent “longevity gene” activators that work in synergy with **resveratrol**. For example, **fisetin** (found in strawberries) has been shown to **stabilize** resveratrol in the body by shielding it from metabolic breakdown,¹⁻¹⁰ thus extending its beneficial effects.

High-Potency Resveratrol with Synergistic Activators

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

A bottle containing 60 vegetarian capsules of **Optimized Resveratrol with Synergistic Grape-Berry Actives** retails for \$46. If a member buys four bottles during **Super Sale**, the price is reduced to **\$27.90** per bottle. The suggested dose of one capsule a day provides:

Trans-Resveratrol	250 mg
Grape-Berry Actives	85 mg
Quercetin	60 mg
Trans-Pterostilbene	0.5 mg
Fisetin	10 mg

Item # 01430



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

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To order Optimized Resveratrol with Synergistic
Grape-Berry Actives, call 1-800-544-4440
or visit www.LifeExtension.com

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

Preserve Youthful Cellular ENERGY

with Next-Generation LIPOIC ACID

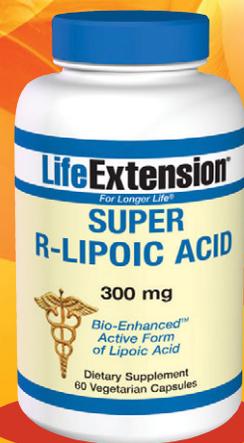
Published studies have shown the critical importance of **lipoic acid** in supporting healthy mitochondrial function.

Unlike other forms of lipoic acid, **SUPER R-Lipoic Acid** is more bioavailable, stable, and potent, achieving 10-30 times higher peak blood levels than pure R-lipoic acid.¹ This unique **sodium-R-lipoate** can help you reach peak plasma concentrations within just 10-20 minutes² of supplementation.

Super R-Lipoic Acid provides more of the active "R" form of lipoic acid than any other supplement.

CAUTION: Because this product may lower blood glucose, consult your healthcare provider before taking this product if you are taking glucose lowering medication.

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



Item # 01208

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

A bottle of **Super R-Lipoic Acid** containing 60 vegetarian capsules retails for \$49. If a member buys four bottles during **Super Sale**, the cost is only **\$30.38** per bottle. Each capsule contains **300 mg** of stabilized, Bio-Enhanced® **Super R-lipoic acid** supplying **240 mg** of **R-lipoic acid**. Suggested dose is one capsule daily.

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

High Potency **FAT-SOLUBLE** NUTRIENTS in ONE Softgel

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

Just one **SUPER BOOSTER** provides:

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

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

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



Item # 01680

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

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

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

JUST ONE SOFTGEL OF SUPER BOOSTER SUPPLIES:

Vitamin K2 (as menaquinone-7)	200 mcg	Gamma Tocopherol	215.4-244.12 mg
Vitamin K2 (as menaquinone-4)	1000 mcg	Lycopene	10 mg
Vitamin K1 (as phytonadione)	1000 mcg	Lutein	2 mg
Ginkgo extract	120 mg	Vitamin B12	300 mcg
Sesame lignans	20 mg	Vitamin C	95 mg
Chlorophyllin	100 mg		

A bottle of 60 **Super Booster** softgels retails for \$42. If a member buys four bottles during **Super Sale**, the price is reduced to **\$25.65** per bottle.

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

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

Contains soybeans.

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

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

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

BY RICHARD MAYER

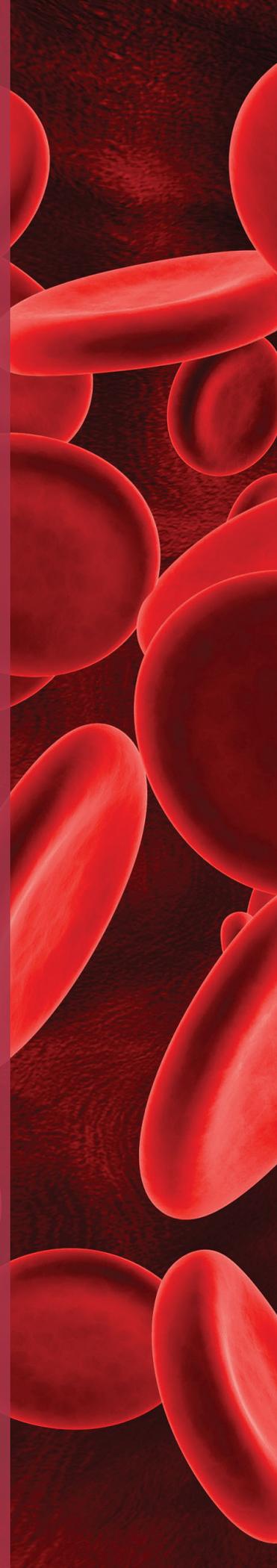
BREAKTHROUGH in Protecting Arteries Against *After-Meal* Glucose Spikes

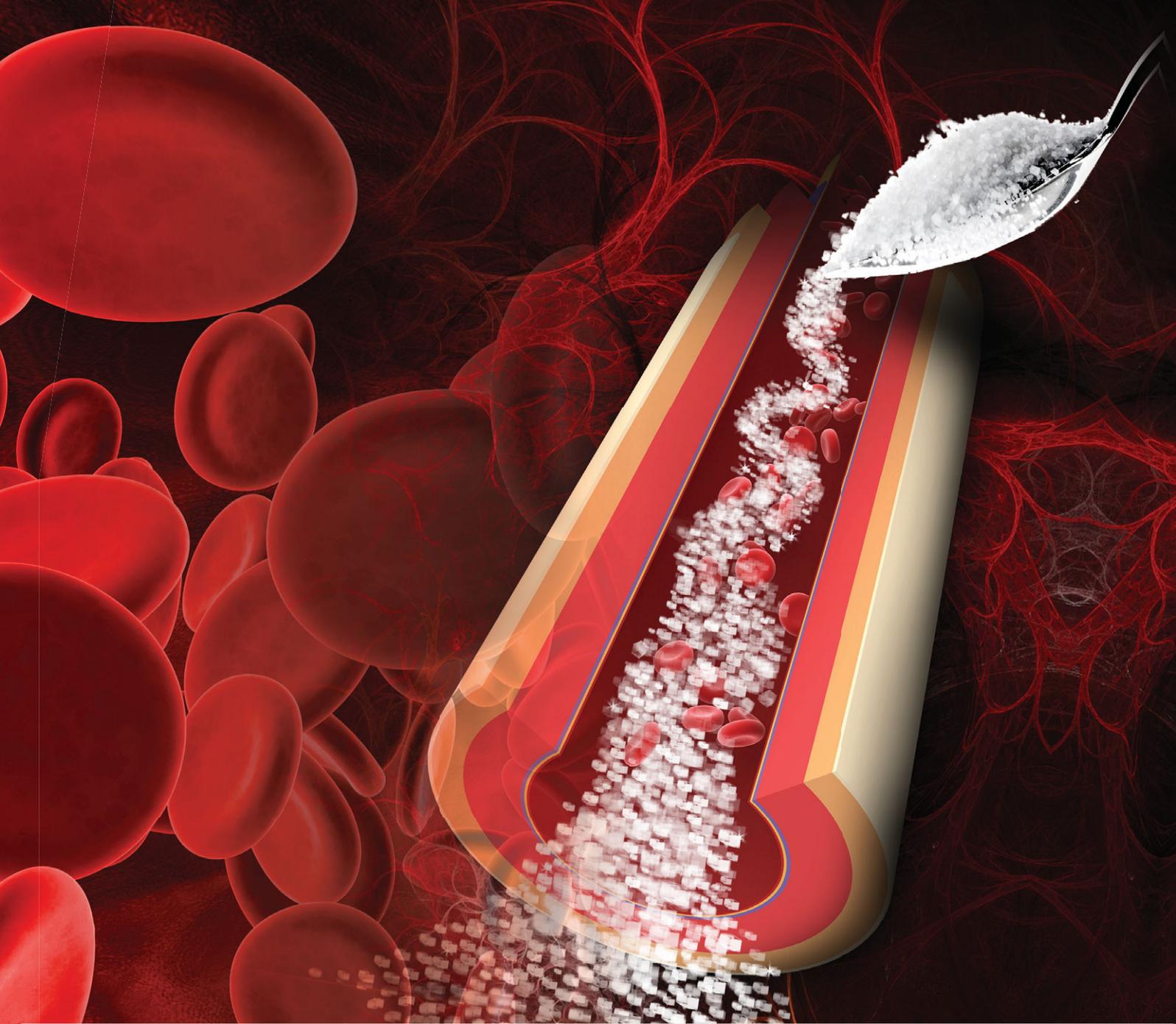
Did you know that your risk of suffering from cardiovascular death is the greatest in the **two-hour time period** after you eat a meal? That's partly because during that time, you can experience dangerous **blood sugar spikes** that **acutely** impair blood flow through vital arteries, ultimately leading to a heart attack or stroke.

And while you may not entirely eliminate these **after-meal** blood sugar surges, you can build up your body's defenses against those spikes to protect your cardiovascular system.

In a study that may represent a breakthrough in the **prevention of heart attack**, the proper intake of **gamma tocopherol** was shown to limit the artery damaging impact of an **after-meal** glucose burst.

This human study, published in **July 2012**, showed an expected **30-44%** decrease in **endothelial function** (as measured by arterial blood flow) in men after consuming 2.5 ounces of pure **glucose**. Men who took **gamma tocopherol** five days before the **glucose** challenge, however, showed no significant loss of **endothelial function**.¹





This well-designed study showed how ***gamma tocopherol***, functioning via several proven pathways, prepared the arterial endothelium to cope with the attack of ***after-meal glucose***.

Foundation members have supplemented with ***gamma tocopherol*** since as early as **1996**. This article describes the ways ***gamma tocopherol*** builds strong countermeasures into blood vessels, preparing them to survive and thrive even after a spike in blood sugar.² >

After-Meal Blood Sugar Spikes Increase Heart Attack Risk

When your heart muscle calls for more blood to sustain a strong pumping action, it needs it *now*. Under normal circumstances, the coronary arteries—those vessels that provide blood to the heart muscle—respond by dilating and increasing blood flow accordingly. When that response fails, heart muscle cells can begin to die within minutes.³

The *after-meal* blood sugar surge directly impairs your arteries' ability to respond to that immediate demand for increased blood flow.^{4,5} That's one of the reasons why diabetics have such a high rate of heart attacks and other cardiovascular disorders.⁶

But even if you don't have diabetes, a "normal" **fasting** blood sugar measurement does not protect you against the harmful effects of the *after-meal* spike in blood glucose.^{4,5,7,8} Studies show that the risk of cardiovascular death increases in the two-hour time period after you eat a meal, when blood sugar exceeds just **90 mg/dL**—a number well below the definition of diabetes.⁹

People who have normal fasting glucose but who fail a glucose tolerance test (blood sugar measured 2 hours after a test "meal" of glucose) are said to have "impaired glucose tolerance." Their risk for cardiovascular disease raises sharply, the direct consequence of their arteries' inability to dilate appropriately.^{3,9,10}

In fact, many studies now show that the 2-hour glucose tolerance test is a more telling predictor of heart attacks than the much-touted fasting glucose test.¹¹

How After-Meal Blood Sugar Impacts Your Cardiovascular Risk

Your risk for heart attacks, strokes, and other forms of cardiovascular disease rises dramatically when your after-meal glucose spikes.

One study showed that people who have elevated after-meal glucose levels have a **40%** higher risk for cardiovascular disease in general, and a **56%** greater risk for coronary artery disease, compared with normal levels.⁷

Another study found that men with the highest after-lunch blood sugar levels were more than **twice as likely** to have a "cardiovascular event" compared with those who had the lowest levels. In women that figure rose to an ominous **4.5-fold** increase.¹¹

In a study of non-diabetic people with metabolic syndrome, each increase in after-meal blood sugar of **18 mg/dL** raised the risk of cardiovascular death by **26%**.¹²

How does the after-meal burst of glucose cause such devastation?

Glucose has a powerful **oxidizing** effect on the arterial lining (the endothelium) that governs blood flow through the arteries.^{4,13} Oxidation products interfere with the production and bioavailability of **nitric oxide**, the signaling molecule that triggers arteries to dilate or constrict in response to changes in demand for blood flow.¹⁴⁻¹⁸

Worse, oxidation speeds the destruction of existing nitric oxide molecules, further impairing the endothelium's ability to regulate blood flow in major arteries, including the coronaries.¹⁹



Together, these effects mean that a surge in blood sugar rapidly impairs your arteries' ability to respond to your heart muscle's immediate needs for more blood flow.¹⁴ To make matters worse, glucose surges raise levels of "adhesion molecules" that make both arteries and platelets "*stickier*," increasing the risk of a fatal clot in a coronary artery.²⁰

The stakes couldn't be higher: Failure to protect your arteries from glucose spikes will starve your heart of blood flow, resulting, at best in an attack of angina, and at worst in a fatal heart attack.

You can't completely avoid the spike in glucose that occurs after you eat. However, you *can* prepare your endothelial cells to cope with the after-meal surges in blood sugar with gamma tocopherol.

Unique Property of Gamma Tocopherol

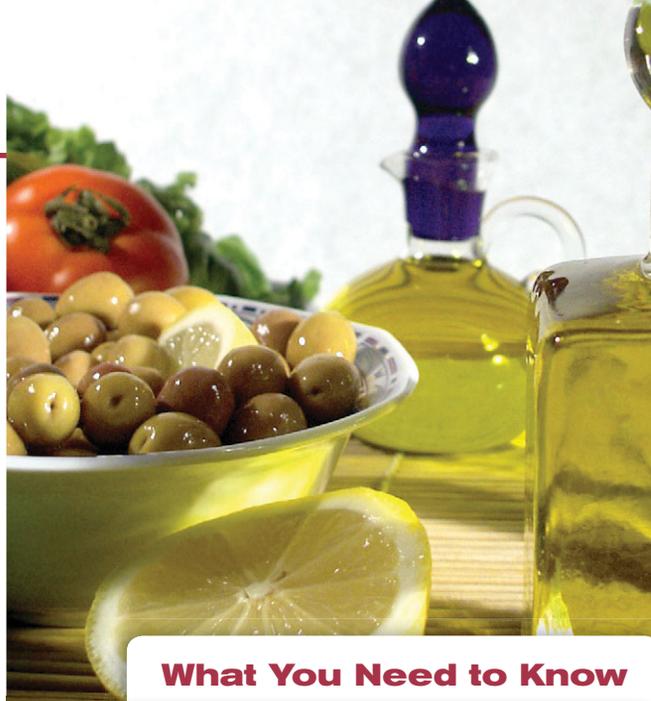
Alpha tocopherol is the form of vitamin E used most commonly in commercial supplements. However, studies indicate that it's the **gamma tocopherol** form of vitamin E that is more ideally suited for protecting your heart from after-meal glucose surges.

Studies show that levels of *gamma tocopherol* are a better predictor of lower heart attack risk than *alpha tocopherol*.²¹⁻²⁵ Gamma tocopherol is a superior antioxidant that traps reactive oxygen species, reactive nitrogen species, and other dangerous molecules triggered by the after-meal glucose burst.^{21,22,26,27} If these dangerous molecules go unopposed, they attack fats in your artery linings, depressing nitric oxide levels and promoting atherosclerosis.^{28,29}

Gamma tocopherol also provides anti-inflammatory effects that fight atherosclerosis induced by elevated after-meal glucose spikes.^{27,28,30-33} Gamma tocopherol is converted in your body to **gamma-CEHC**, a metabolite that helps shed excessive sodium; that's a potential benefit for those whose mealtime sodium intake is higher than desirable.^{21,22,26}

Finally, compared with alpha tocopherol, *gamma tocopherol* appears to be more readily absorbed into **endothelial cells**, where it can exert its antioxidant effects to protect endothelial health.³⁴

Unfortunately, studies show that high intakes of alpha tocopherol *suppress* blood and tissue levels of the more important gamma tocopherol. This finding explains some of the apparently contradictory findings in studies done on vitamin E supplementation (see the **SIDEBAR** on the next page for other factors).^{21,35,36}



What You Need to Know

Fortify Your Arteries Against Damage Caused by Post-Meal Glucose Surges

- The burst of glucose release that follows an hour or two after a meal is one of the most deadly risk factors for heart attacks.^{11,12}
- The oxidative effect of after-meal glucose spikes impairs your arteries' ability to deliver blood flow to meet demand.^{4,5,14}
- That impairment is itself the result of reduced availability of nitric oxide, your body's arterial signaling mechanism.¹⁴⁻¹⁸
- Gamma tocopherol, a member of the vitamin E family, directly counteracts oxidant damage to nitric oxide signaling between endothelial (artery lining) cells and arterial muscles that control blood flow.¹⁴
- Human studies now demonstrate that gamma tocopherol supplementation preserves endothelial function, allowing arteries to deliver their blood flow unimpaired, even following a glucose-rich meal.^{1,2}
- Gamma tocopherol supplements are an essential part of your campaign to prepare your body before a meal for the inevitable blood sugar spike that follows it.¹

Gamma Tocopherol: Resolving a Scientific Paradox

Vitamin E has long posed a paradox to scientists.

Large epidemiological studies repeatedly show that a high intake of vitamin E-rich foods is protective against heart disease, but studies using **vitamin E** (alpha tocopherol) supplements have sometimes failed to show a protective effect.³²

Studies of **gamma tocopherol** suggest a resolution to that paradox.

Gamma tocopherol is the major form of vitamin E in natural foods; it has antioxidant, anti-inflammatory, and sodium-excreting properties.^{21,22,31} That explains the positive results in studies of natural vitamin E intake from food.

But alpha tocopherol is the vitamin E form used in virtually all previous supplementation studies. Its spectrum of effects is narrower and weaker than gamma tocopherol, explaining the failure of those studies to show benefit.^{26,32,38} Compounding the problem, alpha tocopherol lowers gamma tocopherol levels in blood and tissues, further reducing any potential benefit of alpha tocopherol supplementation.^{21,32,36}

These studies were simply done with **the wrong form of vitamin E!**

With the vitamin E paradox resolved, we can expect to see even greater benefits from supplementation with gamma tocopherol, one of the more potent forms of the vitamin.³²

Taken together, these factors led researchers at the University of Connecticut to explore the effects of gamma tocopherol on preventing the decline in endothelial function that accompanies the **after-meal** sugar spike. Let's now examine their findings.

Gamma Tocopherol Protects Against Blood Sugar Surges

In the year 2000, a study was published demonstrating that:

1. After-meal blood sugar spikes in non-diabetic patients cause an immediate decline in endothelial function, and
2. A combination of antioxidant vitamins could *reverse* that decline.⁸

This information remained dormant for more than a decade—until researchers in Connecticut and Korea rediscovered and amplified the findings.

These scientists had already discovered that an after-meal glucose surge raised the levels of **methyl-glyoxal**, a destructive byproduct of glucose metabolism that's increased by oxidant stress.²

Suspecting that a powerful antioxidant such as **gamma tocopherol** could reduce the production of **methyl-glyoxal** following a glucose challenge, they supplemented 12 healthy young men with **500 mg/day** of **gamma tocopherol**.² As expected, **methyl-glyoxal** levels skyrocketed in the unsupplemented group following the glucose challenge.

Those supplemented with **gamma tocopherol**, on the other hand, had completely eliminated the rise of methyl-glyoxal, while markers of total antioxidant capacity rose substantially.

That study clearly proved that short-term **gamma tocopherol** supplementation could counteract one major oxidative effect of the glucose surge. Armed with this information, the researchers turned their focus to the next major consequence of the glucose surge, namely, impaired endothelial function. They designed a study that would reveal any changes in endothelial function and nitric oxide activity that might result from gamma tocopherol supplementation.¹

The Breakthrough Gamma Tocopherol Study

In this study published in **July 2012**, fifteen young men underwent a baseline ultrasound test to detect how well their arteries would respond to blood flow changes. Blood tests were also performed.

The men then received a 5-day supplement with a mixture containing **500 mg** of **gamma tocopherol**, **60 mg** of alpha tocopherol, and small amounts of beta- and delta tocopherols. The ultrasound blood flow test and blood work were then repeated.¹

Next the subjects received 2.5 ounces of pure glucose, and their endothelial function was monitored by ultrasound regularly for 3 hours.

The findings were remarkable.

Blood levels of **gamma tocopherol** rose **3-fold**. Levels of the active metabolite, **gamma-CEHC**, rose **9-fold**—all without affecting **alpha tocopherol** levels at all.¹

Following the glucose “meal,” endothelial function, as measured by enlargement of blood vessels due to increases in blood flow, declined 30-44% in the unsupplemented state. But with supplementation, **there was no significant loss of endothelial function**.¹

Gamma tocopherol suppressed the *after-meal* increase in fat oxidation products and the *nitric oxide* disruption they caused.

In short, this well-designed study showed that supplementation with **500 mg/day** of gamma tocopherol along with smaller amounts of other forms of vitamin E prepared arterial endothelium to cope with the attack of *after-meal glucose*. Supplementation didn't change the fact of the surge; rather, it provided endothelial cells with the defense mechanisms they needed in order to survive it.

Most Life Extension® members take over **200 mg** a day of *gamma tocopherol*. Considering the many other similar nutrients they take like **pomegranate** and **lycopene**, they may not need to take any additional gamma tocopherol. For those choosing to capitalize on the added benefits of gamma tocopherol, supplementing approximately **12 hours before** glucose consumption is advisable because studies show it takes 12 hours for maximal blood levels of the active metabolite gamma-CEHC to be reached.³⁷

Summary

After you eat a meal—even a healthy meal—your arteries and their delicate endothelial linings are subject to a short but dangerous rise in blood sugar.

That blood sugar surge directly impairs your ability to regulate blood flow, raising your risk for a heart attack or other cardiovascular disaster.¹⁴

You need to defend yourself against that *after-meal* blood sugar escalation, in order to protect your arteries and preserve their ability to deliver blood to your laboring heart muscle.

Gamma tocopherol has now been shown in a human study to block glucose-induced impairment of nitric oxide and to sustain endothelial function following a meal.^{1,2}

Supplementation with gamma tocopherol, therefore, allows you to *prepare your body* for the harmful after effects of a meal.

Since higher gamma tocopherol levels are associated with lower risk of coronary heart disease, *gamma tocopherol* supplementation may reduce your risk, and restore your arteries' natural abilities to manage the effects of deadly *after-meal glucose surges*.² •

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



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Unleash the Power of the Milk Thistle Seed

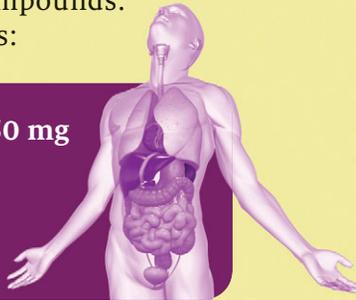


Milk thistle extract has long been thought of as one of nature's most potent weapons to support *human health*, but until recently, the technology hasn't been available to fully harness this plant's potential. Among the compounds waiting to be unlocked are a slew of *nourishing antioxidants* and flavonolignans valued for their role in *ensuring healthy liver function*.^{1*}

Life Extension® has uncovered an advanced extraction technology that has enabled scientists to isolate silymarin constituents and to test their efficacy against various cell lines. Among the compounds tested, silymarin constituents **isosilybin A and B** proved to be the most efficient in maintaining healthy cell division.²

Certified European Milk Thistle is the first milk thistle extract to contain standardized, high potencies of **silymarin, silibinins, and isosilybin A and B**—providing the full spectrum of milk thistle's liver and prostate protective compounds. Each capsule of this advanced formula provides:

Milk Thistle (*Silybum marianum*) Extract (seed) 750 mg
[std. to 80% Silymarin (600 mg),
30% Silibinins (225 mg),
and 8% Isosilybin A and Isosilybin B (60 mg)]



A 60 vegetarian capsule bottle of **Certified European Milk Thistle** retails for \$34. If a member buys four bottles during **Super Sale**, the cost is reduced to only **\$20.25** per bottle—a savings of **nearly one third!**

Compare the price of **Certified European Milk Thistle** to commercial silymarin supplements, and members will see that this new formula is available at one of the lowest costs per milligram—with standardized concentrations of **silibinins** and **isosilybin A and B** not found in other milk thistle extracts!

Reference

1. *Pak J Pharm Sci.* 2008 Jul;21(3):249-54
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Item # 01522

To order **Certified European Milk Thistle**
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.

BIO-COLLAGEN WITH PATENTED UC-II®

CONCENTRATED SUPPORT FOR JOINT COMFORT!

Tender, sensitive joints can limit everyday activities. As you age and continue to put stress on your joints, you can compromise joint cartilage—which exposes **small collagen fibers**.

Your body's immune system mistakenly identifies these collagen fibers as "**foreign cells**." This triggers an inflammatory response against the **collagen-containing** cartilage in *your own* joints. Inflammation and joint discomfort can soon follow.

Data shows that a patented collagen provides targeted support for the immune issues related to joint discomfort.¹

To meet this urgent need, **Life Extension®** now offers **Bio-Collagen with Patented UC-II®**—a novel form of **undenatured** type II collagen from chicken cartilage.

Taken orally, **UC-II®** travels to the intestinal tract where it "introduces" the immune system to the **same** type of collagen molecules found in **joint cartilage**.

ADVANCED MOLECULAR STRUCTURE

Not just *any* form of collagen will do. Normally, when chicken collagen is **processed**, its molecular shape is changed. It loses bioactivity and becomes **denatured**—which researchers found has *no beneficial effect*² on the immune system.

Fortunately, a **unique processing technique preserves the correct molecular shape** of the collagen^{3,4}—*and preserves its bioactivity*⁵—producing a form known as **undenatured collagen**.

The result of this innovative process is an **undenatured chicken collagen** called **Bio-Collagen with Patented UC-II®**.

SCIENTIFICALLY VALIDATED

Scientific studies have found that **UC-II® reduced sensitive joint discomfort** and **eased joint function**.^{1,6-10} One double-blind, placebo-controlled study on patients found that **UC-II® provided relief by 33%**, and **decreased joint discomfort scores by a remarkable 40%—in just 90 days!**¹

CONVENIENT ONE-PER-DAY DOSE

The suggested daily serving of one capsule of **Bio-Collagen with Patented UC-II®** supplies **40 mg** of this proprietary blend.

The retail price of a bottle of 60 capsules of **Bio-Collagen with Patented UC-II®** is \$36. If a member buys four bottles during **Super Sale**, the price is reduced to **\$21.60** per bottle or just **\$12 a month**.

To order Life Extension® Bio-Collagen with Patented UC-II®, call 1-800-544-4440 or visit www.LifeExtension.com



Item # 01631

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UC-II® is a registered trademark of InterHealth Nutraceuticals, Inc. US Patent Nos. 5,645,851, 5,637,321, 5,529,786, 5,750,144, 7,083,829, 7,846,487, EP1435906 81 and worldwide patents pending.

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

ARE YOU TAKING THE OPTIMAL FORMS OF VITAMIN E?

According to the *Proceedings of the National Academy of Sciences*, alpha tocopherol (regular vitamin E) displaces critically important gamma tocopherol in the cells.¹ While **alpha tocopherol** inhibits free-radical production, **gamma tocopherol** is required to trap and neutralize existing free radicals.²

Prestigious scientific journals have highlighted **gamma tocopherol** as one of the most critically important forms of **vitamin E** for those seeking optimal health benefits.

Most commercial vitamin E supplements contain little, if any, **gamma tocopherol**. They instead rely on **alpha tocopherol** as the primary ingredient. However, it is gamma tocopherol (not the alpha form) that quenches **peroxynitrite**, the free radical that plays a major role in the development of **age-related decline**.^{2,3}

SESAME LIGNANS: THE NATURAL VITAMIN E BOOSTER

Life Extension® has uncovered research suggesting that adding **sesame lignans** to gamma tocopherol may significantly enhance its beneficial effects. Sesame and its lignans have been shown to boost antioxidant levels and help maintain already-normal blood pressure.*

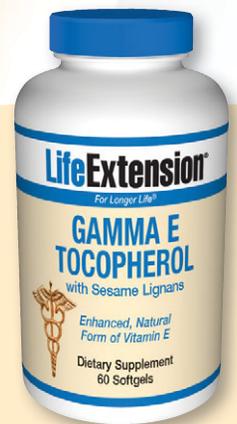
In a human study that combined **gamma tocopherol** with **sesame lignans**, gamma tocopherol/ sesame was **25% more effective** than gamma tocopherol/ tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.^{4,5} Since tocotrienols are considered nature's most potent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

Life Extension fortified the popular **Gamma E Tocopherol** supplement with standardized **sesame lignans** long ago. Consumers thus obtain superior benefits at a much **lower cost**.

WORLD'S MOST COMPREHENSIVE VITAMIN E FORMULA!

The **Gamma E Tocopherol with Sesame Lignans** formula provides potent doses of critically important gamma **vitamin E** along with **sesame lignans** to augment its antioxidant effects. Suggested dose is one softgel daily.

The retail price for 60 softgels of **Gamma E Tocopherol with Sesame Lignans** is \$32. If a member buys four bottles during **Super Sale**, the price is reduced to only **\$19.58 per bottle**.



Item # 00759

Each softgel of Gamma E Tocopherol with Sesame Lignans provides:

Gamma tocopherol	215.4-244.12 mg
Delta tocopherol	89.75-125.65 mg
Alpha tocopherol	30.51-35.9 mg
Beta tocopherol	0-7.18 mg
Sesame seed (<i>Sesamum indicum</i>) lignan extract	20 mg

Contains soybeans.

Antioxidant Vitamins & Cancer. Some scientific evidence suggests that consumption of antioxidant vitamins may reduce the risk of certain forms of cancer. However, the FDA does not endorse this claim because this evidence is limited and not conclusive.

NOTE: Those taking Super Booster do not usually require additional gamma tocopherol.

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

References

1. *J Natl Cancer Inst.* 2000 Dec 20;92(24):1966-7.
2. *Proc Natl Acad Sci USA.* 1997 Apr 1; 94(7):3217-22.
3. *Atherosclerosis.* 1999 May;144(1):117-22.
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5. *Lipids.* 1995 Nov;30(11):1019-28.

To order Gamma E Tocopherol
with Sesame Lignans, call 1-800-544-4440
or visit www.LifeExtension.com

Super Potent Multi-Nutrient Formula

Compare CENTRUM® to TWO-PER-DAY:

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

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

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

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

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

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



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

- 4 times more Vitamin D
- 8 times more Vitamin C
- 2 times more Vitamin E
- 10 times more Biotin
- 20 times more Boron
- 4 times more Selenium
- 25 times more Vitamin B6
- 50 times more Vitamin B1
- 12 times more Vitamin B12
- More than twice as much niacin, zinc, and many other nutrients

A bottle containing 120 tablets of **Two-Per-Day Tablets** retails for \$20. If a member buys four bottles during **Super Sale**, the price is reduced to **\$12.15** per bottle. (Item #01715) A bottle containing 120 capsules of **Two-Per-Day Capsules** retails for \$22. If a member buys four bottles during **Super Sale**, the price is reduced to **\$13.50** per bottle. (Item #01714)

Each bottle of **Two-Per-Day** lasts **60 days**, so members can obtain the benefits of this high-potency formula for as little as **\$6.07 per month** during **Super Sale**.



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

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

To order Life Extension Two-Per-Day Tablets or Two-Per-Day Capsules, 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.

HALF OF AGING HUMANS IN THE DEVELOPED WORLD ARE MAGNESIUM DEFICIENT!¹

YOU MAY BE ONE OF THEM.

Optimal uptake of magnesium may now be obtained in a highly *absorbable* form called **Neuro-Mag™** available in **capsules** or **tasty natural lemon-flavored powder**.

A Critical Brain Booster. . .

Magnesium is needed for more than **300** biochemical reactions in the body.²

Long known for its role in cardiovascular³⁻⁵ and bone health,⁶ researchers are now focusing *intensely* on magnesium's benefits for **cognitive function**.²

It is very *hard* for your body to maintain optimal levels of magnesium in the **brain**.² This is of *special* concern for maturing individuals, as magnesium deficiency increases over time.¹

Absorbs Into the Brain

Most commercially available magnesium supplements are not readily absorbed into the central nervous system.

To overcome this obstacle, an innovative form of magnesium is being introduced called **Neuro-Mag™**, shown to specifically target the aging brain and nervous system.

In pre-clinical models, **magnesium L-threonate** contained in **Neuro-Mag™** boosted magnesium levels in spinal fluid by an impressive **15%** compared to no increase with conventional magnesium.²

Even more compelling, animal models revealed improvements of **18%** for short-term memory and **100%** for long-term memory using the **Neuro-Mag™** form of magnesium.²

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 this supplies a modest **144 mg** of elemental magnesium, its superior **absorption** into the bloodstream and nervous system make it a preferred choice for aging humans to supplement with.

This same brain health-supporting magnesium is also available in a good tasting powder mix called **Neuro-Mag™ Magnesium L-Threonate Powder**. In addition to its appealing natural lemon flavor, the one-scoop per day serving size supplies the same amount of magnesium plus **500 mg** of **calcium** (as calcium lactate gluconate—a highly *soluble* form of calcium) and **1,000 IU** of **vitamin D3**.

A bottle containing 90 vegetarian capsules of **Neuro-Mag™ Magnesium L-Threonate** or **30** scoops of **Neuro-Mag™ Magnesium L-Threonate Powder** retails for \$40. If a member buys four bottles during **Super Sale**, the price is reduced to **\$24.30** per bottle. Contains corn.

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Magtein™ is a trademark of Magceutics, Inc, distributed exclusively by AIDP, Inc. Patent pending.

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



Item # 01603



Item # 01602

BY WILLIAM FALON, LUKE HUBER, ND,
AND KIRA SCHMID, ND

Elevated **Glucose** *Increases* Incidence of **Breast Cancer** and **Brain Shrinkage**

Breast cancer is the disease women fear most.¹

Even though **radiation** emitted from **mammograms** causes some breast cancers, **39 million** women undergo mammography² each year in an attempt to detect tumors at an early, curable stage. The consensus is more lives are saved with mammograms than are killed by the radiation.^{3,4}

In the United States, over **200,000** women are diagnosed with some form of breast cancer each year and around **40,000** die from it.⁵ This means that most victims' lives are spared, but at the cost of surgical mutilation, radiation injury to the chest cavity, systemic damage by chemotherapy, and acute menopause by estrogen-blocking drugs.

With **12%** of all American women destined to develop a breast tumor,⁶ taking preventative steps makes sense, especially if the same approach also slashes risk of **dementia** and **heart attack**...and helps **shed fat pounds**.

An abundance of published research links high-normal **blood glucose** levels to **increased breast cancer risk**.⁷⁻¹¹ This article reviews the evidence and emphasizes the importance of maintaining **glucose** at safe low-normal ranges. >





In response to reports showing higher rates of **breast cancer** amongst **type II diabetics**,¹²⁻¹⁶ Life Extension® researchers conducted an analysis of the scientific literature to ascertain if there was a connection between higher “normal” blood **glucose** and **breast cancer** risk.

We identified **12** separate studies that examined blood glucose levels in relationship to incidence of breast cancer.¹²⁻²³ Out of these **12** studies, **9** showed an association of higher **fasting glucose** or other indicators of poor glycemic control with increased cancer risks.^{7-11,17-19,22}

The take-home message in examining these **12 independent studies** is to initiate steps to lower glucose (which also reduces insulin) in order to help prevent the most prevalent malignancy striking women today.

While **glucose** provides fuel for rapidly dividing cancer cells, **insulin** is a hormonal stimulator for cellular proliferation.^{7,14} The role of elevated blood **glucose** and **insulin** on cancer incidence and progression is being increasingly recognized and was the subject of a recent report on the CBS news magazine show *60 Minutes*.²⁴



Compelling Findings

Life Extension®’s analysis of **12 independent studies** identified strong data suggesting increased **breast cancer risk** amongst women with so-called “normal” blood glucose levels. For example, premenopausal women with a blood sugar above **84 mg/dL** had more than **two-times** the risk of developing breast cancer compared to those with a blood sugar below **84 mg/dL**.⁷

Another study compared women with a fasting glucose under **100 mg/dL** with those whose blood glucose was between **100-125 mg/dL**. Women with the higher glucose readings had a **23%** increased risk of breast cancer after multivariate analysis.⁸

A study of 10,633 women from Italy found significant relationships between blood sugar levels and breast cancer risk.⁹ In this study, women in the highest glucose quartile (median **96 mg/dL**) had a **63%** increased risk for breast cancer compared to those in the lowest quartile (median **73 mg/dL**) after being “fully adjusted” for multiple variables. The authors stated in the discussion:

“...we found that elevated fasting glucose levels were significantly associated with subsequent occurrence of breast cancer. The association was significant both in pre and postmenopausal women.”

Glucose: Our Modern Day Enemy

High-normal blood **glucose** is a leading cause of premature death overlooked by mainstream doctors today.

Not only do we eat too many starches and simple sugars, but our aging liver synthesizes too much glucose internally via a process known as **gluconeogenesis**.

More than **80%** of the adult population has glucose levels that are too high.²⁶ Most of these people are not diagnosed with diabetes, but just by having **high-normal fasting glucose** (over **85 mg/dL**), risk of **death from cardiovascular disease** increases by **40%** according to a long-term study conducted on close to **2,000** people.²⁷

This and other studies show that even in otherwise healthy people, those with high-normal glucose are at increased risk of vascular death. For example, those with higher **after-meal** glucose (for example, **101 mg/dL** compared to **83 mg/dL**) had a **27%** increased risk of death from **stroke**.²⁸

A large body of published scientific research documents that people with higher **after-meal** glucose spikes have sharply increased risks for most of the diseases we associate with aging, such as cancer, Alzheimer’s, kidney failure, retinal damage, and vascular blockages.²⁹⁻⁴²

Chart 1 on this page shows the horrific consequences when glucose levels are elevated above optimal ranges. (We classify *optimal fasting glucose* in aging humans as under **86 mg/dL**).

High-Normal Blood Sugar Harms Brain

In September 2012, Australian researchers published findings showing that blood **glucose** at the **high end of normal** resulted in significant **brain shrinkage**.^{47,48}

The shrinkage occurred in regions of the brain (hippocampus and amygdala) involved in memory and other critical functions. Atrophy (shrinkage) in these brain areas worsens memory.^{47,48}

For this study, neuroscientists at Australian National University in Canberra studied 249 people in their early 60s. Each of them had blood sugar levels in the normal range. The study subjects' brains were scanned at the beginning of the study, and again four years later.



Comparing the before and after images, the researchers found significant **brain shrinkage** among those whose blood sugar levels were high but still below the World Health Organization's threshold for **pre-diabetes** (fasting glucose under **110 mg/dL**). The researchers report that these high normal levels may account for a **6% to 10%** decrease in the volume of the hippocampus and amygdala regions of the brain.

The lead researcher stated, "***It is this chronic exposure to high glucose levels that is more likely to lead to poorer brain health.***" He cautioned that these findings should not be taken "lightly," as the association between **high-normal blood sugar** and **brain shrinkage** was "robust."^{47,48}

What Should People Do To Reduce Their Blood Glucose Level?

Reducing ingestion of simple sugars and starches helps, but as people age, most of them produce excess glucose in their liver (*gluconeogenesis*) that causes higher glucose levels no matter how many carbohydrates they restrict.

The key is to inhibit intestinal absorption of carbohydrates, suppress excess production of glucose in the liver, and improve glucose utilization in tissues through enhanced insulin sensitivity.

Proven Methods To Lower Blood Glucose

Severely **restricting calorie consumption** will sharply lower glucose and insulin.^{50,51} **Life Extension** has published articles over the years about the **glucose-insulin lowering** effects of following low calorie diets.⁵²⁻⁵⁴ Few people, however, can adhere to this strict regimen. At a minimum, reducing the amount of **starches** and **simple sugars** in the diet will help reduce blood glucose.

CHART 1: Increased Health Risks in People with "Normal" Glucose Levels

CONDITION	GLUCOSE LEVELS (MG/DL)	INCREASED RISK
Developing Type II Diabetes	100-104	Up to 283% ⁴³
Stomach Cancer	95-105	Up to 130% ⁴⁴
First-time Heart Attack	Above 88	242% ⁴⁵
Need for Coronary Bypass or Stent Procedure	Above 95	73% ⁴⁶



What You Need to Know

Preserve Brain Health and Reduce Cancer Risk by Controlling Sugar Spikes

- In the United States, over 200,000 women are diagnosed with some form of breast cancer each year and around 40,000 die from it.
- An abundance of published research links high-normal blood glucose levels to increased breast cancer risk.
- Fasting glucose above 84 mg/dL results in over a 150% increase in breast cancer incidence compared to those with lower levels.
- Recent findings show blood glucose at the high end of normal resulted in significant brain shrinkage particularly in the regions of the brain (hippocampus and amygdala) involved in memory and other critical functions.
- More than 80% of the adult population has glucose levels that put them at increased risk of heart disease, stroke, dementia, and cancer.
- Reducing ingestion of simple sugars and starches helps control blood sugar levels, but as people age, most of them produce excess glucose in their liver (gluconeogenesis) that causes higher glucose levels no matter how many carbohydrates they restrict.
- The key is to inhibit intestinal absorption of carbohydrates, suppress excess production of glucose in the liver, and improve glucose utilization in tissues through enhanced insulin sensitivity.

More people are asking their doctors to prescribe an anti-diabetic drug called **metformin** to be taken before most meals, even if they are not medically classified as diabetic. Metformin functions via several mechanisms to lower blood glucose levels including impeding excess production of glucose in the liver (gluconeogenesis) and improving insulin sensitivity.⁵⁵

While metformin has incredible health benefits for non-diabetics, most doctors won't prescribe it to healthy people. The good news is that standardized **green coffee bean extract** works in similar ways as metformin and can be obtained without a prescription. A number of published studies show that **green coffee extract** lowers *after-meal* glucose surges to safe ranges that have been shown to protect against heart attack. One study showed that *standardized green coffee extract* reduced after-meal glucose by 32%!⁵⁶

Ensuring adequate intake of nutrients like **chromium**,⁵⁷ **lipoic acid**,⁵⁸ and **green tea extract**⁵⁹⁻⁶³ improves **insulin sensitivity**, as does ensuring that you maintain youthful blood levels of hormones like **DHEA**.⁶⁴⁻⁶⁵

Heavy Coffee Drinkers Benefit

If one drinks lots of black **coffee** before meals, they can lower their blood sugar levels and reduce their risk of diabetes, heart disease, and certain cancers. A study that received a lot of publicity showed that people who drink **12 cups of coffee daily** lower their diabetes risk by 67%. Since heart attack is the leading killer of diabetics, preventing diabetes also prevents heart attack.⁶⁶

The problem is that heavily roasted coffee destroys the primary ingredient (**chlorogenic acid**) thought to protect against disease—which is why it takes so much coffee to produce a substantive effect. Most people find it easier to take a *standardized green coffee extract* capsule before each meal to help protect against high blood glucose levels, or drink chlorogenic-fortified coffee.

Why Aren't Doctors Taking Steps To Lower Blood Glucose Levels?

Doctors rely on outdated reference ranges, meaning they accept dangerously high glucose levels as being normal. Yet more than 80% of the adult population has **glucose** levels that put them at increased risk of heart disease, stroke, dementia, and cancer.^{26,67-69} The bottom line is that doctors are not lowering their patient's glucose levels enough to prevent these needless diseases.

As tens of millions of Americans become “newly insured” because of the **Affordable Care Act**, doctors will have less time to scrutinize their patients’ glucose levels.

To put it bluntly, while demand for health care will skyrocket because of the federal government’s new mandate for virtually everyone to have health insurance, there is no corresponding increase in the supply of doctors. So expect delays in getting appointments, long waits at medical offices, and even less individual attention paid to you by physicians.

Taking Charge of Your Blood Glucose

For more than 30 years, the Life Extension Foundation® has advocated members keep their **fasting glucose** in low normal ranges, and an abundance of peer-reviewed published research findings validates this long-standing position.^{27,70-90}

A priority at Life Extension is to review member’s blood test results and recommend aggressive steps to get glucose levels to the ultra-safe low ranges that published studies show protects against heart attack and other common diseases.^{26-27,91}

What you do to achieve optimal **fasting glucose** of less than **86 mg/dL** is less important than what your **blood test results** reveal.

If your last **blood test** showed **fasting glucose** of **86 mg/dL** or higher, cut back on carbs, take **350 mg** of **green coffee extract** before each meal, and initiate other proven strategies to suppress **glucose absorption**, inhibit **gluconeogenesis**, and improve **insulin sensitivity**.

Summary

High-normal blood **glucose** is a leading cause of premature death overlooked by mainstream doctors today. More than **80%** of the adult population has glucose levels that are too high. An abundance of published research links high-normal **blood glucose** levels to **increased breast cancer risk**. New research links even high-normal blood sugar levels to **brain shrinkage** in key areas involved with memory. Reducing ingestion of simple sugars and starches helps, but as people age, most of them produce excess glucose in their liver (gluconeogenesis) that causes higher glucose levels no matter how many carbohydrates they restrict. The key is to inhibit intestinal absorption of carbohydrates, suppress excess production of glucose in the liver, and improve glucose utilization in tissues through enhanced insulin sensitivity. A number of published studies show that **green coffee extract** lowers *after-meal* glucose surges to ultra-safe ranges, and nutrients like **chromium**, **lipoic acid**, and **green tea extract** all work to support healthy insulin sensitivity that can slash the risk for most of the diseases we associate with aging, such as heart attack, cancer, Alzheimer’s, kidney failure, retinal damage and vascular blockages. ●

The next two pages are scientific summaries of the 12 studies evaluated by Life Extension, 9 of which strongly associate higher than optimal blood glucose with increased breast cancer risk.

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



Analysis of 12 Studies of Glucose Levels and Breast Cancer Risk

These pages represent a summary of the findings from **12 separate studies** that evaluate blood glucose levels and breast cancer risk:

Study #1: Muti P, Quattrin T, Grant BJB, et al. Fasting glucose is a risk factor for breast cancer: A Prospective study. *Cancer Epidemiology Biomarkers Prev.* 2002;11(11):1361-8.

- Between 1987 and 1992, 10,786 women ages 35–69 were recruited in a prospective case controlled study in Italy.
- At recruitment, fasting blood glucose samples were collected.
- After 5.5 years, 144 breast cancer cases were identified among the participants of the cohort. Four matched controls were chosen for each breast cancer case from members of the cohort who did not develop breast cancer during the follow-up period.
- In premenopausal women, glucose was associated with breast cancer risk: the age, body mass index, and reproductive variable adjusted relative risk (RR) for the highest quartile of serum glucose versus the lowest which was **2.8**.
- In premenopausal women, those with a blood sugar of **>84 mg/dL** had more than **150%** increase in breast cancer incidence compared to those with lower levels.

Editor's Note: Fasting glucose above **84 mg/dL** resulted in over a **150%** increase in breast cancer incidence compared to those with lower levels.

Study #2: Mink PJ, Shahar E, Rosamond WD, et al. Serum insulin and glucose levels and breast cancer incidence: The Atherosclerosis Risk in Communities Study. *Am J Epidemiol.* 2002;156(4):349-52.

- The authors examined the association of breast cancer incidence with serum levels of insulin and glucose in a cohort of 7,894 women aged 45–64 years from four US communities. Anthropometric factors and fasting levels of insulin and glucose were measured at baseline (1987–1989).
- Over an average follow-up period of **7.1** years (1987–1995), 187 breast cancer cases were ascertained.
- Compared to those with a fasting glucose **<100 mg/dL**, a blood glucose of **100–125 mg/dL** was associated with a **23%** increased risk of breast cancer after multivariate analysis.
- Multivariate analysis:
 - Age-, race-, and center-adjusted relative risks of breast cancer were **1.32** for fasting glucose levels of **100–125 mg/dL** and **1.60** for diabetic women in comparison with the normal level (**<100 mg/dL**).
 - After adjustment for age, race, and study center the relative risk for the association between diabetes and breast cancer decreased from **1.60** to **1.48** after additional adjustment for body mass index. The risk was further attenuated to **1.39**.
 - After adjustments for age, race, study center, body mass index, age at menarche, age at menopause, age at first live birth, family history of breast cancer in a mother or sister, number of sisters, alcohol intake, and pack-years of smoking the RR dropped to **1.23** in the **100–125 mg/dL** blood glucose group.

Editor's Note: Fasting glucose at or above **100 mg/dL** was associated with a **23%** increase in breast cancer incidence compared to those with lower levels. If threshold had been reduced to under **86 mg/dL**, the magnitude of the increase may have been much greater.

Study #3: Sieri S, Muti P, Claudia A, et al. Prospective study on the role of glucose metabolism in breast cancer occurrence. *Int J Cancer.* 2011;130(4):921-9.

- A prospective cohort study of 10,633 women from Italy (the ORDET study) found significant relationships between blood sugar levels and breast cancer risk.
 - Women with the highest glucose quartile (median **96 mg/dL**) had a **63%** increased risk for breast cancer compared to those in the lowest quartile (median **73 mg/dL**) after being “fully adjusted” for multiple variables.
 - Women in the highest fasting serum glucose quartile (median = **96 mg/dL**) had a significantly greater risk of breast cancer than those in the lowest glucose quartile (median = **73 mg/dL**). The results were adjusted for age, education, age at first birth, age at menarche, parity, family history of breast cancer, oral contraceptive use, breastfeeding, alcohol intake and smoking.

Editor's Note: Fasting glucose median of **96 mg/dL** resulted in **63%** increase in breast cancer incidence compared to median fasting glucose of **73 mg/dL**. This shows the benefit of keeping glucose at the low range of “normal.”

Study #4: Kabat GC, Kim M, Caan BJ, et al. Repeated measures of serum glucose and insulin in relation to postmenopausal breast cancer. *Int J Cancer.* 2009;125:2704–10.

- Longitudinal study of postmenopausal breast cancer risk using a **6%** sample of women in the Women's Health Initiative trial whose fasting blood samples provided at baseline and at years 1, 2, and 6 were analyzed for glucose and insulin.
- Mean serum glucose and insulin levels were higher in breast cancer cases compared to non-cases at baseline and at years 1 and 3, but the differences were not statistically significant.
- Although there was little to no association between blood glucose and breast cancer risk in most of the data analysis, two aspects of the analysis did show a significant relationship:
 - In an analysis of “all available measurements (but excluding measurements made within 1 year of diagnosis)” there was a significant relationship when examining all participants. Compared to participants with a glucose of **<89.5 mg/dL**, those with glucose levels of **89.5–99.4 mg/dL** had a **44%** increased risk of breast cancer, and those with **>99.5 mg/dL** had a **66%** increase in breast cancer risk.
 - Women who were past users of **hormone replacement therapy** and who had a blood glucose of **>89.5** had **3 times the risk** of breast cancer compared to past hormone replacement therapy users with blood glucose levels of **<89.5**. (This finding indicates even unnatural-to-the-body estrogen and progestin drugs require higher glucose levels to induce breast tumors.)

Editor's Note: Fasting glucose over **89.5 mg/dL** resulted in a **44%** increase in breast cancer incidence and fasting glucose over **99.5 mg/dL** resulted in a **66%** increased breast cancer risk compared to those with lower fasting glucose levels.



Study #5: Stattin P, Björ O, Ferrari P, et al. Prospective Study of Hyperglycemia and Cancer Risk. *Diabetes Care*. 2007;30(3):561-7.

- Calculated relative risk of cancer for fasting glucose levels.
- Examined fasting glucose and post load glucose concentrations for 33,293 women and 31,304 men.
- Among women, relative risks of developing cancer (all sites) were statistically significantly increased with elevated plasma glucose concentrations with a relative risk of **1.26** and **1.31** for the top versus bottom quartile of fasting and postload glucose, respectively.
- Among women <49 years, relative risk (RR) of developing breast cancer was increased with fasting glucose (RR **2.13**), for the top versus bottom quartile.*
 - *Cut points for fasting glucose quartiles were not provided in the full text
- Conclusion: **“The association of hyperglycemia with total cancer risk in women and men, independent of obesity, provides further evidence for an association between abnormal glucose metabolism and cancer.”**

Editor’s Note: Women under age 49 with higher fasting glucose were **113%** more likely to contract breast cancer compared to those with the lowest levels.

Study #6: Bjorge T, Lukanova A, Jonsson H, et al. Metabolic syndrome and breast cancer in the Me-Can (metabolic syndrome and cancer) Project. *Cancer Epidemiol Biomarkers Prev*. 2010;19:1737-45.

- Examined the association between metabolic syndrome factors and risk of breast cancer incidence and mortality.
- Data on 288,834 European (Austria, Norway, Sweden) women enrolled during 1974-2005 was examined. Relative risk of breast cancer was estimated for BMI, blood pressure, glucose levels, cholesterol and triglycerides.
- The authors state: **“Despite the inverse association of most MetS components with breast cancer before age 50, glucose was positively associated with risk. In women above age 60, blood pressure and glucose were associated with increased risk of breast cancer mortality.”**

Editor’s Note: Women over age 60 with higher glucose and blood pressure were more likely to die from breast cancer.

Study #7: Garmendia ML, Pereira A, Alvarado ME, et al. Relation between insulin resistance and breast cancer among Chilean women. *Ann Epidemiol*. 2007;17(6):403-9.

- 171 pre and post-menopausal Chilean women ages 33-86.
- **Insulin resistance** was independently associated with breast cancer in postmenopausal women, but not in premenopausal women.
- Among all women, there were slightly increased odds of breast cancer with elevated plasma glucose level.

Editor’s Note: Postmenopausal women with insulin resistance were **170%** more likely to contract breast cancer than those without insulin resistance.

Study #8: Rapp K, Schroeder J, Klenk J, et al. Fasting blood glucose and cancer risk in a cohort of more than 140,000 adults in Austria. *Diabetologia*. 2006;49(5):945-52.

- Investigation between fasting blood glucose and the incidence of cancer. A population-based cohort of more than 140,000 Austrian adults (63,585 men, 77,228 women) was followed over an average of 8.4 years.
- They found no increase in risk for breast cancer until blood glucose was **>126 mg/dL**.

Editor’s Note: Breast cancer incidence did not increase until fasting glucose reached newly defined diabetic levels of over **126 mg/dL**.

Study #9: Manjer J, Kaaks R, Riboli E, et al. Risk of breast cancer in relation to anthropometry, blood pressure, blood lipids and glucose metabolism: a prospective study within the Malmö Preventive Project. *Eur J Cancer Prev*. 2001;10(1):33-42.

- Studied the relationship between breast cancer and obesity, hypertension, dyslipidemia, and glucose levels.
- Premenopausal women—Fasting glucose and relative risk (RR) of breast cancer by quartiles:
 - <79 mg/dL, RR 1.0
 - >79 – 85 mg/dL, RR 1.10
 - >85 – 90 mg/dL, RR 1.24
 - >90 mg/dL, RR 1.03
- No significant differences in breast cancer risk were found for women from different quartiles of body mass index, blood pressure, serum triglycerides or blood glucose levels.

Editor’s Note: Breast cancer incidence was relatively unaffected by glucose mostly within normal ranges.

Study #10: Jee SH, Ohrr H, Sull JW, et al. Fasting serum glucose level and cancer risk in Korean men and women. *JAMA*. 2005;293(2):194-202.

- Examined the relationship between fasting serum glucose and diabetes and risk of all cancers and specific cancers in men and women in Korea. The main outcome measures were death from cancer and registry-documented incident cancer or hospital admission for cancer.
- Ten-year prospective cohort study of 1,298,385 Koreans (829,770 men and 468,615 women) aged 30 to 95 years.
- The highest fasting serum glucose (>140 mg/dL) had **higher death rates from all cancers** combined compared with the stratum with the lowest level (<90 mg/dL).
- By cancer site, the association was strongest for pancreatic cancer, comparing the highest and lowest strata in men and in women.
- Significant associations were also found for cancers of the esophagus, liver, and colon/rectum in men and of the liver and cervix in women, and there were significant trends with glucose levels for cancers of the esophagus, colon/rectum, liver, pancreas, and bile duct in men and of the liver and pancreas in women.

Age-adjusted mortality rate per 100,000 women due to breast cancer by fasting serum glucose level in Korean women, 1993-2002 is described below.

- Blood glucose **<90 mg/dL**, death rate **6 per 100,000**
- Blood glucose **90-109 mg/dL**, death rate **7.5 per 100,000**
- Blood glucose **110-125 mg/dL**, death rate **5.2 per 100,000**
- Blood glucose **126->140 mg/dL**, death rate **6.1 per 100,000**

Age-adjusted incidence rate of breast cancer per 100,000 women in relationship to blood glucose levels (1993-2002) is described below.

- Blood glucose **<90 mg/dL**, incidence rate **60.2 per 100,000**,
- Blood glucose **90-109 mg/dL**, incidence rate **63.8 per 100,000**.
- Blood glucose **110-125 mg/dL**, incidence rate **68.7 per 100,000**
- Blood glucose **126-139 mg/dL**, incidence rate **65.2 per 100,000**
- Blood glucose **>140 mg/dL**, incidence rate **55.4 per 100,000**

Editor's Note: Breast cancer incidence was unaffected by glucose within normal ranges. The reduced breast cancer rate in women in the highest glucose category may have been because the diabetic women were taking metformin, which is known to reduce breast cancer rates by **25%** in a recent meta-analysis when used over 3 years.²⁵

Study #11: Lawlor DA, Smith GD, and Ebrahim S. Hyperinsulinaemia and increased risk of breast cancer: findings from the British women's heart and health study. *Cancer Causes Control*. 2004;15(3):267-75.

- Objective: To assess the association between fasting insulin levels and breast cancer.
- Participants: 3,868 women aged 60–79 years.
- There was a trend toward a higher fasting blood glucose level in women with breast cancer (**109.73 mg/dL**) vs. those without breast cancer (**106.13 mg/dL**).
- The authors state in the discussion: "...although some estimates were imprecise, fasting glucose, HOMA score [a measure of insulin resistance], diabetes and gestational glycosuria or diabetes were also positively associated with breast cancer risk, suggesting that previous exposure to high circulating insulin levels, as well as contemporary exposure, is related to increased risk of breast cancer. There was a positive linear association across the distribution of fasting insulin and diabetes with breast cancer."

Editor's Note: Breast cancer incidence increased with poor glycemic control, possibly high levels of insulin and insulin resistance syndrome.

Study #12: Osaki Y, Taniguchi S, Tahara A, et al. Metabolic syndrome and incidence of liver and breast cancers in Japan. *Cancer Epidemiol*. 2012;36(2):141-7.

- Evaluated the relationship between the presence of metabolic syndrome and the incidence of cancer in the general Japanese population. This was a retrospective cohort study among 8,329 males and 15,386 females between 1992 and 2000.
- A high glucose level, rather than metabolic syndrome, was the significant associated factor for overall cancer and liver cancer development, whereas the metabolic syndrome was a significant associated factor for breast cancer, even after adjusting for other components.
- Breast cancer was not associated with high glucose levels.

Editor's Note: The study found higher breast cancer in women with metabolic syndrome, higher overall cancer incidence associated with higher fasting glucose, but lower breast cancer incidence associated with higher glucose, possibly indicative of the breast cancer preventing effects of metformin prescribed to those with the highest fasting glucose.

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Rich Rewards™

Polyphenol-Retained Coffee

The Healthy Gourmet Choice

Not all coffee provides the same powerful protection.¹⁻¹³

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

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

Among the most beneficial of these polyphenols is **chlorogenic acid**, a potent inhibitor of the **glucose-6-phosphatase** enzyme that stimulates excess **gluconeogenesis**.

A Patented Organic Roast

Life Extension®'s Rich Rewards™ **Breakfast Blend** and **Decaffeinated Roast** are made using a patented, **100% natural** process called **Healthy-Roast™**. It delivers a more complete nutritional profile of the coffee bean, yielding **chlorogenic acid** levels *far greater* than other premium brands.

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

Savory Taste Without Stomach Upset

Have you given up coffee because it upsets your stomach? With **Rich Rewards™**, you can enjoy coffee again. The **HealthyRoast™** process also preserves special, naturally occurring compounds in coffee that soothe your stomach.

Concerned about caffeine but don't like the weak taste of decaffeinated coffee? With **Rich Rewards™ Decaffeinated Roast**, you can limit your caffeine intake without compromising on flavor. The caffeine is removed through a completely chemical-free **Water Process**, which relies solely on water and carbon filters. It delivers the full flavor, aroma, and body of the *arabica* bean.

Life Extension's **Rich Rewards™** coffees give you a uniquely beneficial brew with superior flavor. The **Rich Rewards™ Breakfast Blend** contains up to **87% more chlorogenic acid** than conventional caffeinated coffees. **Rich Rewards™ Decaffeinated Roast** contains up to **187% more chlorogenic acid** than conventional decaffeinated coffees.

Comparison of Conventional Coffee to Life Extension's Rich Rewards™ Blend

Chlorogenic Acid		Chlorogenic Acid	
Conventional Coffee (Caffeinated)	92 mg	Rich Rewards™ Coffee Blend (Caffeinated)	172 mg
Conventional Coffee (Decaffeinated)	46 mg	Rich Rewards™ Coffee Blend (Decaffeinated)	132 mg

This chart shows Life Extension's **Rich Rewards™ Breakfast Blend** contains up to **87% more chlorogenic acid** than conventional caffeinated coffees and the **Rich Rewards™ Decaffeinated Roast** contains up to **187% more chlorogenic acid** than conventional decaffeinated coffees. This enables one to obtain the benefits of heavy coffee drinking in about half the number of cups.

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- * US Patent 6,723,368.



A 12 oz bag of **Life Extension® Rich Rewards™ Breakfast Blend** retails for \$13. Members pay **\$8.78** per bag during **Super Sale**. Item # 01609



A 12 oz bag of **Life Extension® Rich Rewards™ Decaffeinated Roast** retails for \$14. Members pay **\$9.45** per bag during **Super Sale**. Item # 01610

To order either of the **Rich Rewards™ Antioxidant Coffees** call **1-800-544-4440** or visit **www.LifeExtension.com**

THE UPGRADED LIFE EXTENSION MIX™

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

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

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

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

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

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

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

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

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

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

Pterostilbene is a compound naturally found in blueberries and grapes that has been shown to have beneficial, anti-aging effects on gene expression and to promote healthy cognitive function.

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

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



315 tablets
Item #01755



490 capsules
Item #01754



14.81 oz powder
Item #01756

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

Vegetable-Fruit Complex

Green tea extract (<i>decaf.</i>) (45% EGCG)	325 mg
Broccoli sprout concentrate (providing sulforaphane, glucosinolates, D-3T, and PEITC)	525 mg
Olive juice extract (providing polyphenols, hydroxytyrosol, oleuropein)	12.5 mg
Grapeseed proanthocyanidin extract (Leucoselect®)	25 mg
Grape (<i>vitis vinifera</i>) extract (BioVin®)	25 mg
Luteolin (Pureolin™ and SMART™)	8 mg
Lycopene (natural tomato extract) (Tomat-O-Red®)	3 mg
Lutein (marigold extract) (465 mcg <i>trans</i> -zeaxanthin)	15 mg
Maqui Berry (<i>Aristotelia chilensis</i>) anthocyanin extract	100 mg
Milk thistle extract (85% <i>silymarin</i>)	100 mg
Bromelain (from pineapple)	15 mg
Calcium D-Glucarate	200 mg
Citrus Bioflavonoids (50% <i>hesperidin</i>)	200 mg
Acerola extract 4:1	300 mg
Bilberry extract (MirtoSelect®)	30 mg
Pomegranate extract (30% punicalagins) (POMELLA®)	85 mg
Sesame seed lignan extract	10 mg
Berry-fruit blend (HiActives®) (blackberry, blueberry, cranberry, elderberry, persimmon, prune, and cherry)	200 mg
Wild Blueberry (<i>Vaccinium angustifolium</i>) anthocyanin extract (fruit)	150 mg
<i>trans</i> -Pterostilbene (from pTeroPure™)	0.5 mg
Cyanidin-3-Glucoside (C3G) (from blackcurrant extract)	1.25 mg
Tart Cherry (<i>Prunus cerasus</i>) proanthocyanidin extract	85 mg

Water-Soluble Vitamins and Enzymatic Activators

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

The Most Complete Multivitamin Available Today

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

Life Extension Mix™ now contains the **sodium selenite** form of selenium in addition to **L-selenomethionine** and **Se-methyl-L-selenocysteine**.

Fat-Soluble Vitamins

Vitamin A (90% Betatene® beta-carotene + 10% acetate)	5,000 IU
Vitamin D3 (cholecalciferol)	2,000 IU
Vitamin C (as calcium ascorbate, ascorbic acid, ascorbyl palmitate, magnesium ascorbate, niacinamide ascorbate, acerola extract)	2,000 mg
Ascorbyl palmitate (fat-soluble vitamin C)	250 mg
Vitamin E (natural D-alpha tocopheryl succinate and D-alpha tocopherol)	100 IU
Natural mixed tocopherols (providing gamma, delta, alpha, and beta tocopherols)	60 mg

Amino Acid Complex

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

Mineral Complex

Selenium (from Se-methyl L-selenocysteine)	100 mcg
Selenium (from L-selenomethionine—SelenoPure™)	50 mcg
Selenium (from sodium selenite)	50 mcg
Zinc (monomethionine) (OptiZinc®)	20 mg
Zinc (succinate)	15 mg
Boron (as boron citrate/aspartate/glycinate)	3 mg
Calcium	218 mg
Copper (as copper glycinate chelate TRAACS®)	1 mg
Chromium (as Crominex® 3+ chromium stabilized with Capros® and PrimaVie® Shilajit)	500 mcg
Potassium chloride (37.4 mg elemental)	71.3 mg
Molybdenum (sodium molybdate)	125 mcg
Manganese (gluconate)	1 mg
Iodine (potassium iodide)	150 mcg
Magnesium oxide (335.96 mg elemental)	560 mg
Magnesium citrate (35.28 mg elemental)	261.3 mg
Magnesium glycinate (11.74 mg elemental)	100 mg
Magnesium taurinate (7.83 mg elemental)	100 mg
Magnesium arginate (5.87 mg elemental)	100 mg
Magnesium ascorbate (3.40 mg elemental)	58.1 mg

Cholinergic Complex

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

Each one of these selenium compounds provides unique biological benefits. The **new Life Extension Mix™** also provides a small amount of **gamma tocopherol** (40 mg) as a part of **natural mixed tocopherols** which includes natural vitamin E. Most members take an additional **200 mg of gamma tocopherol** in other supplements. During **Super Sale**, the full daily dose of Life Extension Mix™ can be obtained for as little as **\$1.34** per day.

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

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

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

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

Zinc is often poorly absorbed, but LIFE EXTENSION MIX™ provides two of the most bioavailable forms of zinc.

Boron is not only needed to maintain healthy bone density but may also help promote healthy prostate cell function.

LIFE EXTENSION MIX™ provides a high amount of an optimal form of **chromium** to help maintain arterial wall structure and already normal glucose levels.

Magnesium helps protect arteries and heart valves, and supports heart and brain cells. LIFE EXTENSION MIX™ provides high potencies of six different forms of magnesium to fully saturate the body with this life-saving mineral.

Maintaining high levels of **acetylcholine** in the brain helps support cognitive function and memory.

Contains soybeans.

1) Betatene® is a registered trademark of Cognis Nutrition and Health. 2) The use of Calcium D-Glucarate is licensed from Applied Food Sciences, LLC under U.S. Patent No. 5,561,160. 3) OptiZinc® is a registered trademark of InterHealth Nutritionals, Inc. 4) SelenoPure™ is a trademark of Nutrition 21. 5) Crominex® 3+, Capros® and PrimaVie® are registered trademarks of Natreen, Inc. 6) Leucoslect® is a registered trademark of Indena S.p.A. 7) BioVin® is a registered trademark of Cyvex Nutrition. 8) Puroolin™ and SMART™ are trademarks of Pharma Science Nutrients, Inc., and is used here under license. All rights reserved worldwide. 9) Tomat-O-Red® is a registered trademark of Lycopodium LTD. 10) POMELLA® Extract is covered under U.S. Patent 7,638,640 and POMELLA® is a registered trademark of Verdure Sciences, Inc. 11) pTeroPure™ is a trademark of ChromaDex, Inc. 12) MirtoSelect® is a registered trademark of Indena, S.p.A., Milan, Italy. 13) HiActives® is a registered trademark of VDF FutureCeuticals, Inc. 14) TRAACS® is a registered trademark of Albion Laboratories, Inc.

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

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2. *Mutant Res*. 1999 Jul 16;428(1-2):329-38.
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To order call toll-free
1-800-544-4440 or visit
www.LifeExtension.com

THE NEXT GENERATION OF PROSTATE PROTECTION:

ULTRA NATURAL PROSTATE WITH APRÈSFLEX™ AND STANDARDIZED LIGNANS



Ultra Natural Prostate with AprèsFlex™ and Standardized Lignans softgels combines cutting-edge ingredients that have been scientifically substantiated to protect the prostate gland and maintain its healthy function.*

The latest addition to this formula is **AprèsFlex™**, an extract of *Boswellia serrata* that has been shown in studies to have **two times the bioavailability** of the leading boswellia extract. AprèsFlex™ inhibits the dangerous enzyme *5-lipoxygenase*. Boron is included because of studies showing it may help slow elevation of prostate-specific antigen (PSA).

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

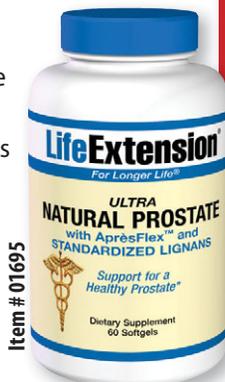
In order to boost its anti-estrogen capabilities, **Ultra Natural Prostate Formula** incorporates **HMRLignan™**, derived from Norway spruce, **flax lignans**, and **nettle root extract**.

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

The retail price for one bottle of **Ultra Natural Prostate Formula with AprèsFlex™ and Standardized Lignans** is \$38. If a member buys four bottles during **Super Sale**, the price is reduced to **\$23.63** per bottle. If a member buys 12 bottles during **Super Sale**, the price is reduced to **\$21.60** per bottle.

Contains soybeans and corn.

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



Item # 01695

The daily dose of two softgels of **Ultra Natural Prostate Formula with AprèsFlex™ and Standardized Lignans Formula** provides:

USPlus® Saw Palmetto (CO₂ DeepExtract™) (std to 85%-95% total fatty acids and sterols)	320 mg
Graminex® Flower Pollen Extract™	252 mg
AprèsFlex™ (Boswellia serrata) extract	70 mg
Pumpkin seed oil (Cucurbita pepo) extract (standardized to 85% total fatty acids)	200 mg
Stinging nettle root extract (Urtica dioica)	240 mg
Pygeum extract	100 mg
Lycopene	10 mg
Phytosterol complex (standardized to 26.6% free beta-sitosterol)	678 mg
Proprietary blend of HMRLignan™ Norway Spruce and ActiFlax™ Flax Lignan extracts	20.15 mg
Boron	3 mg

AprèsFlex™ is a trademark of Laila Nutraceuticals exclusively licensed to PL Thomas—Laila Nutra LLC. International patents pending.
ActiFlax™ is a trademark of Pharma Science Nutrients, Inc., all rights reserved. HMRLignan™ is a trademark used under sublicense from Linnea S.A. USPlus® and DeepExtract™ are trademarks of Valensa International and are used under license. US Patents 6,319,524 & 6,669,968. Not available for export.

* 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.

CALORIE CONTROL WEIGHT MANAGEMENT FORMULA

NOW WITH CoffeeGenic™ GREEN COFFEE EXTRACT



Nearly **80%** of **highly motivated** people fail to achieve long-lasting **weight loss** with diet and lifestyle modifications alone.¹

That's why the **Calorie Control Weight Management Formula** was designed. Clinical studies validate that when overweight humans take just some of the **natural ingredients** in this formula combined with reduced calorie intake, there is a greater **loss of body fat** compared to diet alone.²⁻⁴ **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** can help give you the winning edge when following a calorie-modulated weight loss program.

Calorie Control Weight Management Formula comes in a natural **blueberry flavor** and is available in a 60-serving bottle or individual **stick packs** that you can conveniently use when away from home.

Each dose has been fortified with **200 mg of CoffeeGenic™ Green Coffee Extract** to impede rapid absorption of starches and sugary foods⁵ and suppress **after-meal** glucose surges.⁶

To order any of the **Calorie Control Weight Management Formulas with CoffeeGenic™ Green Coffee Extract**, call 1-800-544-4440 or visit www.LifeExtension.com

Importance of Taking Calorie Control Weight Management Formula Before Heavy Meals

Once we accept the fact that weight loss requires more than diet and exercise alone, it becomes easy to understand the importance of taking the **Calorie Control Weight Management** formula before two heaviest meals of the day to help neutralize the unwanted effects of caloric excess. Those seeking to emulate the dose used in the 2012 study that induced an average **17.6 pounds** of weight loss⁷ might want to also take a **200 mg** capsule of standardized **green coffee bean extract** along a serving of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** before meals.

Each appetizing blueberry flavored stick pack or scoop of the Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract, powder provides:

CoffeeGenic™ Green Coffee (<i>Coffea arabica</i>) extract (bean) [std to 50% Chlorogenic acid (100 mg)]	200 mg
LuraLean® propolmannan (<i>Amorphophallus konjac</i> K. Koch, ssp. <i>Amorphophallus japonica</i>) fiber extract (root)	2,000 mg
Phase 2® <i>Phaseolus vulgaris</i> white kidney (bean) extract	445 mg
Integra-Lean® African Mango (<i>Irvingia gabonensis</i>) proprietary extract (seed)	150 mg
Tea Slender™ Green Tea Phytosome Green Tea (<i>Camellia sinensis</i>) Phytosome decaffeinated extract (leaf) bound to phosphatidylcholine (from lecithin)	150 mg

Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract • Item # 01693*

(Each serving contains approximately 6 mg caffeine)

A bottle containing 60 servings of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** natural blueberry flavor powder retails for \$60. If a member buys four bottles during **Super Sale**, the price is reduced to just **\$36.45** per bottle.

For added convenience of use, this new formula also comes in **60 individual stick packs**. Each box containing 60 servings of **Calorie Control Weight Management Formula with CoffeeGenic™ Green Coffee Extract** natural blueberry flavor powder retails for \$64. If a member buys four boxes during **Super Sale**, the price is reduced to just **\$40.50** per box. **Item # 01694***

Contains soybeans. Contains corn.

References

1. *Lancet*. 2011 Aug 27;378(9793):826-37.
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3. *Altern Med Rev*. 2009 Jun;14(2):154-60.
4. *Altern Ther Health Med*. 2007 Jul-Aug;13(4):32-7.
5. *J Nutr Sci Vitaminol (Tokyo)*. 2007 Apr;53(2):166-73.

CAUTION: Take at least two hours apart from medications. Because this product may lower blood glucose, consult your healthcare provider before taking this product if you are taking blood glucose-lowering medication. Taking fiber products without adequate liquid may increase the risk of choking. Consult your

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7. *Diabetes Metab Syndr Obes*. 2012;5:21-7.

healthcare provider before taking this product if you have difficulty swallowing or esophageal narrowing.

Integra-Lean® *Irvingia* is protected by U.S. Patent No. 7,537,790. Other patents pending. **Phase 2®** is used under license. **LuraLean®** is a registered trademark of AHD International LLC.



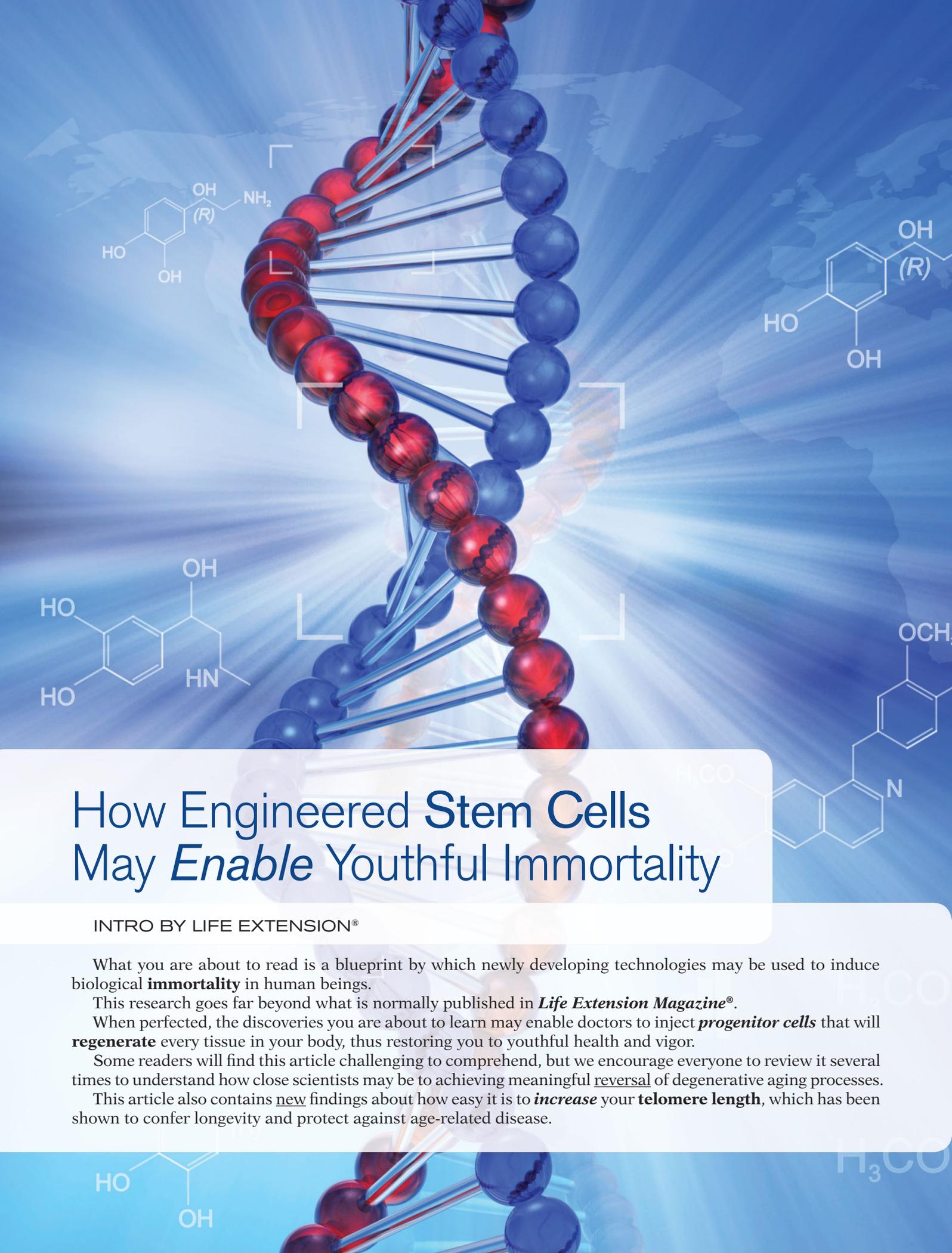
Item # 01693



Item # 01694

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

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.



How Engineered Stem Cells May *Enable* Youthful Immortality

INTRO BY LIFE EXTENSION®

What you are about to read is a blueprint by which newly developing technologies may be used to induce biological **immortality** in human beings.

This research goes far beyond what is normally published in *Life Extension Magazine*®.

When perfected, the discoveries you are about to learn may enable doctors to inject **progenitor cells** that will **regenerate** every tissue in your body, thus restoring you to youthful health and vigor.

Some readers will find this article challenging to comprehend, but we encourage everyone to review it several times to understand how close scientists may be to achieving meaningful reversal of degenerative aging processes.

This article also contains new findings about how easy it is to **increase** your **telomere length**, which has been shown to confer longevity and protect against age-related disease.

Targeting the Clockwork of *Cell Immortality*: A PROGRESS REPORT

There appears to be a consensus among gerontologists that a significant extension of the healthy human life span will require **targeting** of the **clockwork mechanisms** that cause aging. We will therefore attempt to explain what this means and what the implications may be for **reversing** biological aging.

Modern gerontology research can be divided into two camps. In the first camp, researchers are on a quest to understand and control the central mechanisms of the aging “**clockwork**.” This molecular machinery should be thought of as upstream central regulators (like telomeres) that subsequently trigger mechanisms further downstream. It is these downstream pathological mechanisms, such as **chronic inflammation**, that inflict age-related changes in specific tissues.¹⁻³

The second camp of researchers is focused on targeting molecules involved in these downstream mechanisms, as these factors (such as **pro-inflammatory cytokines**) are the “hatchet men” that directly trigger disease processes.^{4,5}

If we were to think of the individual mortal human as a ticking time bomb, the **upstream** mechanisms would be the **clocking mechanism** of the bomb, perhaps a ticking alarm clock or a burning fuse, and the downstream mechanisms would be the dynamite that is the most direct cause of the damage that follows. The first camp’s approach would therefore be to prevent the explosion itself by stopping the clock, whereas the second camp’s solution would be to let it explode but blunt the force of the explosion by covering it with a dump truck full of sand. >

In humans, an example of an upstream clockwork mechanism would be the *telomere* clock of cellular aging, which counts off how many times a cell has divided and hence determines how old a cell really is. An example of a downstream mechanism would be an *inflammatory* process that leads to activation of damaging molecules in the coronary arteries as seen in *atherosclerosis*.⁶⁻⁸

Many of the downstream processes are those typically addressed in *Life Extension* articles. This emphasis on the downstream may in part reflect the fact that our current understanding of many of the downstream mechanisms predates our understanding of the “upstream” clocking mechanisms. In addition, interventions into these downstream events have favorably impacted the severity of age-related diseases.

However, most gerontologists agree that targeting the downstream mechanisms will not sufficiently extend human life expectancy to meet the objectives of those who seek aggressive solutions to pathological aging. By targeting upstream-biology—never before attempted in the practice of medicine—we could potentially create the most powerful impact on the aging process.

But first we should consider the basis for assuming that such a central clockwork exists, or that it would even be feasible to intervene in the inexorable progress of this ticking clock.

In this brief progress report, we will attempt to describe the shortest path to a proof-of-principle by referring to a natural type of *cellular immortality* recently captured in the laboratory dish. This

line of reasoning is now taking off in the scientific community.

We will then describe research funded in part by the **Life Extension Foundation**[®] that has potential clinical application to combat the deadliest manifestation of cell mortality in the United States, namely, *coronary artery disease*...the leading cause of heart attack.

The Facts of Life

Let’s begin with the facts of life and remember how an individual human being comes to exist in the first place. The union of a sperm and egg cell leads to a unified cell commonly called a *zygote*, which then divides into two cells, then four, and so on, until a small cluster of cells form, each of which has the power to become any of the cell types in the human body.

Cells that have this power are said to be *pluripotent*, meaning they have power (*-potent*) to become a variety (plurality or *pluri-*) of cell types. These cells commit to the cell type they will eventually become, that is, each cell will commit to becoming a **reproductive** (sperm or egg) cell, or one of the body’s many **life-functioning** cell types such as muscle, blood, or brain cells. This process of cellular commitment is called *differentiation*.

If pluripotent cells differentiate into sperm or egg cells, scientists say they are remaining in the *germ-line*. The germ-line is that lineage of cells that connects the generations and is the biological basis of the



immortality of the species. They are the cells whose continuous proliferation ensures there are always zebras in Africa. They are the reason why you can go to a local greenhouse and buy fresh young petunias to plant in your garden every spring, year after year. Germ-line cells have the amazing ability to spin off new individuals forever, without the limitations of aging.

When pluripotent germ-line cells commit to become one of the cell types of the body, we say they have differentiated into **somatic** cells. This differentiation seals their fate. These somatic cells are now mortal, even though, up to this point, they have been proliferating continuously for billions of years as germ-line cells. They will now become part of the body that is programmed to die usually within 100 years. Those cells that went the germ-line route have the potential (though not certainty) that they may continue in future generations indefinitely. Because they are not committed to a mortal fate, scientists say the cells are *immortal*. The use of this term does not mean that the individual cells are indestructible, nor does it mean anything in a religious sense. Instead, the term simply refers to the lack of commitment to the mortality that occurs when these cells differentiate into **somatic** (functional) cells that have finite life spans, sometimes measured in maximum amount of doubling times before they die.

For the past few decades, scientists have focused on deciphering the molecular mechanisms of the **immortality** of **germ-line cells** in order to find a means of using those insights to restore health to aging **somatic** (life-sustaining functional) **cells**. In other words, we have attempted to find a means to rewind the clock of the “ticking time bomb” in our cells back to the beginning of life.

In the past few years, we have learned that, when cells make the decision to become **somatic** (that is, cells that enable the **body** to function as opposed to **reproductive germ-line** cells) they turn **off telomerase**, an enzyme that synthesizes a repeated sequence of DNA over and over again at the end of DNA strands needed to maintain cellular viability.⁹⁻¹² These regions of the DNA at the chromosome ends are called **telomeres**.

Most **somatic** cells lack sufficient **telomerase**, and so every time **somatic** cells proliferate, they progressively shorten their **telomeres**. This functions as a clock mechanism not unlike the burning of a fuse and we refer to it in this article as the “telomere clock of cellular aging.” However, in contrast to **somatic** cells, **germ-line** cells retain telomere length appropriate for the beginning of life, due to an abundance of telomerase activity.



What You Need to Know

Scientists Discover Novel Way to Reset Cellular Aging Clock

- **Pluripotent** cells have the power to become a variety of cell types.
- Most **somatic** cells lack sufficient **telomerase**, and so every time **somatic** cells replicate, they progressively shorten their **telomeres**.
- **Germ-line** cells retain telomere length appropriate for the beginning of life, due to an abundance of telomerase activity.
- **Telomerase**, is an enzyme that synthesizes telomeres, a repeated sequence of DNA over and over again at the end of DNA strands needed to maintain cellular viability.
- Although telomeres typically shorten with aging, shortening is not inevitable and telomeres can also lengthen.
- Recent scientific studies have shown that **reduced** plasma levels of **omega-6** fats coupled with **increased** **omega-3s** resulted in an **increase** in telomere lengths.
- It is possible to utilize these advances to not only revert a cell in the body (somatic cell) back to the all-powerful **pluripotent** stem cell state, but also to **activate telomerase and reset the clock of cell aging all the way back to the very beginning of life.**

Since there is currently no known way to fully extend telomere length in the body to youthful levels, our researchers have instead sought means to mimic the natural immortality of germ-line cells in the laboratory dish to make young and healthy cells of all kinds that could potentially be injected into the body. Using this approach, we might be able to repair tissues afflicted with age-related degenerative diseases. The good news is that this technology is now very much operational, at least on the lab bench, and is a focus of intensive research around the world.

Reduced Omega-6 + Increased Omega-3 = Extended Telomere Length

Telomeres are the caps at the ends of chromosomes. Shorter telomeres have been linked with age-related disease and early death.¹³⁻¹⁶

Although telomeres typically shorten with aging, shortening is not inevitable and telomeres can also lengthen. Telomere length is associated with lifestyle behaviors. For instance, women who are obese or smoke cigarettes suffer greater loss of telomere length, with a corresponding reduction in life span.^{17,18}

As this article was being finalized, a new study was published that measured telomere length in humans given **EPA/DHA fish oil** supplements. The results showed that reduced plasma levels of **omega-6 fats** coupled with increased **omega-3s** resulted in an increase in **telomere lengths**.¹⁹

The scientists attributed this **telomere length increase** to reductions in inflammatory cytokines and oxidative stress brought on by **higher** levels of **omega-3s** in relationship to pro-inflammatory **omega-6s**.

Omega-6 fats to avoid include corn, sunflower, and safflower oils, along with arachidonic acid found in red meat and egg yolks. Olive oil, rich in monounsaturated fats, should be substituted for omega-6 oils whenever possible. Dietary sources of omega-3s include cold-water fish, walnuts, and flax seed.

In this human study where **telomeres** were **lengthened**, scientists used between **1,250** and **2,500 mg** of **EPA/DHA fish oil** daily to boost omega-3 plasma levels in relation to omega-6s.¹⁹ **Life Extension** members typically consume **2,400 mg** of **EPA/DHA** daily in their fish oil supplement.

Embryonic Stem Cells

The first step in understanding how germ-line cell immortality could be used to regenerate aging tissues in the human body was to capture the cells in the laboratory dish. In the mid 1990s, in collaboration with Drs. James Thomson, Roger Pedersen, and John Gearhart, some of us at **Geron Corporation** launched a project to isolate these cells and grow them as stable cell lines. These cells, called **human embryonic stem cells**, were the first naturally immortal human cells ever isolated due to their abundant natural expression of telomerase. They had the wonderful property of being able to generate each and every cell type of the human body. For the first time in history, medicine had in its hands a **pluripotent stem cell** to make every cellular component of the human body. (**Pluripotent stem cells** are capable of differentiation into any other functional (somatic) cell the body needs.)

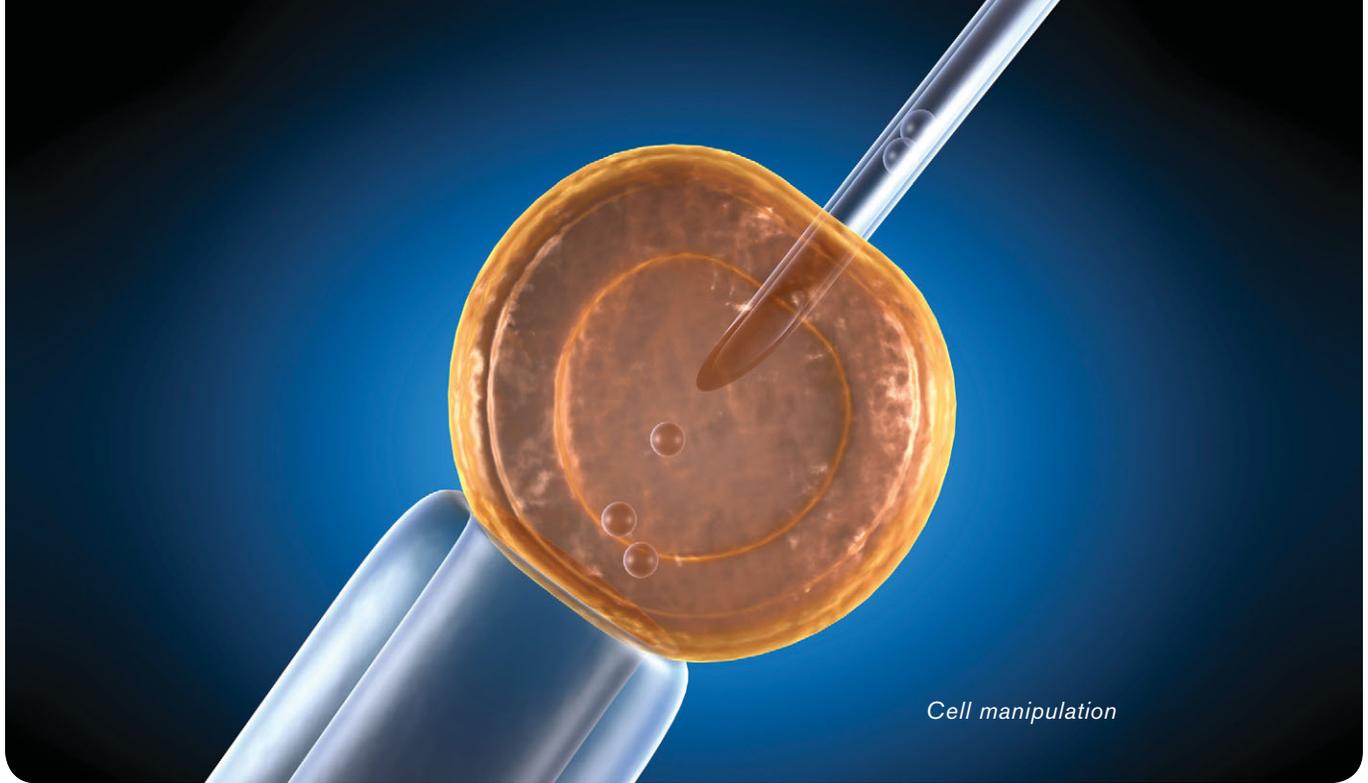
These cells generated considerable excitement since they were a means of mass-producing replacement cells for the treatment of a host of degenerative diseases involving the loss or dysfunction of cells, including those in osteoarthritis, macular degeneration, diabetes, heart failure, Parkinson's disease, and numerous other disorders. The first report of the isolation of these cells marked the birth of the new field called **regenerative medicine**. When perfected, this technology offered the theoretical potential of **regenerating tissues in the human body back to a youthful state**.

Cloning – A Cellular Time Machine

In 1997, Dolly the sheep was cloned. The way cloning works is that the DNA of a **somatic** cell is transplanted into an egg (**germ-line**) cell, whose own DNA has been removed to create a **pluripotent** cell. This "cloned" cell is capable of *differentiating* into a new individual with the DNA from an existing individual.²⁰

Thus, cloning is an artificial means of generating identical twins differing in age. In the case of nuclear transfer, the DNA in the **somatic** cells is *reprogrammed*, meaning its memory of being a skin cell has been erased by a cellular "time machine," and that cell has now been returned to the **germ-line** state capable again of making individuals of the same genetic constitution, over and over again... potentially forever.

But one may ask, in the case of cloning, what happens to the aging process of the body cell? Is aging of the cell really reversed, or do we somehow get an embryo and resulting cloned animal that looks young, but is really born old, a kind of "fountain of old age"? At first, the group that cloned Dolly reported that



Cell manipulation

she was born with short telomeres, and cloning had not reversed the aging process. Dolly was therefore thought to be “born old;” she was a sheep in lamb’s clothing, so to speak.

However, in **2000**, our group published a report demonstrating that, in the case of cow cloning, the telomere clock of cell aging is **reset** back to the **beginning of life**.²¹ Today, the consensus view is that cloning is capable of **reversing cell aging**, so animals cloned from aged animals are born young again. If you think about these results, they logically lead to the next question: Would cloning work in humans—not necessarily to make copies of them, but rather as means of **reversing the aging of human cells**?

Thus, cloning (*somatic cell nuclear transfer*) could potentially be used to reverse the developmental aging of a human cell. It became a topic of considerable controversy that, for example, a mature skin cell could possibly be transported back in time to the beginning of life. Some of us believe that such a **cellular time machine** could be used to make young cells of any kind that would be genetically identical to any given patient. This concept came to be called **therapeutic cloning**, in order to distinguish it from making a cloned human being (the latter process is referred to as *reproductive cloning*).

Induced Pluripotent Stem (iPS) Cells

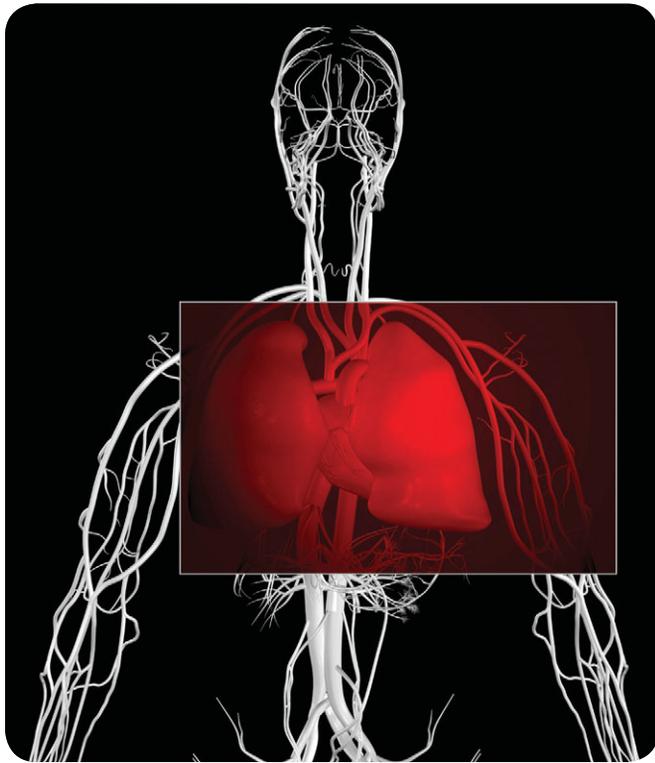
Today, the controversy over therapeutic cloning has largely dissipated due to the discovery that the use of just a handful of molecules can effectively replace the use of a whole egg cell in restoring aged **somatic** cells back to **pluripotency** (youthful cells capable of differentiation into any other functional [somatic] cell).

In other words, we can take human **somatic** cells **back** to the **embryonic germ-line** state of immortal **pluripotency** without cloning or ever making an embryo. Since such cells are not isolated from embryos, they are called **induced pluripotent stem (iPS) cells**, in order to distinguish them from **embryonic** stem cells.

Most significantly, as previously reported in *Life Extension Magazine*,²² we demonstrated that it is possible to utilize these advances to not only revert a cell in the body back to the all-powerful **pluripotent** stem cell state, but also to **activate telomerase** and **reset the clock of cell aging** all the way back to the very beginning of life.

As a result, the stage is now set to lift some cell from the body—perhaps from a sliver of skin, from blood cells, or from a hair pulled from the head—and then genetically manipulate that cell, returning (converting) it to a continuously proliferating youthful line of stem cells. These rejuvenated cells we believe will be identical to the individual cell they had developed from decades earlier. Since these iPS cells are now reverted back to the germ-line state, they can spin off new somatic cells of all types for an indefinite period of time.

A thoughtful person would recognize within these advances the powerful means to potentially regenerate aged tissues with young cells, and a means to do so for periods that extend the normal lifespan of human body cells. All of this new technology targets the **upstream** clockwork mechanisms of aging. This is possible because life is, in a sense, **naturally immortal** in that each species has cells capable of regenerating new individuals continuously and for an indefinite period of time.



Applying Regenerative Medicine to Heart Disease

In thinking about where such technologies could be applied, we first considered cardiovascular disease, **heart failure**, and **stroke** since they are among the top causes of death in the United States.

Although epidemiological studies have demonstrated that abnormal lipid profile, diabetes, sedentary lifestyle, and genetic susceptibility are risk factors for coronary disease, congestive heart failure, and stroke, **advancing age** is unequivocally the major risk factor for these diseases. Therefore, we seek a means to target the upstream mechanisms of vascular aging by **replacing aged coronary artery cells** with the young cells we were born with. This approach could become the most effective means of intervening in heart disease, stroke, and other cardiovascular diseases.

Life Extension's Contribution to This Research

In late **December 2010**, I approached the **Life Extension Foundation**® about the opportunity to accelerate the pace of research that could lead to the reversal of vascular aging using technologies described in this article. Recognizing the potential to cure the most common problem afflicting aging humans, the **Life Extension Foundation**® provided **\$2 million** of initial funding.

These funds were used to help launch **ReCyte Therapeutics**, which is focused on regenerating aged vascular function by developing clinical applications based on several of the technologies we have been discussing. The mission is to reverse the developmental aging of a person's cells and then turn those reprogrammed and rejuvenated cells into primitive vascular progenitors useful in "re-plumbing" an aged vascular system.

ReCyte's scientists are particularly interested in a cellular component of blood vessels called **endothelial cells** that reside on the inner lining of the blood vessel. Normal endothelial function and endothelial health are adversely affected by the aging process, presumably due to telomere attrition²³⁻²⁶ (and other factors). An aged vasculature is therefore more prone to develop plaques, inflammation, and atherosclerosis. Therefore, myocardial infarction is really not the problem of the heart *per se*, but rather a problem with the vasculature's supply of blood to the heart. The goal of ReCyte is to manufacture young vascular progenitor cells capable of repairing aged blood vessels, to target the upstream biology of the aging artery, not the downstream events of inflammation or cholesterol accumulation, arterial calcium deposits, and the formation of atherosclerotic plaques.

Where Are We Today?

With financial help from the **Life Extension Foundation**® we have been able to improve the efficiency of reprogramming cells using technology licensed from the Wistar Institute in Philadelphia, Pennsylvania, with whom we now collaborate. Wistar scientists discovered that by turning off a gene called **SP100**, differentiated cells became more susceptible to re-expressing genes normally expressed only in **pluripotent stem cells**.²⁸

Second, we have formed a similar collaboration agreement with scientists at Cornell Weill College of Medicine in New York City who are focused on the development of vascular endothelium. In collaboration with that group, we have successfully generated purified populations of embryonic vascular cells from induced pluripotent stem cells.²⁹

As a result, we believe the pieces are in place to reverse the developmental aging of an aged person's cells and then to turn these rejuvenated pluripotent stem cells into young vascular progenitors that should be useful in restoring normal youthful function to the aged vasculature of the heart, brain, and other tissues. Such cells would also be *histocompatible* with individual patients, meaning that there would be no need for immunosuppressive drugs. We have already derived



Stem Cell Pioneers Awarded Nobel Prize

On **October 9, 2012**, two scientists who helped lay the foundation for **regenerative medicine** were awarded the **Nobel Prize** in Physiology or Medicine.

The shared Nobel Prize was given to Dr. John B. Gurdon of the University of Cambridge in England and Dr. Shinya Yamanaka of Kyoto University in Japan for their work on **induced pluripotent stem cells** (iPS).²⁷

In granting the award, the **Nobel Prize Assembly** stated:

“Research during recent years has shown that iPS cells can give rise to all the different cell types of the body....and led to remarkable progress in many areas of medicine. For instance, skin cells can be obtained from patients with various diseases, reprogrammed, and examined in the laboratory to determine how they differ from cells of healthy individuals. Such cells constitute invaluable tools for understanding disease mechanisms and so provide new opportunities to develop medical therapies.”

these endothelial cells from multiple human embryonic cell lines at a clinically applicable scale consistent with Good Manufacturing Practices (GMP).

Fortuitously, at the same moment when we see an aging population placing a strain on our healthcare system and our national budget, we also see the rise of a new technology facilitating the manufacture, on a clinically-feasible scale, of **young cells** of all types that may allow us to regenerate tissues afflicted with age-related degenerative disease.

About BioTime

At BioTime we are utilizing these breakthroughs in regenerative medicine to target several major diseases. BioTime can be thought of as the hub of a wheel with several subsidiaries focused on different medical specialties such as orthopedics, cardiovascular disease, neuroscience, and so on. **ReCyte Therapeutics** is one of those subsidiaries.

BioTime (NYSE MKT: BTX), both as a company and as individuals, are determined to find the means of rapidly translating this bench-top science into life-saving clinical reality. We are thankful for the support of the Life Extension Foundation® for their vision and commitment to advancing human health. We look forward to the day when we can report in *Life Extension Magazine* the outcomes of the first patients to be treated with reprogrammed young **vascular progenitor cells** as a novel therapy for cardiovascular disease, the number one cause of mortality in aging humans.



Summary

Very early in the course of human development, a small cluster of cells form, each of which has the power to become any of the cell types in the human body. Cells that have this power are said to be *pluripotent*, meaning they have power (*-potent*) to become a variety (plurality or *pluri-*) of cell types. These cells commit to the cell type they will eventually become, that is, each cell will commit to becoming a **reproductive** (sperm or egg) cell, or one of the body's many somatic or **life-functioning** cell types such as muscle, blood, or brain cells. If pluripotent cells differentiate into sperm or egg cells, they are remaining in the *germ-line*, that lineage of cells that connects the generations and is the biological basis of the immortality of the species. When cells make the decision to become **somatic**, they turn off **telomerase**, an enzyme that synthesizes a repeated sequence of DNA over and over again at the end of DNA strands needed to maintain cellular viability.⁹⁻¹² A recent discovery showed that the use of just a handful of molecules can effectively restore aged **somatic** cells back to **pluripotency**. It is possible to utilize these advances to not only revert a cell in the body back to the all-powerful **pluripotent** stem cell state, but also to **activate telomerase** and **reset the clock of cell aging** all the way back to the very beginning of life. ●

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

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FIGHT BACK AGAINST AGING!



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

- **CARNOSINE:** As humans age, proteins in their bodies become **irreversibly damaged** by glycation reactions. Glycation is the cross-linking of proteins and sugar to form **non-functioning** structures called advanced glycation end products in the body, which can lead to alterations of normal cell function. Carnosine is not only a powerful **anti-glycating** agent, but it also protects **neurons** against reactive and cytotoxic protein carbonyl species associated with normal aging.¹⁻⁵
- **PQQ:** This breakthrough micronutrient has been shown to trigger **mitochondrial biogenesis**—the growth of **new** mitochondria in aging cells!⁶ PQQ also activates genes involved in protecting the delicate structures within the mitochondria.⁷⁻¹⁰
- **LUTEOLIN:** Systemic inflammation is involved in most undesirable consequences of aging. Culprits behind **inflammatory** reactions are pro-inflammatory **cytokines**, such as **interleukin-1** and **tumor necrosis factor-alpha**. Luteolin is a flavonoid that has been shown to help suppress these inflammatory cytokines.¹¹⁻¹⁶
- **BENFOTIAMINE:** Effectively modulates multiple destructive biochemical pathways that are induced by higher than desirable blood glucose levels. Human mortality studies indicate that **ideal** fasting glucose levels are between **74–85 mg/dL**. Yet many aging people have fasting glucose above **90 mg/dL**, which is less than optimal.¹⁶⁻¹⁹ Benfotiamine protects endothelial cell integrity from the effects of high glucose levels. In addition, benfotiamine exhibits direct antioxidative capacity and supports DNA function.²⁰
- **PYRIDOXAL 5'-PHOSPHATE:** Aging results in the formation of **advanced glycation end products** throughout the body. **Pyridoxal 5'-phosphate** is the active form of vitamin B6 that has been shown to protect against both lipid and protein glycation reactions.²¹⁻²⁴

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

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

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

Carnosine	1000 mg
ArginoCarn® Acetyl-L-carnitine arginate DiHCl	675 mg
R-Lipoic acid (as microencapsulated Bio-Enhanced®)	150 mg
Benfotiamine	150 mg
Pyridoxal 5'-Phosphate	100 mg
BioPQQ™	10 mg
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Diminished cellular energy production is an inevitable consequence of aging. As adults mature, the cellular power plants known as the *mitochondria* become dysfunctional. The resulting slowdown in energy production manifests in numerous health problems.

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

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

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

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

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

Two capsules of **Optimized Carnitine with GlycoCarn[®]** provide:

Acetyl L-carnitine HCl	800 mg
ArginoCarn[®] Acetyl L-carnitine Arginate Di-HCl	300 mg
GlycoCarn[®] Glycine Propionyl L-Carnitine HCl	300 mg

A bottle of 60 vegetarian capsules of **Optimized Carnitine with GlycoCarn[®]** retails for \$36. If a member buys four bottles during **Super Sale**, the price is reduced to only **\$21.60 per bottle**.

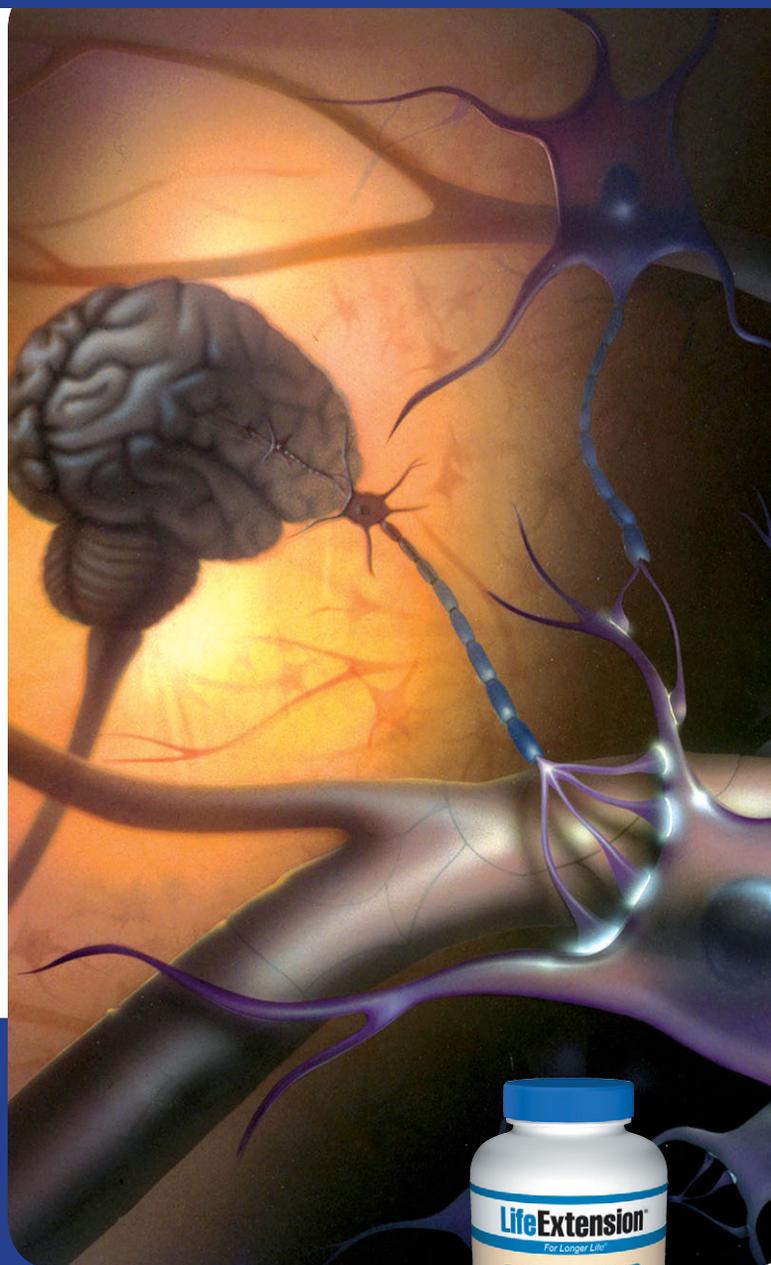
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CAUTION: For some people, L-carnitine, especially acetyl-L-carnitine, may have a stimulating effect. Therefore, it may be unwise to take it in the evening.

GlycoCarn[®] and ArginoCarn[®] are registered trademarks of Sigma-tau HealthScience, Inc., and are protected by US patent Nos. 6,703,042 and worldwide patent EP1202956. The combination of multiple forms of Carnitine is protected by Sigma-tau patent # 6,245,378.

*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.



Item # 00916

To order **Optimized Carnitine with GlycoCarn[®]**,
call **1-800-544-4440** or visit
www.LifeExtension.com

World's Most Comprehensive ANTI-AGING SKIN SERUM

SAVE 60% DURING SUPER SALE!

RejuveneX® Factor provides **28** active ingredients in a *deep-penetrating serum*. To get these skin **protecting** and **rejuvenating** compounds elsewhere, you'd need to layer on a dozen expensive creams—each providing only **2 or 3** of these active ingredients.

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

SERUM VS. CREAM

RejuveneX® Factor is a **serum**—a more concentrated format that is thinner than a cream and ensures superior **absorption** of its **28** skin enhancing compounds.

RejuveneX® Factor Firming Serum comes in an airless pump to protect the integrity of the bioactives, and utilizes a patented deep-layer delivery system that provides sustained release for **6 to 8 hours!**

RejuveneX® Factor Firming Serum is uniquely free of paraben, irritants, estrogenic chemicals, mineral oil, and synthetic fragrances.

HUGE SAVINGS DURING SUPER SALE

A 1.7 oz bottle of **RejuveneX® Factor Firming Serum** retails for \$65. If a member buys two bottles during **Super Sale**, the price is reduced to **\$34.20** a bottle. If six bottles are purchased during **Super Sale**, the price is only **\$26** a bottle. Each bottle will last **two months** which brings the cost for **RejuveneX® Factor Firming Serum** to as low as **\$13** per month when purchased during the annual **Super Sale!**



Rejuvenex® Factor Firming Serum Provides 28 Active Compounds:

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

Salicylic acid: Supports production of new skin cells.

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

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

Lactic acid: Helps the body shed dead skin cells.

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

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

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

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

Glycine soja (soybean) oil: Promotes collagen production and skin elasticity¹¹ and supports UV defense.

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

DMAE (dimethylaminoethanol): Helps smoothe and firm skin.

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

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



ITEM# 01621

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

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

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

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

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

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

PolyP (sodium polyphosphate): Supports production of collagen.

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

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

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

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

RNA: Promotes production and turnover of new skin cells.

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

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

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

ULTIMATE eye HYDRATION



Item # 00893

The retail price for a box containing two 5 mL vials of **Brite Eyes III** is \$34. If a member buys four boxes during **Super Sale**, the price is reduced to **\$21.60 per box**.

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

Eye support is *essential* to preventing age-related vision problems.

The older eyes get, the more susceptible they become to an array of debilitating issues that can hamper eyesight and cripple quality of life. With just a few drops of the proper eye lubricant, **eye irritation** stemming from **dryness** may be alleviated.

Brite Eyes by Life Extension® provides a powerful dose of two well-established lubricants in every drop, soothing eye discomfort without irritation. **Hydroxymethylcellulose** and **glycerin** are FDA-approved for ophthalmic use and are uniquely preserved with potent **antioxidants** and **anti-glycating** agents.

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

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

Comprehensive Pomegranate Protection!

FULL-SPECTRUM POMEGRANATE™ FORMULA

Few nutritional sources have gained as much scientific validation as **pomegranate**.¹

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 for the first time 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,²⁻⁴ **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**, a member of the **triterpene** family of essential oils that provides cellular support to help with inflammation,⁵ and **pomegranate**, to combat age-related metabolic changes.⁶

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**.

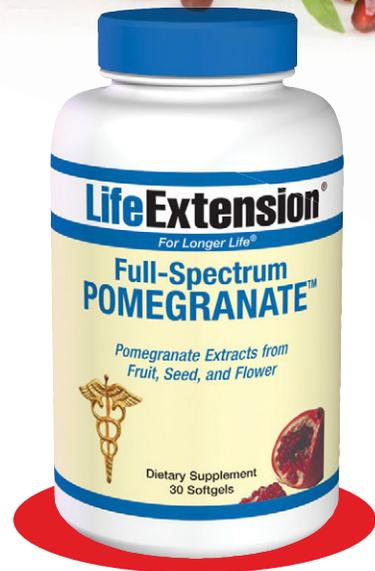
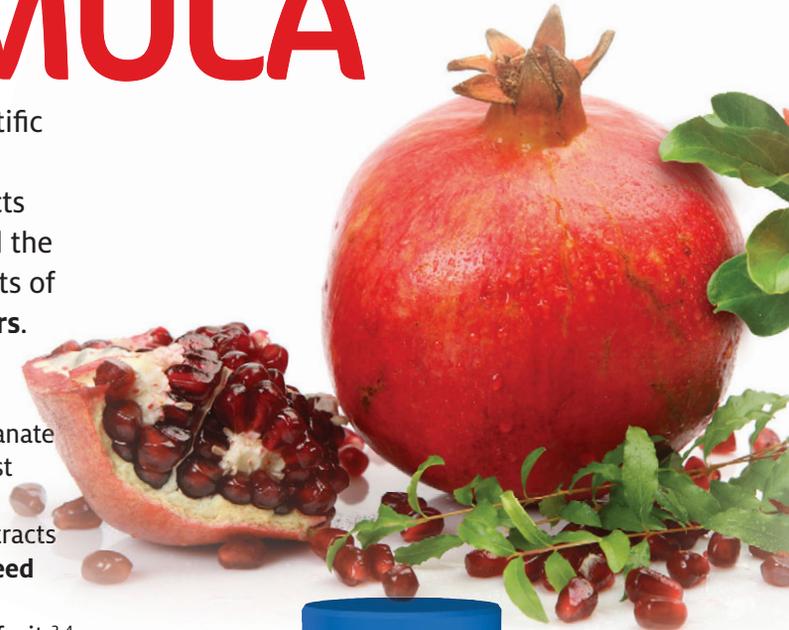
One softgel of **Full-Spectrum Pomegranate™** contains:

POMELLA® Pomegranate	400 mg
<i>(Punica granatum)</i> Extract (fruit) [std. to 30% punicalagins (120 mg)]	
PomComplete™ Pomegranate	137.5 mg
<i>(Punica granatum)</i> Blend [flower extract and seed oil (standardized to 22% (30 mg) punicic acid)]	

Full-Spectrum Pomegranate™

A bottle containing 30 softgels of **Full-Spectrum Pomegranate™** retails for \$24. If a member buys four bottles during **Super Sale**, the price is reduced to **\$14.18** per bottle. **Item # 01423**

Contains soybeans.



Item # 01423

To order **Full-Spectrum Pomegranate™**,
call **1-800-544-4440**
or visit www.LifeExtension.com

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

BY SILAS HOFFMAN

Novel Support for Chronic Heart Failure, Arrhythmia, and Coronary Artery Blockage

We are losing the battle against the leading preventable cause of premature death: **heart disease**.

In 2005, **one** in **eight** death certificates—representing 292,214 deceased Americans—mentioned heart failure.¹

Prescription drugs and surgery are routine treatments, but there remains a need for agents that modulate **multiple** cardiac risk factors.

The term **cardiotonic** refers to any compound that bolsters normal heart function even under less-than-ideal conditions. Scientists have identified two botanical extracts that deliver this cardiotonic protection!²⁻⁴

Extracts from the **hawthorn** leaf and flower and those from an Indian shrub called **arjuna** have long been used in traditional medical systems for heart and circulatory conditions.⁴⁻⁹

Scientific studies now demonstrate that these extracts generate a **dual effect**: they help to prevent—and reverse the indicators of *existing* **cardiovascular disease**.^{2,10-13} >





Hawthorn: New Efficacy Data

Hawthorn (*Crataegus*) is a genus of small, flowering trees in the rose family, closely related to apples and pears.^{3,4} For centuries, traditional medical systems have used the fruit, leaves, and bark for various applications on heart health.⁵⁻⁹

Hawthorn extracts are widely prescribed in Europe for managing mild heart failure, either alone or as add-on therapy with standard drugs. In Germany, hawthorn extracts are recognized as drugs. Hawthorn extracts are referred to as a *cardiotonic* because of their ability to increase the heart's muscle tone.²

Hawthorn extracts contain dozens of *biologically active molecules* including *flavonoids and polyphenols*. The hawthorn polyphenol most thoroughly studied in humans is *oligomeric procyanidins*. A typical hawthorn dose provides between **30 mg** and about **340 mg** a day of *procyanidins*.^{5,7,14}



Hawthorn

A 2012 study identified an effect of hawthorn that enables it to suppress potentially deadly **blood clotting signals** within arteries.¹² In addition, hawthorn displays **anti-inflammatory** effects in blood vessels,¹⁴ and improves the health of **endothelial cells** that line arteries.¹⁵ The **endothelium** is where **oxidized**

LDL first accumulates, setting the stage for **atherosclerosis** and **heart attack**.

Hawthorn extracts specifically counteract many of the underlying biological responses that predispose aging humans to heart attack. Hawthorn has additional characteristics that **strengthen** and **tone** the **heart muscle**,² making it a potential adjuvant therapy in the face of **congestive heart failure**.

Arjuna: Broad-spectrum Cardiac Protection



Arjuna

The arjuna tree is native to India, where its bark has been used in Ayurvedic medicine for centuries, mainly as a cardioprotective.⁴ Like hawthorn, **arjuna extracts** contain a wide variety of active biomolecules, especially polyphenols and flavonoids.^{4,13}

Arjuna extracts exert anti-inflammatory effects that help combat the excessive immune response that leads to arterial plaque and blood vessel occlusions.¹⁶⁻¹⁸ And they help reverse abnormal lipid (cholesterol) profiles that contribute to plaque formation.^{16,19}

In addition, arjuna extracts enhance heart muscle tone, improving its “squeeze” and increasing the amount of blood it can pump each second without exhaustion.^{13,20,21}

Like hawthorn, arjuna is also considered cardioprotective, that is, it bolsters normal heart function even under less-than-ideal conditions.

Coronary Artery Disease

Coronary heart disease results from narrowing of the main arteries that supply blood to the heart muscle itself. Those arteries, over time, become oxidant-damaged, chronically inflamed, and lipid-laden until their smaller diameter reduces the amount of blood that can flow to the laboring heart muscle.

That restricted blood flow impairs heart muscle cells’ pumping ability. Coronary artery occlusion is also painful, producing the symptom we call “angina,” or pain in the chest, abdomen, and/or left arm. Many people, especially women with cardiac ischemia, feel no clear symptoms at all, however.



TABLE 1: The Toll of Cardiovascular Disease in the US^{1,52}

Coronary Heart Disease	Congestive Heart Failure
One in 5 deaths in the US	Cited on 1 in 8 death certificates
Total mortality/year: 445,687	Contributing cause of death: 292,214
New heart attacks/year: 785,000	New diagnoses/year: 670,000
Additional new “silent” attacks/year: 195,000	Prevalence: 5.8 million
Recurrent heart attacks/year: 470,000	Total cost: \$39.2 billion

When a tiny blood clot blocks a jagged-narrowed coronary artery, the result is often a full-blown heart attack, with complete loss of blood flow to an area of heart muscle. If the damaged area is large enough, the victim dies or becomes a cardiac cripple.

If the area damaged by a coronary artery occlusion is small enough or if sufficient blood flow is restored from adjoining areas of heart muscle, the victim survives, but with scar tissue.

If oxygenated blood flow is renewed, which is essential to survival, the result is a new surge of pro-oxidant damage to already weakened muscle. This “**ischemia-reperfusion injury**” can complicate recovery and induce arrhythmias that take the lives of those who, with a stronger heart at baseline, might have survived the original attack.

Hawthorn extracts rich in oligomeric **procyanidins** have multiple direct actions on the heart before, during, and even after an ischemic event. These beneficial actions, even under challenging laboratory conditions, enhance survival.

Hawthorn scavenges reactive oxygen species (ROS) while enhancing heart muscle cells’ natural antioxidant defenses.^{22,23} Animal studies reveal that hawthorn extracts **boost coronary blood flow by up to 70%**.²⁴

When ischemia occurs, hawthorn extracts prevent ischemia-reperfusion injury to heart muscle cells both through antioxidant effects and by changing how protective genes are expressed in response to the threat.^{23, 25-28} Ischemic hearts pre-treated with hawthorn show improved function and smaller areas of dying tissue, reducing the **mortality rate** in animal studies **five-fold**.²⁶

Despite some theoretical interactions with cardiovascular drugs, none have been reported in the thousands of patients who have used hawthorn extracts for heart health.^{5,6,8,31,32}

Arjuna Complements Hawthorn

Arjuna extracts can amplify and complement the properties of hawthorn in prevention of coronary artery disease. They were shown to have modest lipid-lowering effects at doses used in ancient Indian medicine.³³ In animal studies, arjuna reduces total and LDL cholesterol, as well as triglycerides, raises protective HDL, and limits the size and number of atherosclerotic lesions in the aorta.^{19,34,35}

Humans treated with **500 mg** daily of arjuna tree bark powder experienced a total cholesterol drop of **9.7%**.³⁶ The same dose of an extract from the bark, given every 8 hours, improved **endothelial function**, the ability of vital arteries to dilate and increase



What You Need to Know

Botanical Extracts Provide Peak Cardio Protection

- Despite advances in medications, surgery, and supportive devices, cardiovascular disease remains the leading killer of Americans.
- Much of the damage that leads to cardiovascular disease arises from ancient adaptations no longer needed in the modern world.
- Two botanical extracts, from hawthorn and arjuna, naturally, gently, and effectively counteract those out-of-date adaptations, protecting heart and vessel tissue against oxidation, coagulation, inflammation, and fat accumulations.
- Alone or in combination with conventional heart medications, these botanicals offer superior cardiac toning, enhanced performance, and reduced mortality.
- Consider supplementing with hawthorn and arjuna extracts as part of your cardio-protective regimen.



Hawthorn's "Other" Cardiac Benefits

Protecting against Arrhythmia

A potentially lifesaving effect of hawthorn extract is a substantial reduction in the deadly arrhythmias, or irregular heartbeats, that often follow or accompany ischemia and reperfusion.²² Supplementation prior to ischemia-reperfusion reduced the prevalence of "malignant" arrhythmias (ventricular fibrillation and flutter) by **six-fold** in one animal study.²⁹

Strengthening Heart Muscle

Hawthorn's reputation as a cardiotonic is borne out by studies that demonstrate an increase in the *contractile force* of ailing human heart muscle following administration of the extracts.² Even sections of muscle from failing human hearts being replaced by transplants respond favorably to hawthorn treatment, demonstrating a massive "squeeze enhancing" effect similar to that produced by digitalis and other plant-derived glycoside medications.²

Modest LDL Reduction with Hawthorn

In a human trial in diabetics, the addition of a hawthorn extract to routine medications had modest lipid-lowering effects, with **400 mg** three times daily producing a reduction in LDL cholesterol from **105 to 93 mg/dL**.³⁰ That same dose reduced *neutrophil elastase*, an enzyme released from inflammatory cells that weakens connective tissue in heart and lung tissue, and is a major contributor to later heart failure.³⁰

Symptoms of heart failure vary greatly, but may include fluid retention, swelling of the extremities, difficulty breathing, and, importantly, reduction in exercise tolerance.

blood flow, by **9.3%** in smokers, who typically have terrible endothelial function.³⁷

Arjuna has exceptional efficacy in reducing episodes of angina, both alone and in combination with standard anti-angina drugs such as *isosorbide mononitrate*, in patients with stable angina (chest pain induced by activity with absence of prolonged pain at rest). Reductions in anginal frequency of **50%** or more have been noted in patients taking **200 to 500 mg** of *arjuna* daily.^{10,38-40}

Studies also reveal a prolongation of exercise time before echocardiogram abnormalities on the treadmill test in subjects supplementing with arjuna extracts; all patients remained on their regular cardiac medications as well.^{38,39} One dramatic study demonstrated that both arjuna and the drug, *isosorbide* reduced anginal attacks significantly, but only arjuna-supplemented patients had significant improvement in their hearts' blood pumping abilities.¹⁰

Like hawthorn, *arjuna extracts* possess powerful cardio-protective characteristics that can save heart muscle cells during ischemia or ischemia-reperfusion injury.¹⁸

Multiple human trials with *arjuna* have demonstrated no serious side effects or drug interactions.^{38,39}

Chronic Heart Failure

Heart failure describes a condition in which the heart lacks the ability to deliver sufficient blood flow to meet existing needs, both at rest and during exertion.

As the failing heart works harder and harder, it grows in size, but its muscle stretches eventually to the point at which it can no longer keep up with the blood returning from the circulation. That produces “congestion,” blood backing up into the liver and other organs (right-sided heart failure), or into the lungs (left-sided heart failure). These conditions are often referred to as **congestive heart failure**.

Symptoms of heart failure vary greatly, but may include fluid retention, swelling of the extremities, difficulty breathing, and, importantly, reduction in exercise tolerance. Table 2 shows the standard classifications of heart failure according to the New York State Heart Association’s definitions.⁴¹

Numerous clinical studies demonstrate hawthorn’s effectiveness alone or as add-on therapy to regular drugs, especially for mild (Class II) heart failure.

Hawthorn extracts improve a host of objective measures of heart failure, including cardiac oxygen consumption, blood pressure, heart rate, percent of blood pumped per heartbeat, percent of heart muscle contracting (as seen on echocardiograms).⁴²⁻⁴⁶ Placebo recipients in these studies often suffer deterioration during the study period.⁴³

Dramatic improvements in exercise tolerance on bicycle or treadmill testing are attributed to **hawthorn** supplementation. Patients experience increased exercise time until ECG abnormalities, increased maximal workload, fewer arrhythmias, and fewer extra heartbeats.⁴⁴⁻⁴⁸

Patients with Class II heart failure who supplement with **hawthorn** can also expect improvements in their symptoms; they have less shortness of breath, ankle swelling, fatigue, and palpitations, while enjoying improved overall quality of life.^{43,44,47-49}

In one study, **83%** of patients taking hawthorn had less ankle swelling, and **50%** had a reduced need to urinate at night (a common complaint in heart failure).⁴⁴ That study also showed that nearly **66%** of patients felt better after **24 weeks** of supplementation.

Perhaps the most compelling data come from a study showing a **41%** reduction in the risk of **sudden cardiac death** among heart failure patients, with the best baseline heart performance among those who were taking **hawthorn**.⁵⁰ Sudden death is the most-feared and unpredictable consequence of chronic heart failure.

In evaluating dosing of hawthorn extracts, it’s important to compare not only the dose in milligrams in the supplement, but also the total amount of the vital *oligomeric polyphenols* (OPC) that’s delivered.

Typical doses of **hawthorn extracts** to achieve these effects range from **80 to 450 mg** twice daily, which deliver **30 to 169 mg/day** of *oligomeric polyphenols*, though one study of **1,800 mg/day** (providing **338 mg/day** of OPC) demonstrated safety and improved patient symptom ratings in a group of people with Class III (moderate severity) heart failure.^{42,44}

Hawthorn’s effects are so powerful that theoretical concerns have been raised about its interactions with other heart medications, especially the “cardiac glycosides” such as *digitalis* and *digoxin*. A human volunteer trial, however, demonstrated no detectable interactions after 3 weeks of treatment with digoxin **0.25 mg/day** and hawthorn **900 mg/day** (delivering OPC at **169 mg/day**).⁵¹

TABLE 2: New York Heart Association Classification of Heart Failure⁴¹

Class	Patient Symptoms
Class I (Mild)	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or shortness of breath.
Class II (Mild)	Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitation, or shortness of breath.
Class III (Moderate)	Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes fatigue, palpitation, or shortness of breath.
Class IV (Severe)	Unable to carry out any physical activity without discomfort. Symptoms of cardiac insufficiency (fatigue, palpitations, shortness of breath) at rest. If any physical activity is undertaken, discomfort is increased.

Arjuna extracts produce even more remarkable improvements in chronic heart failure patients. One study evaluated arjuna at a dose of **500 mg** every 8 hours in patients with severe, Class IV heart failure, not responding to standard medications, which were continued throughout the study.¹¹ Supplemented patients, but not controls, had improvement in all clinical signs of heart failure, and had better objective outcomes on echocardiograms, including reductions in heart volume and pressures, and increases in the amount and percent of blood pumped with each beat.

In that study, **100%** of arjuna-supplemented patients improved from Class IV (basically bedridden) to Class III (moderate) heart failure, an enormous change.¹¹ Perhaps even more compelling is the finding that, by the study's 4th month, **75%** of the arjuna-supplemented patients had moved down to Class II (from Class III). No patients in the placebo group experienced such remarkable progress.

In another trial, Class III patients on the same dose of arjuna achieved similar echocardiogram results. In this study, all arjuna-supplemented patients improved all the way to Class I heart failure, which is defined as having no symptoms of heart failure at all.¹⁰

None of these studies detected meaningful side effects from the use of arjuna as an add-on therapy.

Summary

Tens of millions of Americans suffer coronary artery blockage, arrhythmia, and/or congestive heart failure. Most don't know they are slowly developing these problems as a consequence of normal aging.

Life Extension® members take nutrients like **CoQ10, PQQ, carnitine, lipoic acid,** and **fish oil** to help protect against the epidemic of heart disease (and stroke) that strikes so many maturing humans.

Hawthorn and **arjuna extracts** function via novel cardio-protective mechanisms that have demonstrated remarkable efficacy in the clinical setting.

These extracts, alone or as add-on therapy to existing heart medications, have proven safe and effective in slowing and even reversing the deadly progress of angina, heart attack, and chronic heart failure. Those with preexisting cardiovascular health issues should consider supplementing with these botanical agents, after consultation with their healthcare provider. ●

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

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MORE THAN JUST RESVERATROL

Life Extension® introduced **resveratrol** in 2003 to favorably alter **genes** that respond to **calorie restriction**. Since then, *additional* compounds have been discovered that enable cellular **DNA** to exhibit more youthful **gene expression**.

Just two capsules a day of **CR Mimetic Longevity Formula** supply:

Trans-Resveratrol is the form of resveratrol used in scientific studies documenting remarkable longevity-enhancing effects. You would have to drink many bottles of red wine to obtain a fraction of the **trans-resveratrol** (250 mg) found in **CR Mimetic Longevity Formula**.

Quercetin inhibits the actions of enzymes in the liver from rapidly breaking down resveratrol in the bloodstream, thus enabling **resveratrol** to remain active **longer** in the body.

Fisetin is an extract from strawberries that “switches on” cell signaling molecules that support youthful expression of longevity genes and works in **synergy** with resveratrol. You would have to eat two cups of **strawberries** to obtain the amount of **fisetin** contained in the **CR Mimetic Longevity Formula**.



Item # 01429

Trans-Pterostilbene directly activates genes “**downstream**” from the sites of resveratrol’s action, providing a powerful **complementary stimulus** to resveratrol’s ability to induce *youthful* gene expression. You would have to eat **135** cups of **blueberries** to obtain the amount of **trans-pterostilbene** contained in the **CR Mimetic Longevity Formula**.

Grape seed extract provides **proanthocyanidins** that have multiple health benefits and work together with resveratrol to trigger favorable **gene expression** changes.

Theaflavins from **black tea** suppress the pro-inflammatory transcription factor NF-kB¹ and stimulate the longevity factor Forkhead box 1 (FOXO1) in invertebrate and mammalian cells.²⁻³ You would have to drink **12** six-ounce cups of black tea each day to obtain the amount of theaflavins contained in **CR Mimetic Longevity Formula**.

Two capsules a day of **CR Mimetic Longevity Formula** provide:

Trans-Resveratrol	250 mg	Trans-Pterostilbene	3 mg
Black Tea Theaflavins (decaf.)	300 mg	Fisetin	48 mg
Grape Seed Polyphenols	50 mg	Quercetin	150 mg

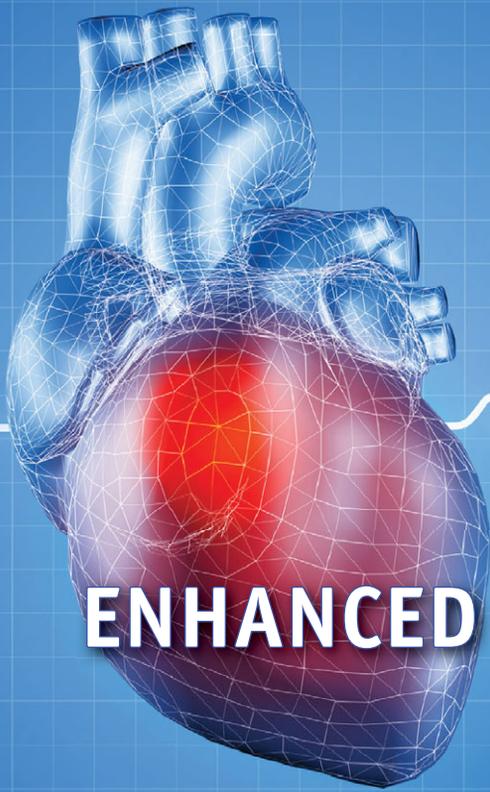
A bottle containing 60 vegetarian capsules of **CR Mimetic Longevity Formula** retails for \$39. If a member buys four bottles during **Super Sale**, the price is reduced to just **\$24.30** per bottle.

The cost of taking the botanical extracts individually would be significantly higher compared to the optimal doses found in **CR Mimetic Longevity Formula**.

References 1. *Mol Nutr Food Res.* 2011;55:198-208 • 2. *Cancer Res.* 2000;60:6465-71 • 3. *Aging Cell.* 2008;7(1):69-77.

To order **CR Mimetic Longevity Formula**
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.



ENHANCED HEART MUSCLE FUNCTION

Cardiotonics have traditionally been used to improve heart function and vitality. Formulated for optimum heart muscle health, **Cardio Peak™ with Standardized Hawthorn and Arjuna** provides dual **cardiotonic** support.

Extensive research demonstrates that the botanical extracts **Hawthorn** and **Arjuna** deliver optimum support for normal heart muscle function and coronary artery health.¹⁻¹⁷

Hawthorn: Peak Cardiotonic Support

Used for centuries in Europe for heart health, the cardiotonic effects of **Hawthorn** extract have been well documented in numerous clinical trials.^{1,9-12}

Hawthorn contains specific *bioflavonoid complexes* targeted to help promote normal circulation and efficient heart muscle function.^{2,5,13}

Studies indicate that the constituents in Hawthorn powerfully support:

- Strong *contractile force* of human heart muscle.³
- Protection for heart muscle cells from oxidant damage.¹²
- Normal gene expression to promote cardiovascular health.^{2,4,5}
- Improved cardiovascular performance.¹¹

Arjuna: Boosting Heart-Health Benefits

Traditionally used for cardiovascular health, **arjuna** extract *complements* the effects of hawthorn in support of enhanced heart function.¹⁴⁻¹⁷ A number of scientific studies have shown that arjuna delivers strong support for:

- Enhanced heart muscle tone, improving its “squeeze” and increasing the amount of blood it can pump each second without exhaustion.¹⁶
- Healthy endothelial function.⁸
- Improved exercise endurance.¹⁷

A comprehensive program that includes diet, exercise, and lifestyle changes is important to your cardiovascular health. For unique **cardiotonic support** for a strong and healthy heart, **Cardio Peak™ with Standardized Hawthorn and Arjuna** may become a key element in your daily regimen!

To order **Cardio Peak™ with Standardized Hawthorn and Arjuna**, call 1-800-544-4440 or visit www.LifeExtension.com

The suggested **twice daily** dosage of **2 capsules** of **Cardio Peak™ with Standardized Hawthorn and Arjuna** provides:

Rejuna™ Arjuna (*Terminalia arjuna*) **1,500 mg**
10:1 extract (bark) [std. to 40% polyphenols (600 mg)]

Hawthorn-Derived Oligomeric Proanthocyanidins (OPCs) **60 mg**
[from standardized Hawthorn (*Crataegus monogyna* and *Crataegus laevigata*) extract (leaf and flower)]

A bottle of 120 vegetarian capsules of **Cardio Peak™ with Standardized Hawthorn and Arjuna** retails for \$36. If a member buys four bottles during **Super Sale**, the price is reduced to **\$21.60** per bottle.



Item# 01700

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Discount Prices For Premium-Quality Products



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

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

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

	Our Low Retail Price	SUPER SALE Member-Volume Discount Price Per Bottle
Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract 120 softgels, Item # 01482 Super purified EPA/DHA fish oil plus sesame lignans and potent olive fruit extract to provide critical omega-3 fatty acids and essential components of the Mediterranean diet.	\$32	\$16.81 (ten-bottle purchase)
Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™ 100 mg, 60 softgels, Item # 01426 The superior ubiquinol form of CoQ10 plus a natural compound (shilajit) shown to double mitochondrial CoQ10 levels.	\$62	\$35.10 (ten-bottle purchase)
CoffeeGenic™ Weight Management™ with Green Coffee Extract • 90 capsules, Item # 01707 Green Coffee Extract (GCA™) (350 mg) plus irvingia, chromium, and green tea extract.*	\$48	\$28.35 (four-bottle purchase)
Vitamin D3 • 5,000 IU, 60 softgels, Item # 01713 High-potency vitamin D in a new softgel to provide greater absorption into the bloodstream.	\$11	\$6.68 (four-bottle purchase)
Ultra Natural Prostate Formula with AprèsFlex™ & Standardized Lignans 60 softgels, Item # 01695 Comprehensive prostate protection utilizing nettle, pygeum, saw palmetto, boswellia, and other botanical extracts plus boron.	\$38	\$21.60 (twelve-bottle purchase)
Super K with Advanced K2 Complex • 90 softgels, Item # 01724 More potent formula now includes 200 mcg of long-acting MK-7 form of vitamin K2 plus 1,000 mcg of K1 and 1,000 mcg of the MK-4 form of vitamin K2.	\$30	\$18.23 (four-bottle purchase)
PQQ Caps with BioPQQ™ • 10 mg, 30 vegetarian capsules, Item # 01500 Promotes mitochondrial biogenesis (generation of new mitochondria) in aging cells.	\$24	\$14.85 (four-bottle purchase)
DHEA (Dehydroepiandrosterone) • 25 mg, 100 capsules, Item # 00335 A hormone that declines with aging, benefits overall health .	\$18	\$10.13 (four-bottle purchase)
Mitochondrial Energy Optimizer with BioPQQ™ • 120 capsules, Item # 01568 To maintain healthy cellular function, protein structural integrity, and mitochondrial biogenesis.	\$94	\$56.70 (four-bottle purchase)
Super Bio-Curcumin® • 400 mg, 60 vegetarian capsules, Item # 00407 Super-absorbable formulation promotes healthy lipids, joint function, and healthy DNA. Absorbs up to <u>seven</u> times greater than conventional curcumin.	\$38	\$23.63 (four-bottle purchase)
Super Zeaxanthin with Lutein, Meso-Zeaxanthin, and C3G 60 softgels, Item # 01685 Supports night vision and macular density.	\$22	\$13.37 (four-bottle purchase)
Optimized Resveratrol with Synergistic Grape-Berry Actives 250 mg, 60 vegetarian capsules, Item # 01430 High potency trans-resveratrol with quercetin, plus <i>trans</i> -pterostilbene and fisetin to support DNA "longevity genes." One per day resveratrol formula.	\$46	\$27.90 (four-bottle purchase)
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Cognitex with NeuroProtection Complex • 90 softgels, Item # 01697 Optimal support for the brain. Includes glyceryl-phosphoryl-choline, vinpocetine, phosphatidylserine, Sharp-PS® GOLD PS-DHA, uridine 5'-monophosphate, and others. Available with or without pregnenolone.	\$74	\$43.20 (twelve-bottle purchase)
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Reishi Extract Mushroom Complex • 60 vegetarian capsules, Item # 01708 Standardized mushroom extract to restore and regulate immune system function.	\$30	\$18.23 (four-bottle purchase)
Triple Action Cruciferous Vegetable Extract 60 vegetarian capsules, Item # 01468 Comprehensive cruciferous plant extract formulation, with I3C, DIM, apigenin, and other DNA-protecting vegetable concentrates.	\$24	\$14.85 (four-bottle purchase)
Prelox® Natural Sex for Men® • 60 tablets, Item # 01373 Supports healthy endothelial function and blood flow for maximum male performance.	\$52	\$32.40 (four-bottle purchase)
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Extraordinary Enzymes • 60 capsules Item # 01706 Powerful digestive support to promote nutrient absorption while minimizing breakdown of starches into sugar.	\$26	\$16.20 (four-bottle purchase)
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Natural Stress Relief • 30 vegetarian capsules, Item # 00987 With lemon balm extract to help relieve stress and sleeplessness, and pure L-theanine to promote relaxation without drowsiness.	\$28	\$16.20 (four-bottle purchase)
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Black Cumin Seed Oil with Bio-Curcumin® • 60 softgels Item # 01710 Dual support for a balanced immune and inflammation response.	\$32	\$20.25 (four-bottle purchase)
Super Booster Softgels with Advanced K2 Complex • 60 softgels, Item # 01680 A convenient one per day softgel that includes optimal potencies of gamma-tocopherol, sesame lignans, lycopene, lutein, ginkgo, chlorophyllin, and both forms of vitamin K2.	\$42	\$25.65 (four-bottle purchase)
Neuro-Mag™ Magnesium L-Threonate • 90 vegetarian capsules Item# 01603 Optimal form of magnesium to protect synaptic density of neurons.	\$40	\$24.30 (four-bottle purchase)

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

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BY EMILY STEINER

How *Reishi* Combats Aging

Over the past several decades, research has focused on analyzing the hundreds of unique compounds found in the Reishi mushroom. Just this year alone, three new compounds were discovered. With each new finding, intriguing medical applications for Reishi have emerged.

There is now a wealth of impressive data that demonstrates Reishi's life-extending properties,^{1,2} its ability to stimulate brain neurons,³ search and destroy cancer cells,⁴ and prevent the development of new fat cells in obese individuals.⁵ As an example of growing science supporting Reishi, researchers using laboratory mice have detailed life span extension of 9% to more than 20%—the equivalent of 7 to nearly 16 years in human terms.^{2,6,7}

As if these targeted benefits were not sufficient, Reishi's bioactive compounds show a therapeutic effect on asthma,⁸ allergies,⁹ autoimmune diseases,¹⁰⁻¹⁵ Alzheimer's¹⁶ and Parkinson's diseases,¹⁷⁻²¹ diabetes,²²⁻²⁶ liver failure,²⁷⁻³⁶ and more.

Given Reishi's complex composition of bioactive compounds, there is still more to discover. In this report, we will bring you up to date on how Reishi successfully targets a broad spectrum of factors involved in pathological aging. >





Multiple Components Target Aging Mechanisms

Reishi mushrooms have been used for medicinal purposes for at least 2,000 years.³⁷ The mushrooms were known to the ancients as “the mushroom of immortality”³⁷—and for good reason. They had the reputation of promoting health and longevity, boosting the immune system, and reducing the risk of life-shortening conditions such as cardiovascular disease and cancer.³⁸⁻⁴¹ Science has finally validated this traditional wisdom.

Originally, Reishi mushrooms were rare and expensive,^{38,42} but now advances in cultivation techniques have made these medicinal mushrooms more available, which has led to an explosion of research on their properties and components.^{38,42}

Studies have shown that Reishi mushrooms can contribute to longer life spans.^{1,2} They can help manage some of today’s most troubling age-related conditions, including autoimmune diseases, neurodegenerative disorders, diabetes, liver disease, cancer, and more.

How is it that this simple mushroom can have such wide-ranging health effects? Keep in mind that there isn’t one single cause of aging and disease. Numerous factors contribute to these conditions—meaning that in order to combat them, you need to fight them from a multi-targeted approach. That’s exactly what makes Reishi mushrooms so powerful. The mushroom itself contains hundreds of biologically active molecules—all of which work together to have such broad-reaching health benefits.³⁷

Researchers have identified three specific compounds that are essential to Reishi's powerful antioxidant and antiaging effects:

- 1. Polysaccharides** have anticancer effects based on their ability to prevent abnormal blood vessel formation and to boost immune system function.^{40,42}
- 2. Triterpenes** protect the liver, lower blood pressure and cholesterol, prevent platelet clumping that leads to heart attack and stroke, fight allergic responses triggered by histamine, and also possess anticancer activity.⁴²
- 3. Ganoderma lucidum peptide** is a unique protein that has remarkably potent antioxidant characteristics that are still being unraveled.⁴³

But what makes Reishi mushroom beneficial to so many varied aspects of your health are its actions on different targets in your body. The actions triggered by Reishi mushrooms produce important changes that may contribute to their promotion of longevity. Reishi extracts are known to:

- Protect cellular DNA from oxidant damage that contributes to aging and cancer.⁴⁴
- Protect mitochondrial DNA and the mitochondria themselves from oxidant damage that weakens their energy-producing abilities and makes them inefficient, another major cause of aging.⁴⁵⁻⁴⁷
- Increase levels and activity of a large suite of natural intracellular antioxidant molecules, resulting in reduced oxidation of cell membranes that lead to aging and its related diseases.^{38,48}
- Protect tubule cells from oxidant damage that leads to kidney failure.⁴⁹
- Increase expression of a key *longevity gene* and promote an increased life span in species ranging from yeasts, to primitive worms, to mammals such as mice.^{1,2,50,51}

Several studies have shown that Reishi is one of the most powerful mushrooms with regard to antioxidant characteristics.^{52,53} Reishi mushrooms boost total antioxidant capacity, an important measure of the vigor with which they fight oxidant damage.^{52,54}

In a human study, Reishi mushrooms were given to healthy volunteers as a single **1,100 mg** dose.⁵⁴ Plasma antioxidant capacity rose rapidly to a peak at 90 minutes, while urine antioxidant capacity (a measure of

what has been in the body) rose by **29%** after 3 hours. Neither study showed any evidence of toxicity or side effects.³⁹

Reishi's many mechanisms of action are what allow it to have such a robust impact on such a wide array of age-related health threats. Let's now look at some of the most promising areas of research.

Breaking News on Reishi Mushrooms and Cancer Prevention

New compounds are being discovered within extracts of Reishi mushroom on a regular basis. At least 3 were identified in late 2012 alone.⁵⁵ These discoveries are shedding light on Reishi extracts' multi-targeted anti-cancer properties.

Most intriguing are findings that add to our knowledge about Reishi and the phenomenon of *immune surveillance*. New cancer cells appear in your body every day, but your healthy immune system normally searches these out, quickly activating killer cells to destroy developing cancers before they can form tumors.

Advancing age, coupled with the onset of other chronic illnesses and exposure to various environmental toxins (and even some medications), means that your immune system's ability to carry out immune surveillance wanes. And if just one abnormal, cancer-prone cell escapes detection and destruction, it can develop into a full-blown malignancy with tremendous swiftness.

There's an abundance of data on ways that Reishi extracts boost immune surveillance and enhance detection and elimination of emerging cancer cells from the body.⁵⁶ And in late **2012**, several new studies revealed that these mushrooms have substantially deeper and more advanced mechanisms than had been previously suspected. The mechanisms of how Reishi identifies and then attacks cancer cells are extremely sophisticated and effective. We know that cancer cells evade immune system surveillance by "hiding" their abnormal surface markers.⁴ These types of molecular changes not only permit primary cancer to arise, but also contribute to relapses of cancer following chemotherapy.⁵⁷

Reishi extracts force cancer cells to reveal their telltale markers, flagging them for destruction by immune killer cells.⁴ At the same time, Reishi extracts induce the production of specific molecules that the immune system needs to complete the killing process.⁴ Ultimately, Reishi extracts enhance the killing of cancer cells by normal immune killer cells and reduce the amount of chemotherapy drugs required to finish the job.^{57,58}

In addition to their impressive immune-surveillance-boosting properties, Reishi extracts have numerous other ways of attacking cancer:

- Reishi compounds, particularly the triterpenes and polysaccharides, limit tumors' growth rate by blocking the abnormal reproductive cycles of cancer cells.⁵⁹
- Some of these compounds are directly toxic to cancer cells, while sparing healthy tissue.^{60,61}
- Reishi compounds inhibit metastatic processes and decrease the expression of genes involved in cancer cell survival, proliferation, invasion, and metastasis.⁶¹
- Reishi compounds also trigger the programmed cell death called apoptosis that's suppressed in malignant cells.^{55,60-62}

Together, all of these effects of Reishi mushrooms are shown to reduce the size and growth rates of human tumors, both in animals and in human clinical trials.

The most dramatic impact has been shown in colorectal cancer, which is the second leading cause of cancer death among cancers that affect both men and women.⁶³

Clinical studies show that Reishi extracts suppress the development of adenomas, which are pre-malignant masses found in the large intestine.⁶⁴

Meta-Analysis Conducted on Reishi for Cancer Treatment

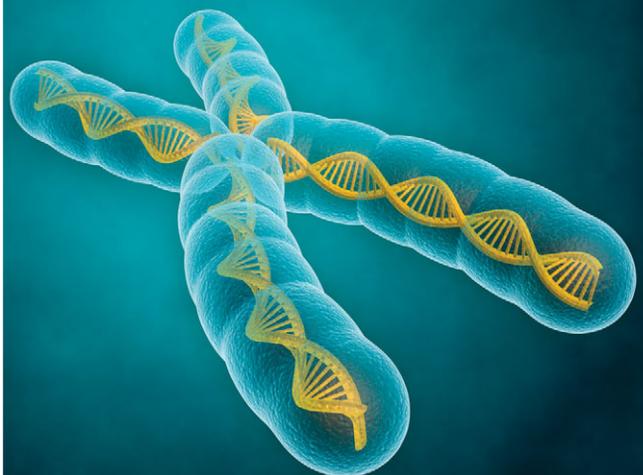
An evaluation of all available clinical trials on the use of Reishi in cancer treatment was published in **June 2012**.

While there was insufficient data to demonstrate efficacy Reishi by itself, when Reishi was given alongside **radiation** and/or **chemotherapy**, patients were **50% more** likely to respond positively compared to those given chemo/radiation alone. The results in cancer patients receiving Reishi showed the expected increases in immune cells known to enhance tumor response and stimulate host immunity.⁸²

We at Life Extension® look forward to better quality methodological trials to clarify the value of Reishi in adjunctive cancer treatment.

Remarkable Benefits of Reishi

- Recent studies show that Reishi mushrooms have hundreds of components in three distinct classes of bioactive molecules, making them ideal for combating the complex and multifactorial diseases we face with advancing age.
- Reishi extracts prolong life spans in animal experiments by 9% to more than 20%.
- Reishi boosts the immune system's vigilance against cancer cells, potentially reducing the risk of developing a detectable and deadly tumor.
- Reishi extracts can suppress an overly vigorous immune response, helping to quell symptoms of allergies, asthma, and autoimmune diseases.
- Independent of their immune-modulating effects, Reishi mushrooms' active molecules are showing promise in the battle against neurodegenerative diseases, obesity and diabetes, and liver disease.
- If there is such a thing as the "ideal" supplement, capable of attacking multiple complex diseases each with multiple causative factors, Reishi mushrooms are an outstanding candidate.





Reishi Balances the Immune System

Reishi mushrooms have a well-known ability to beneficially modulate the immune system.^{11,65-67} The mushrooms' ability to boost immunity is the source of their advanced cancer- and infection-fighting properties. But it is equally important to keep your immune system from overreacting or turning on itself, as is the case with autoimmune diseases and allergies. Reishi mushrooms have demonstrated the ability to modulate the delicate balance necessary for a healthy immune system. Studies have shown that Reishi mushrooms can reduce the overactive immune response that occurs in conditions such as allergies, asthma, and autoimmune diseases.

The polysaccharides and triterpenes found in Reishi mushrooms act at multiple targets in the cascade of events leading to inflammation and excessive immune response.^{17,67,68}

Reishi extracts inhibit the release of histamine from specialized immune cells called "mast cells."⁶⁵ They have the ability to reduce the activity in nerves that transmit the itch sensation to the brain after a mosquito bite or similar itchy stimulus.^{69,70}

In animal models, Reishi extracts were able to sharply reduce the symptoms associated with allergies, such as rhinitis (watery, itchy nose) and mosquito bites.⁹ Studies also show that Reishi extracts can

reduce "airway hyper-responsiveness," the "twitchy" smooth muscle responses in the lung bronchi that trigger an asthma attack.⁸

Reishi extracts also show promise for the management of the underlying immune imbalance that leads to autoimmune diseases.¹⁰⁻¹⁵

Reishi Promotes Neuroprotection

Reishi extracts were found to stimulate the production of **nerve growth factor**, which in turn supports the rapid development of healthy neurons and enhances their mitochondrial function.³

Reishi's powerful antioxidant and anti-inflammatory properties make these mushrooms attractive candidates for preventing neurodegenerative diseases such as Alzheimer's and Parkinson's. Both of these diseases are driven by oxidative stress and inflammation.

The triterpenes and polysaccharides from the mushrooms reduce the oxidative impact of destructive proteins such as **Abeta**, the chief trigger of Alzheimer's disease,¹⁶ and they protect brain cells from the inflammation known to cause Parkinson's disease.¹⁷⁻²¹

Studies reveal that supplementing with Reishi mushrooms has beneficial effects for stroke victims. First, it can limit the size of the stroke-damaged area in the brain, which helps limit behavioral and functional damage caused by the stroke.⁷¹ Second, Reishi mushrooms protect brain tissue from **hypoxia/reperfusion injury**, the "one-two" punch of oxygen starvation followed by excessive oxidation that produces most of the damage in the brains of stroke victims.¹⁹

But as valuable as these benefits are, nowhere are the effects of Reishi mushroom extracts more clear than in their impact on diabetes-related cognitive disorders. In animal studies, Reishi spores alleviated diabetes-induced oxidative stress and mitochondrial dysfunction in the hippocampus, one of the brain's chief memory-processing areas.²²

Reishi and Diabetes

Obesity is a health hazard sweeping the globe in epidemic proportions—and chief among its complications is type II diabetes. The conditions are so often found hand-in-hand that researchers refer to them as a single disease called “diabetes.” Reishi mushrooms are especially valuable in the fight against this epidemic because they've been shown to have benefits across the entire spectrum of diabetes.²³⁻²⁶

Laboratory studies show that the polysaccharides and triterpenes in Reishi extracts can prevent the development of new fat cells from pre-adipocytes, helping to limit excessive fat storage seen in obese people.⁵ The extracts also have favorable effects on lipid profiles (cholesterol and triglycerides), which are frequently elevated in those with obesity and/or diabetes—and are risk factors for cardiovascular disease.²³

Reishi extracts work to lower blood sugar by several different mechanisms.^{5,23,24,72-76} Reishi inhibits **alpha-glucosidase**, the chief enzyme responsible for digesting starches into sugars.⁷⁷ This inhibition prevents the sharp after-meal spike in glucose that is so dangerous as we age.⁷⁸ They also limit the destruction caused by advanced glycation end products (AGEs), the proteins whose malfunction promotes aging and inflammation.⁷⁹

Studies have shown that reducing blood sugar and glycation with Reishi supplements reduces diabetic consequences like kidney disease.⁸⁰ Reishi extracts also speed wound healing in diabetic individuals, the result of enhanced antioxidant function.⁸¹

Reishi Safeguards Liver Function

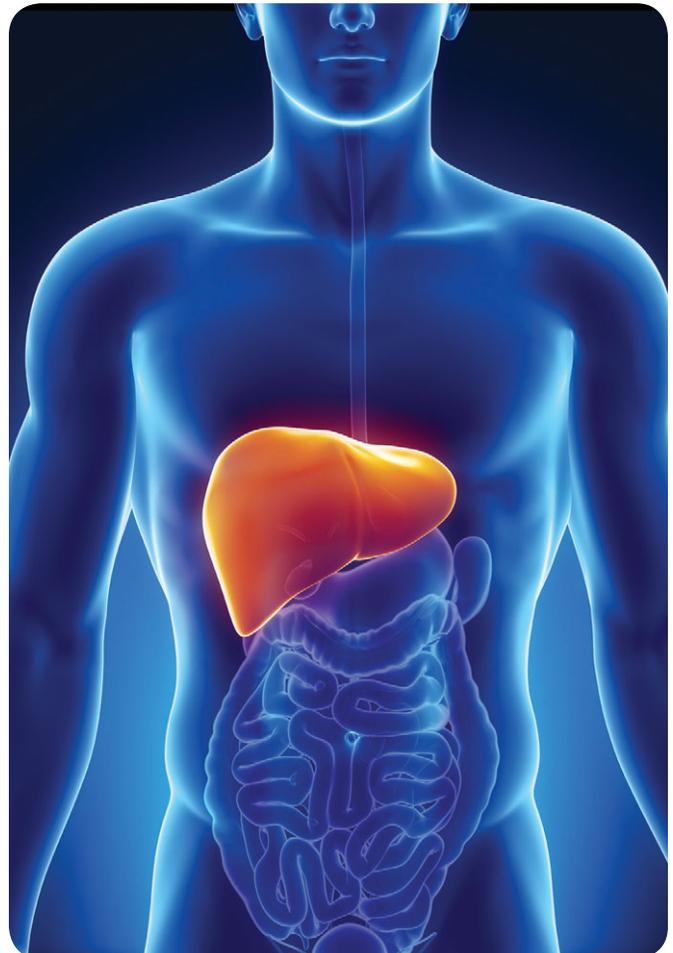
Your liver is the direct recipient of toxic threats both from the environment and from destructive molecules produced within your body. While it is well protected with its own antioxidant and detoxification systems, oxidation and inflammation eventually take their toll, leaving the aging liver at risk for decreased function, increased accumulation of toxic injury, fibrosis, and cancer. Fortunately, Reishi mushrooms offer direct protection against such threats.²⁷

Studies show, for instance, that pre-treating animals with Reishi spores can protect them when they're

exposed to cadmium, a highly toxic metal capable of causing massive liver failure.²⁸ Researchers found the spores decreased the cadmium accumulation in the liver, while “pushing” the toxic metal into the liquid matrix of the cells. Once there, the mushroom spores increased the production of a cadmium-binding protein that removes the toxin from the body.²⁸

Reishi mushroom extracts similarly protect liver tissue from the toxic effects of certain bacterial infections. In animals with such infections, Reishi polysaccharides inhibit inflammation in liver cells.²⁹ Other studies reveal that Reishi polysaccharides restore natural liver antioxidant systems to normal function following an infection, while inhibiting liver enzymes that produce excessive oxidative stress.^{30,31} Reishi mushrooms limit the activity of **beta-glucuronidase**, an enzyme that is elevated in many liver conditions, including inflammation, cirrhosis, and jaundice.^{31,32}

One of the most exciting potential applications for Reishi mushrooms in liver disease is in the condition called **liver fibrosis**, which is the final stage of **non-alcoholic fatty liver disease**. Statistics have shown that non-alcoholic fatty liver disease is the most



common form of liver disease, ultimately affecting **20** to **30%** of the population.³²⁻³⁵ In an animal model of toxin-induced liver fibrosis, treatment with Reishi extract **reversed** the fibrosis even after it was well-established.³⁶ This is an exceptional result, because in most cases, liver disease that has advanced to the stage of fibrosis is considered irreversible.

Summary

Reishi mushrooms provide a broad-spectrum approach to the treatment and prevention of many of today's age-related problems. With their diverse molecular makeup, they offer a wide range of actions that attack aging at its root.

This is seen in research demonstrating Reishi's ability to prolong the life spans of laboratory mice by **9%** to more than **20%**—the equivalent of 7 to nearly 16 years in human terms.

This is corroborated by research that has uncovered its powerful anti-cancer activity. Reishi mushrooms contribute to enhanced immune surveillance that can seek and destroy cancer cells before they can form threatening tumors.

Finally, studies have shown that Reishi extracts have a role in the prevention or mitigation of asthma, allergies, and autoimmune disorders, while offering protection against neurodegeneration, obesity and diabetes, and liver diseases of many kinds. ●

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

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

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

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

The daily dose (four softgels) of SUPER OMEGA-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract provide:

EPA Pure+™ Extract (eicosapentaenoic acid)	1400 mg
DHA Pure+™ Extract (docosahexaenoic acid)	1000 mg
Olive Fruit Extract [std. to 6.5% polyphenols (39 mg), 1.73% hydroxytyrosol/tyrosol (10.4 mg), 0.5% verbascoside/oleuropein (3 mg)]	600 mg
Sesame Seed Lignan Extract	20 mg

A SMALLER SOFTGEL for easier swallowing!

Some members have requested we make **Super Omega-3** available in a smaller capsule for easier swallowing. We have accomplished this by making **half-size** softgels available.

A bottle containing 240 half-size softgels of **Super Omega-3 EPA/DHA with Sesame Lignans and Olive Fruit Extract** retails for \$32. If a member buys four bottles during **Super Sale**, the price is reduced to **\$18.90** per bottle. If **10 bottles** are purchased during **Super Sale**, the cost is **\$16.81** per bottle. (Item # 01619)

For those with sensitive stomachs, **Super Omega-3** is also available with **enteric coating** and retails for **\$34**. If a member buys four bottles during **Super Sale**, the price is reduced to **\$20.93** per bottle. If **10 bottles** are purchased during **Super Sale**, the cost is **\$18.90** per bottle. (Item # 01484)

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

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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.

NEW

Extraordinary Enzymes

Digestive Support That Does Not Promote Glucose Spikes

Human studies suggest that supplementary **enzymes** may improve digestion and help minimize post-meal **glucose** surges.^{1,2}

Since proteins, plant fibers, and fats are broken down differently, one needs the proper spectrum of **enzymes** for **optimal digestion**.

A new **multi-enzyme formula** facilitates both optimal nutrient absorption and broad relief from digestive discomforts without promoting after-meal **glucose** surges.^{2,3}

TWELVE PREMIUM ENZYMES

Extraordinary Enzymes provides a potent array of **protease**, **cellulase**, and **lipase** enzymes specially formulated to adapt to a variety of stomach acid pH conditions and powerfully support digestion.

With a **total of twelve different enzymes**, this unique formula supports the digestion of just about *any* food that may pose a problem for you—whether a protein, fiber, or fat.

Extraordinary Enzymes provides a blend of powerful enzymes to help your system convert a variety of foods to energy and readily absorb the nutrients in the foods you consume. This formulation may enhance protein content in your body and allow for better fat utilization.^{4,5}

Together, these enzymes work by an all-natural, synergistic process to help provide nutritional support for a healthy digestive system.

The twelve enzymes in value-priced **Extraordinary Enzymes** are:

Protease SP (<i>Bacillus sp., Aspergillus oryzae</i>)	97,000 HUT
Protease S (<i>Aspergillus melleus</i>)	10,500 PC
Acid Protease (<i>Aspergillus niger</i>)	10 SAPU
Lipase (<i>Candida rugosa, Rhizopus oryzae, Aspergillus niger</i>)	4,000 FIP
Cellulase (<i>Trichoderma longibrachiatum</i>)	2,400 CU
Trypsin (Porcine)	20,000 USP
Chymotrypsin (Porcine)	3,336 USP
Phytase (<i>Aspergillus niger</i>)	20 FTU
Beta-Glucanase (<i>Trichoderma longibrachiatum</i>)	30 BGU
Hemicellulase (<i>Aspergillus niger</i>)	4,000 HCU
Pectinase (<i>Aspergillus niger</i>)	50 endo-PGU
Xylanase (<i>Trichoderma longibrachiatum</i>)	600 XU
Total Nutrient Absorption Blend	200 mg



WHAT'S NOT IN EXTRAORDINARY ENZYMES?

Unlike commercial digestive enzyme supplements, **amylase** is intentionally left out of **Extraordinary Enzymes**. The reason is that **amylase** breaks down **starches** into **glucose** that is rapidly absorbed into the bloodstream.²

Extraordinary Enzymes facilitates the healthy breakdown of plant fibers that cause people to avoid healthy vegetables because of digestive discomforts.

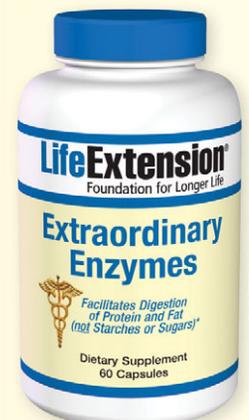
Most people will take one capsule before the two heaviest meals, which provides **400 mg** of natural digestive enzymes each day.

A bottle of 60 capsules of **Extraordinary Enzymes** retails for \$26. If a member buys four bottles during **Super Sale**, the price is reduced to **\$16.20** per bottle.

Contains milk, soybeans, tree nuts (coconut), and wheat.

References

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Item# 01706

To order Extraordinary Enzymes, 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.

SUPPORT FOR THE IMMUNE SYSTEM

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

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

REISHI SUPPORTS A HEALTHY IMMUNE SYSTEM

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

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

The **Reishi** mushroom also supports the body's production of endogenous antioxidant enzymes—such as **superoxide dismutase (SOD), catalase**, and **glutathione**—which, in turn, support the body's natural immune defenses against free radical damage!^{13,14}

ADVANCED EXTRACTION TECHNOLOGY

Reishi Extract Mushroom Complex delivers powerful compounds and represents the **next generation** of natural immune support. Reishi extracts standardized to polysaccharides have been available for years, but most do not standardize for triterpenes and include the spores. This full-spectrum extract has multiple components that have shown to support healthy immune function and enhanced longevity in a natural experimental aging model.¹⁵



Item# 01708

The suggested 2 capsules a day of

Reishi Extract Mushroom Complex provide:

Reishi mushroom (<i>Ganoderma lucidium</i>) extract (Fruit body)	980 mg
[standardized to 13.5% polysaccharides (132.3mg) and 6% triterpenes (58.8mg)]	
Reishi mushroom (<i>Ganoderma lucidium</i>) spore	150 mg

A bottle containing 60 vegetarian capsules of **Reishi Extract Mushroom Complex** retails for \$30. If a member buys four bottles during **Super Sale**, the price reduced to **\$18.23**.

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To order Reishi Extract Mushroom Complex, call 1-800-544-4440 or visit www.LifeExtension.com.



Enhanced Night Vision!

EYE PROTECTION FORMULA

Maintain Macular Density

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

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

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

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

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

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

OptiLut® is a registered trademark of NutriScience Innovations, LLC. LuteinPlus® and MZ® are registered trademarks of Nutriproducts Ltd., 7 Marfleet, CB22 5LA, UK, licensed under US Patents 6,218,436 & 6,329,432.

Comprehensive Ocular Protection in One Daily Softgel

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

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

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

References

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Item # 01685

To order **Super Zeaxanthin with Lutein, Meso-Zeaxanthin and C3G**, call **1-800-544-4440** or visit www.LifeExtension.com

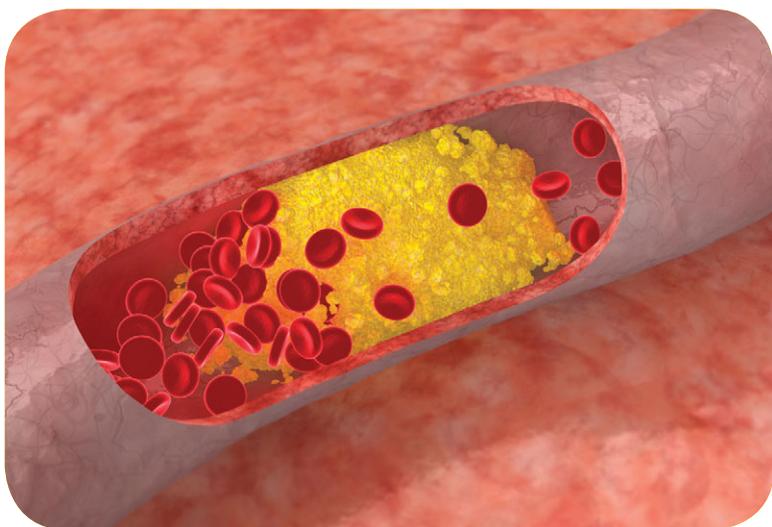


AUTHOR INTERVIEW

BY JONNY BOWDEN, PHD, CNS & STEPHEN SINATRA, MD, FACC

The Great Cholesterol Myth:

Why Lowering Your Cholesterol Won't Prevent Heart Disease—And the Statin-Free Plan That Will



Cholesterol and Saturated Fat Don't Cause Heart Disease

Heart disease is the #1 killer. However, traditional heart disease protocols have gotten it all wrong. Science is showing that cholesterol and saturated fat are not a direct path to heart disease—and that the standard prescription of low-fat diets and statin drugs are contributing to a health crisis of monumental proportions.

The Great Cholesterol Myth reveals the shoddy science, manipulated research, and corporate greed that has perpetuated the myth and displays the true culprits of heart disease—including sugar (not fat), inflammation, stress, and high-carb diets full of processed foods.

LE: Big Pharma has spent tens of millions of advertising dollars to create the \$30 billion-a-year industry of cholesterol-lowering drugs. What is the most disturbing fallout from this misinformation campaign?

TGCM: The real tragedy is that by putting all of our attention on cholesterol, we've virtually ignored the *real* causes of heart disease: inflammation, oxidation, sugar, and stress.

LE: And sadly, the government has gone in lockstep with this false narrative.

TGCM: Many of the general dietary guidelines accepted and promoted by the government and by major health organizations such as the American Heart Association are either directly or indirectly related to cholesterol phobia. As you'll learn in our book, cholesterol numbers are a pretty poor predictor of heart disease; more than half the people hospitalized with heart attacks have perfectly normal cholesterol levels, and about half the people with elevated cholesterol levels have perfectly normal, healthy tickers.

LE: The book references a report in the *New England Journal of Medicine* about the Nurses' Health study involving 120,000 women since the 1970s. Their findings support your research.

TGCM: The authors of that study wrote, "Eighty-two percent of coronary events in the study... could be attributed to lack of adherence to (these five factors)." One, don't smoke. Two, drink alcohol in moderation. Three, engage in moderate-to-vigorous exercise for at least half an hour a day on average. Four, maintain a healthy weight (BMI under 25). Five, eat a wholesome, low-glycemic (low-sugar) diet with plenty of omega-3 fats and fiber. Where's the part about lowering cholesterol? It's not there.

LE: Another myth you tackle is the idea of "good" and "bad" cholesterol.

TGCM: Knowing you have a "high" LDL level is pretty much a useless piece of information unless you know *how much* of that LDL is the small, dense kind (harmful) and how much is the big, fluffy kind (not harmful in the least). Unfortunately, most doctors are behind the times on this one. They look at that total LDL number – not the size and type – and if that number is even slightly higher than the lab says it should be, out comes the prescription pad. LDL, the imprecisely named "bad" cholesterol, has several different subtypes, and not all of them are bad at all – quite the contrary. Sadly, most doctors do not perform the easily available tests (such as VAP or NMR LipoProfile blood tests)—often covered by insurance— that determine the size and type of your LDL.

LE: Since cholesterol so often plays "the bad guy," how do we benefit from cholesterol?

TGCM: Cholesterol is a hormone factory. Cholesterol is used by the body to synthesize bile acids. Cholesterol is an essential component of all the cell membranes in the body. Cholesterol is important for the immune system.

We make vitamin D from cholesterol. Understanding the functions of this much maligned molecule will help you understand why so many things can go wrong when we pursue lower and lower cholesterol numbers.

LE: You write about how strong the cholesterol-vitamin D connection is and even mention a Life Extension Foundation® study from 2010 about the level of vitamin D in our members. Can you elaborate?

TGCM: It's impossible to overstate how important the cholesterol-vitamin D connection is. There is compelling research that links less than optimal levels of vitamin D with heart disease, poor physical performance, osteoporosis, depression, cancer, difficulty in losing weight, and even all-cause mortality.

LE: Switching gears, your book labels sugar "the real demon in the diet." What led you to that conclusion?

TGCM: Sugar is a far greater danger to your heart than fat ever was. Sugar is directly responsible for one of the most damaging processes in the body, something called *glycation*. Glycation is what happens when sticky sugar molecules glom onto structures where



they don't belong, essentially gumming up the works. What does this have to do with cholesterol and heart disease? Everything. [In our book] we discuss one primary way in which LDL cholesterol gets damaged – through oxidative stress generated by free radicals. Can you guess the other way it gets damaged? Glycation. Sugar is at the scene of several crimes, all related to heart disease. A 1992 study examined the blood work of healthy centenarians in an effort to find out whether there were any commonalities among the members of this unusually long-lived demographic. It found three: low triglycerides, high HDL cholesterol, and—wait for it—low fasting insulin. Your diet affects two of these blood measures—triglycerides and fasting insulin—and both measures will fall like a rock when you reduce or eliminate sugar and processed carbs in your diet.

LE: Why has “fat” been taking the fall for so many years while “sugar” has been skating by without much coverage?

TGCM: Well, there's no political lobby for “fat”, but there's a powerful one for sugar. In 2003, the World Health Organization published a conservative, reasonable report called *Diet, Nutrition and the Prevention of Chronic Diseases*. In it, the WHO made a statement that it would be a good idea for people to derive no more than 10 percent of their daily calories from added sugars. The report suggested that people could lower their risk of obesity, diabetes, and heart disease simply by curbing some of the sugar they were consuming. Following the report, a reporter for the *Washington Post* quoted a letter from the Sugar Association's president, Andrew

Briscoe, to the general director of WHO in which he stated, “We will exercise every avenue available to expose the dubious nature of the *Diet, Nutrition and the Prevention of Chronic Diseases* report.” Two senators wrote a letter to the then Health and Human Services Secretary Tommy G. Thompson, stating that, “evidence that soft drinks are associated with obesity is not compelling.”

LE: And that's where the danger of high fructose corn syrup comes in.

TGCM: In humans, a high-fructose diet raises triglycerides almost instantly. Fructose found in whole foods, such as in fruits, however, is a different story. There's not all that much fructose in, for example, an apple. But fructose extracted from fruit, concentrated into a syrup, and then inserted into practically every food we buy at the supermarket, that's a whole different animal. If you want a bunch of lab animals to become insulin resistant, all you have to do is feed them fructose.

LE: What are some supplements that you feel can have a heart-protecting effect?

TGCM: CoQ10 is a kind of “energy fuel” for the heart. Magnesium relaxes the artery walls, reduces blood pressure, and makes it easier for the heart to pump blood and for the blood to flow freely. Niacin will lower both triglycerides and the “bad” kind of LDL cholesterol. Other supplements worth considering include vitamin C, curcumin, resveratrol, and cocoa flavanols. D-ribose is one of the components of the energy molecule ATP, which the body uses to power all activity. ●

To order *The Great Cholesterol Myth*, visit www.LifeExtension.com

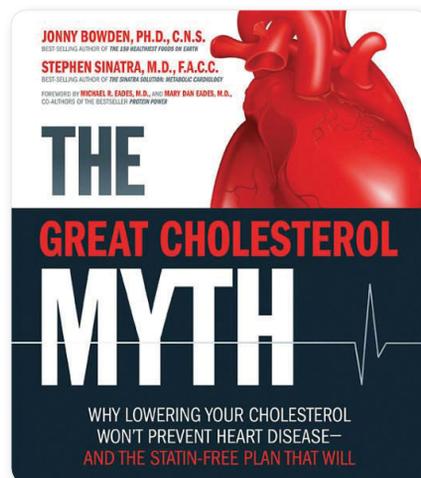
Stephen Sinatra, MD, FACC, is an internationally known and sought-after cardiologist, educator, and author who created the Manchester, CT-based Heart MD Institute as an educational platform focused on prevention and proactive lifestyle changes to live a healthier life.

For more information visit www.heartmdinstitute.com.

Jonny Bowden, PhD, CNS, a best-selling nutritionist with a master's degree in psychology, is a nationally known expert on nutrition, weight loss, and health. He is the author of several bestselling titles.

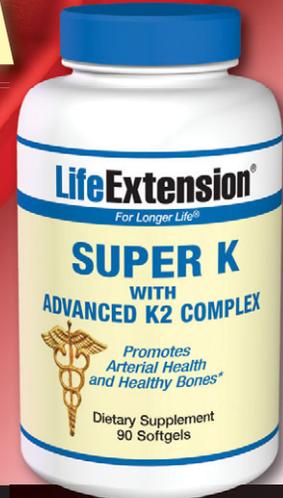
For more information visit www.jonnybowden.com.

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



Item# 33854
Retail price \$19.99
Member price \$14.99

COMPREHENSIVE VITAMIN K FORMULA



Item # 01724

Super K formula provides in just one daily softgel:

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

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

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

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

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

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

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

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

Warning to Coumadin® (warfarin) Drug Users

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

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WELLNESS PROFILE

BY JON FINKEL

Dr. Vagnini

The Founder of the V Protocol



Frederic J. Vagnini, MD, FACS

"The breaking point for me was that I'd always been a thin, healthy, well-dressed man. When I got obese, it came on slowly. I smoked. I drank a little alcohol. Then, all of a sudden, I was obese. I had to start wearing custom clothes. I went out and bought so-called fat clothes and when I saw myself in the mirror I started crying. It just wasn't me. At the time, I had two young daughters. I was too exhausted to play with them. I thought, 'If I can't get off of the couch, and I'm exhausted, and if someone came in to kidnap my daughters, I couldn't do anything about it.' I had to change."

With cases of diabetes and obesity reaching epidemic proportions across the United States, the above quote could be from any man who ignores his health and over time becomes tragically overweight. In this case, however, the words come from Frederic J. Vagnini, MD, FACS, a board-certified cardiovascular surgeon, bestselling author, and the director of the Heart, Diabetes, and Weight Loss Centers of New York.

Dr. Vagnini's personal experience with obesity and diabetes, and subsequently losing over 100 pounds to improve his health, has left him with the unique perspective of having lived with a heart suffering from extreme weight gain as well as having operated on other people's hearts under the same conditions. Now, as director of a major heart center in New York, he spends his time helping people avoid heart surgery in the first place with his cutting edge V Protocol.

The V Protocol

According to Dr. Vagnini, the V Protocol is a series of five "rungs" on a ladder of knowledge that you have to understand and climb to overcome the potentially mortal dual diagnosis connection of diabetes and heart disease, known as diabetes.

At the beginning of Dr. Vagnini's groundbreaking book, *Beating the Cardio-Diabetes Connection – The V Protocol: The Expert's Plan*, he says these steps include, "understanding areas of personal health designed to overcome lack of motivation to change, and mitigate genetic disposition and poor nutrition, along with a failure to fully understand how specific medications and new, natural supplements can stop this catastrophe."

But the protocol wasn't just something that Dr. Vagnini came up with overnight; rather, it took decades of practice as a physician to develop his strategy.

"I went to medical school at St. Louis School of Medicine," he says. "I did my internship for 5 years at the Downstate Medical Center in Brooklyn, then spent two years at Columbia-Presbyterian. Then I went into the Army in Augusta,

Georgia, where I did general and vascular surgery. After that I got involved in non-invasive vascular studies and I wanted to learn everything."

The reason for Dr. Vagnini's excitement was because he was about to open a small practice in Long Island to treat vascular disease.

"I had to retrain myself," he says. "I didn't know anything about drugs since I was a surgeon. I had to learn blood pressure medications and lipid disorders. And over the last twenty years, I saw more and more people with visceral obesity, high blood pressure, high cholesterol, metabolic syndrome, elevated uric acid, elevated homocysteine, low HDL, and on and on. I knew this was becoming a real problem and I became obsessed with learning how to stop it."

Recognizing A Deadly Connection

"Throughout the years of my practice, I started to notice that many people with heart problems had this glucose-heart disease connection," Dr. Vagnini explains.



"Oftentimes, when someone gets their heart checked, the doctor will check EKG, blood pressure, cholesterol, etc. But they don't check your blood glucose. Some people have elevated levels without being overweight, but most who have them are overweight."

Since Dr. Vagnini was a heart surgeon and had trained himself in the use of blood pressure medications, he knew that in so many of his patients there was much more going on than just a heart issue, but in the beginning, people weren't willing to listen.

"On top of being a heart surgeon, I knew the nutrients because I was interested in nutrition and supplements because many of my patients were as well," he says. "But back then they called me a 'fringe' doctor because I incorporated vitamins and other supplements into my practice."

Dr. Vagnini was ahead of his time in recognizing the importance of supplements to a healthy lifestyle.

The V Protocol Supplement List to Improve Heart and Circulation:

- Arginine
- Carnitine
- CoQ10
- Ethyl pyruvate
- Ginkgo biloba
- Hawthorn
- Kyolic garlic
- Magnesium orotate
- Omega-3
- Orosine
(inosine and magnesium orotate)
- Resveratrol
- D-Ribose
- Taurine
- Vitamin D



Using Everything in His Arsenal

These days, when a new patient walks into Dr. Vagnini's office, he or she can expect to leave with a fully individualized program, not simply a prescription and a follow-up appointment. Diet advice, exercise plans, stress reduction techniques, meditation techniques, medical nutritionist advice, and much more are now part of a standard heart health improvement plan.

"The V Protocol is doing all of what I just described, but that's after our initial analysis," Dr. Vagnini says. "The first time I see a patient, I give them the whole array of the protocol. I administer a variety of stress tests, including echo, echo stress, and possible nuclear stress. We check for a coronary calcium score and endothelial dysfunction. Everyone who comes in gets a three-hour glucose tolerance test, a BMI test, total body water test, and lean body mass test. I want to know everything about my patient so I can use everything in my arsenal to help them lose weight and improve their health. I also include many general anti-aging strategies as well."

With a lab on the premises, all the tests can be administered and the results can be revealed in

a shorter time frame than some other facilities, making the time between a diagnostic work-up and the creation of a treatment program as streamlined as possible. A big part of the program involves supplements.

Supplementation is Key

With the growing body of knowledge about supplements and nutrients expanding every day, each patient gets a nutraceutical program geared directly toward their own problems.

"Almost everyone gets vitamin D3," Dr. Vagnini says. "Some start at **5,000** units, some higher. Many are very vitamin D deficient, which can increase the risk for cardiovascular disease. I've even prescribed **50,000** units of vitamin D a week for 12 weeks and seen excellent results." In addition to vitamin D, Dr. Vagnini often recommends that his patients take up many supplements that are familiar to Life Extension readers.

"I often recommend resveratrol for a variety of reasons," Dr. Vagnini says. "It is a powerful antioxidant, it helps with insulin resistance, and it helps you lose weight. I like to suggest pomegranate be taken with it as well. And of course, it has many anti-aging benefits."

Omega-3s are also often involved in the V Protocol and Dr. Vagnini refers to them as "miracle nutrients."

"Omega-3s may cut diabetes risk, but they also help regulate blood pressure and lower homocysteine," he says. "CoQ10 is another critical nutrient that helps with insulin resistance, cardiac performance, and many

more issues. If a patient is suffering from fatigue, I'll tell them about the energy benefits of D-Ribose. There are so many supplements out there that are helpful."

Aged garlic extract is also something that Dr. Vagnini mentions he recommends patients use to help with cholesterol levels, blood pressure, and arterial wall support.

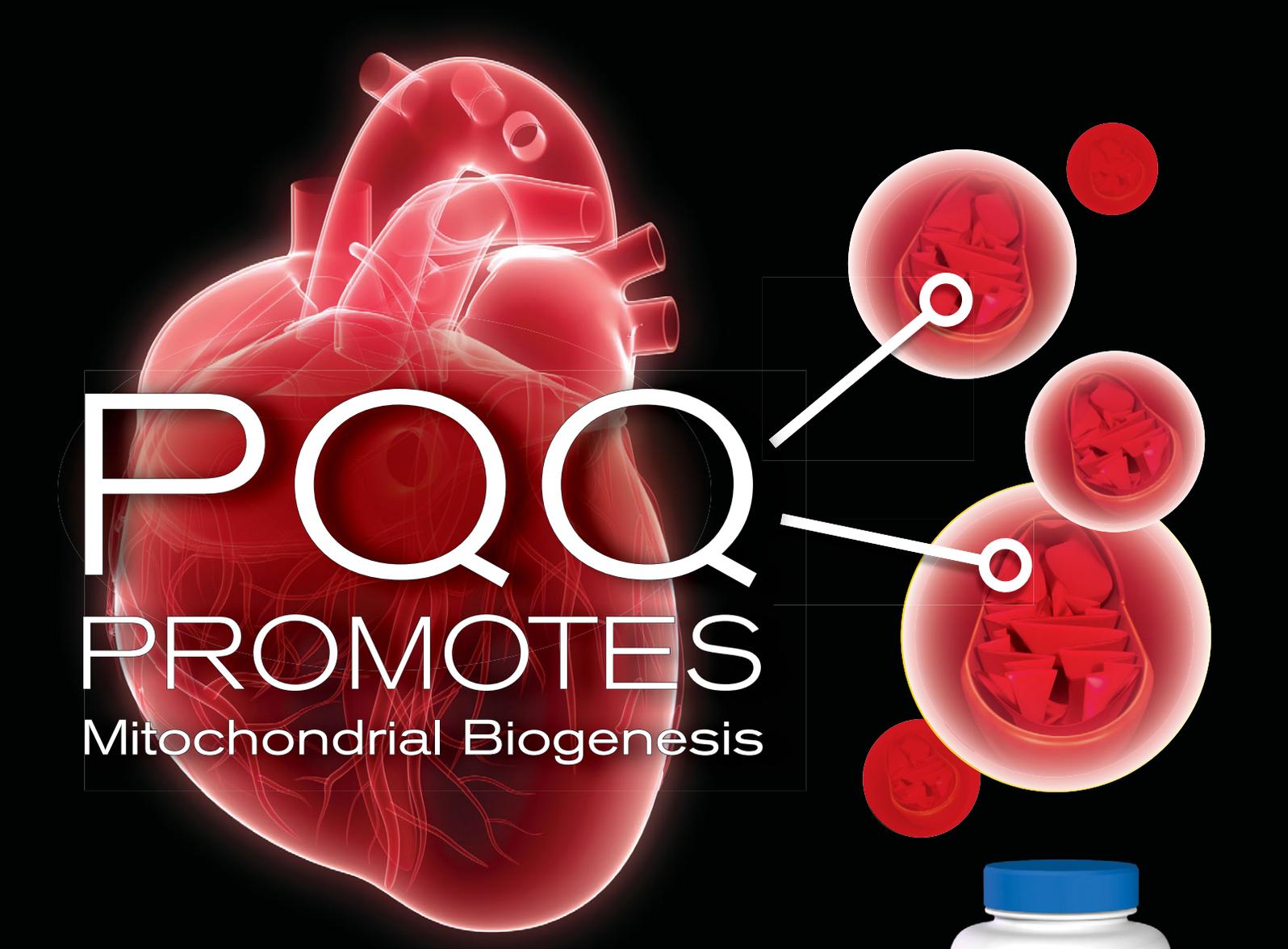
"Too many physicians see a problem and go right for the drugs," Vagnini says. "I go natural as much as I can. I'll use statin drugs or something if I have to, but I have no hesitation to try red yeast rice, green tea extract, rutin, carnitine, whatever I find my patients are having success with."

Open-minded doctors like Dr. Vagnini are a rare presence in medicine, but thanks to his pioneering spirit and his willingness to recognize the value of nutraceuticals, there should soon be more doctors following his, and Life Extension's footsteps. ●

For more information on Dr. Vagnini or the V Protocol, visit: www.vagnini.com

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





PQQ

PROMOTES

Mitochondrial Biogenesis

Critical Importance of Mitochondria

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

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

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

PQQ is available as a low-cost dietary supplement.

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

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

PQQ offers a viable alternative.



Item #01647

The Ultimate Cell Rejuvenator

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

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

- **Antioxidant power.** Like CoQ10, PQQ is a highly potent antioxidant. Its extraordinary molecular stability enables it to facilitate thousands of biochemical reactions in the mitochondria, without breaking down, for maximum antioxidant and bioenergetic support.¹⁵
- **Favorably modulates gene expression.** PQQ activates *genes* that promote formation of **new mitochondria**⁷—and beneficially interacts with genes directly involved in mitochondrial health. These same genes also support **healthy body weight**, normal **fat** and **sugar metabolism**, and **youthful cellular proliferation**.¹⁶
- **Mitochondrial defense.** Mitochondria possess their *own* DNA, distinct from the DNA contained in the nucleus. Unfortunately, compared to nuclear DNA, mitochondrial DNA is relatively unprotected. PQQ's antioxidant potency and favorable gene expression profile act to support mitochondrial defense.



Vital Protection for the Aging Heart and Brain

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

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

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

A Breakthrough Weapon in the Battle Against Aging

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

A bottle containing **30 20 mg** vegetarian capsules of **PQQ Caps with BioPQQ™** retails for \$40. If a member buys four bottles during **Super Sale**, the price is reduced to **\$24.30** per bottle.

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

BioPQQ™ is a trademark of MGC (Japan).

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

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

Five Easy Steps:

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

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

For Our Local Members:

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

Blood Testing The Ultimate Information

MOST POPULAR PANELS

Life Extension Member Pricing

- | | |
|---|---|
| <p>○ COMPREHENSIVE PANELS
MALE LIFE EXTENSION PANEL (LC322582) \$269
Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes:
C-Reactive Protein DHEA-S
Homocysteine TSH for thyroid function
Free Testosterone Total Testosterone
Estradiol Vitamin D 25- hydroxy
PSA (prostate-specific antigen)</p> | <p>○ THE CBC/CHEMISTRY PROFILE (LC381822) \$35
OVER 40 PARAMETERS TESTED
CARDIOVASCULAR RISK PROFILE
Total Cholesterol Cholesterol/HDL Ratio
HDL Cholesterol Estimated CHD Risk
LDL Cholesterol Glucose
Triglycerides Iron
LIVER FUNCTION PANEL
AST (SGOT) Total Bilirubin
ALT (SGPT) Alkaline Phosphatase
LDH
KIDNEY FUNCTION PANEL
BUN BUN/Creatinine Ratio
Creatinine Uric Acid
BLOOD PROTEIN LEVELS
Total Protein Globulin
Albumin Albumin/Globulin Ratio
BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE
Red Blood Cell Count Monocytes
White Blood Cell Count Lymphocytes
Eosinophils Platelet Count
Basophils Hemoglobin
Polys (Absolute) Hematocrit
Lymphs (Absolute) MCV
Monocytes (Absolute) MCH
Eos (Absolute) MCHC
Baso (Absolute) Polynucleated Cells
RDW
BLOOD MINERAL PANEL
Calcium Sodium
Potassium Chloride
Phosphorus Iron</p> <p>NOTE: CBC/Chemistry profile is included in the Male and Female Life Extension panels and Weight Loss Panels.</p> |
| <p>○ FEMALE LIFE EXTENSION PANEL (LC322535) \$269
Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes:
C-Reactive Protein DHEA-S
Estradiol Homocysteine
Progesterone TSH for thyroid function
Free Testosterone Total Testosterone
Vitamin D 25- hydroxy</p> | <p>○ HEMOGLOBIN A1C (HBA1C) (LC001453) \$31
Hemoglobin A1C evaluates long-term blood sugar control. Serum glucose sometimes reacts with important proteins in the body rendering them nonfunctional. Since this process, known as glycation is one of the leading theories of aging, Life Extension[®] believes everyone should check their A1C level.</p> |
| <p>○ MALE WEIGHT LOSS PANEL (LCWLM) \$299
Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes:
C-Reactive Protein DHEA-S
Insulin SHBG
Free Testosterone Total Testosterone
Estradiol Free T3
TSH Free T4
PSA (prostate-specific antigen)</p> | <p>○ VITAMIN D (25OH) (LC081950) \$47
This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.</p> |
| <p>○ FEMALE WEIGHT LOSS PANEL (LCWLF) \$299
Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and-kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes:
C-Reactive Protein DHEA-S
Progesterone Insulin
Free Testosterone Total Testosterone
Estradiol Free T3
TSH Free T4
SHBG</p> | <p>○ FOOD SAFE ALLERGY TEST** (LCM73001) \$198
This test measures delayed (IgG) food allergies for 95 common foods.</p> |
| <p>○ MALE HORMONE ADD-ON PANEL (LCADDM)* \$155
Pregnenolone and Dihydrotestosterone (DHT)
To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel. This panel provides valuable information about a testosterone metabolite that can affect the prostate, and the mother hormone that acts as a precursor to all other hormones.</p> | <p>○ ASPIRINWORKS™* (LC501620) \$149
Taking aspirin to prevent heart attack? Is it working? This is a random urine test used to measure your resistance to aspirin.</p> |
| <p>○ FEMALE HORMONE ADD-ON PANEL (LCADDF)* \$125
Pregnenolone and Total Estrogens
To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides valuable information about total estrogen status, and the mother hormone that acts as a precursor to all other hormones.</p> | <p>○ OMEGA SCORE™*** (LCOMEGA) \$131.25
Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Score™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.</p> |
| <p>○ LIFE EXTENSION THYROID PANEL (LC304131) \$75
TSH, T4, Free T3, Free T4.</p> | <p>○ COQ10* (COENZYME Q10) (LC120251) \$145
This test is used to check the blood level of CoQ10 and will enable more precise dosing for anyone seeking to achieve and maintain high levels of this critical antioxidant.</p> |
| <p>○ FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) \$299
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.</p> | |
| <p>○ MALE COMPREHENSIVE HORMONE PANEL* (LC100010) \$299
CBC/Chemistry Profile (see description above), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3.</p> | |

* 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 Panels Life Extension Member Pricing

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

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

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

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

Popular Single Tests

HORMONES

- CORTISOL (LC004051)** **\$39**
This test is to measure adrenal function.

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

- DIHYDROTESTOSTERONE (DHT)* (LC500142)** **\$99**
Measures serum concentrations of DHT.

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

- INSULIN FASTING (LC004333)** **\$42**
Can predict those at risk of diabetes, obesity, and heart and other diseases.

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

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

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

- SOMATOMEDIN C (IGF-1) (LC010363)** **\$75**
Indicates growth hormone secretion levels. Low levels have been associated with atherosclerosis as well as all-cause mortality.

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

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

- CARDIAC RISK** **\$125**
Lp-PLA2 (PLAC TEST)* (LC123240)

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

- C-REACTIVE PROTEIN (HIGH-SENSITIVITY) (LC120766)** **\$42**

Measures inflammation factors in arteries. Recent studies indicate that C-reactive protein may be the most accurate risk factor for predicting heart attack and stroke.

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

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

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

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

- VAP™ TEST* (LC804500)** **\$90**
The VAP cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. Direct measurements, not estimations, are provided for total cholesterol, LDL, HDL, VLDL, and cholesterol subclasses.

MALE HEALTH

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

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

BONE HEALTH

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

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

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

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

TERMS AND CONDITIONS

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

Signature of Life Extension Member

X

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NATIONAL DIAGNOSTICS, INC.

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Acetyl-L-Carnitine-Arginate
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D, L-Phenylalanine Capsules
GABA Powder
Glycine Capsules
Glycine Powder
L-Arginine Capsules
L-Arginine Free Base Powder
Arginine/L-Ornithine Capsules
L-Carnitine Capsules
L-Glutathione, L-Cysteine & C
L-Glutamine Capsules
L-Glutamine Powder
L-Lysine Capsules
L-Lysine Powder
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Mega L-Glutathione Capsules
N-Acetyl-L-Cysteine Capsules
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PharmaGABA
Super Carnosine Capsules
Taurine Capsules

BONE & JOINT HEALTH

ArthroMax™ with Theaflavins and AprèsFlex™
ArthroMax™ Advanced with UC-II® and
AprèsFlex™
Bone-Up™
Bone Restore
Bone Restore w/Vitamin K2
Bone Strength Formula w/KoAct™
Chondroitin Sulfate
Chondrox
Fast Acting Joint Formula
Glucosamine Chondroitin Capsules

BRAIN HEALTH

Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginate
CDF Choline Capsules
Cognitex® with NeuroProtection Complex
Cognitex® with Pregnenolone &
NeuroProtection Complex
Cognitex® Basics
DMAE
Ginkgo Biloba Certified Extract™
Huperzine A
Lecithin with B5 and BHA
Lecithin Granules
Methylcobalamin Lozenges
Neuro-Mag™ Magnesium L-Threonate
Optimized Ashwagandha Extract
Phosphatidylserine Capsules
Rhodiola Extract
Super Ginkgo Extract
Vinpocetine

DIGESTIVE

Bifido GI Balance
Bromelain Powder
Carnosoothe w/PicroProtect
Digest RC™
Enhanced Super Digestive Enzymes
Extraordinary Enzymes
Life Flora™
Natural EsophaGuard
Pancreatin
Probiotic All-Flora®
Probiotic Anti-Aging
Probiotic Colon™
Regimint
Theralac Probiotics

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Dual-C
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Super Zeaxanthin with Lutein &
Meso-Zeaxanthin Plus Astaxanthin and C3G

Super Zeaxanthin with Lutein &
Meso-Zeaxanthin and C3G
Vision Optimizer

FIBER

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Fiber Food
Hi-Lignan® Nutri-Flax®
TruFiber®
WellBetX PGX® Soluble Fiber Blend

FOOD

Rich Rewards Spicy Cruciferous Vegetable Soup
Rich Rewards Cruciferous Vegetable Soup
Rich Rewards Lentil Soup
Rich Rewards Coffee

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

HEART HEALTH

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Aspirin (Enteric Coated)
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Cho-Less™
D-Ribose Capsules
D-Ribose Powder
Endothelial Defense™ with
Full-Spectrum Pomegranate™
Fibrinogen Resist
Forskolin
Homocysteine Resist
Krill Healthy Joint Formula
Natural BP Management
Olive Leaf Vascular Support
Peak ATP® with GlycoCarn®
PhosphoOmega®
Policosanol
Pycnogenol® French Maritime Pine Bark Extract
Red Yeast Rice
Super Absorbable CoQ10™ with *d*-Limonene
Super Omega-3 EPA/DHA with Sesame
Lignans & Olive Fruit Extract
Super Ubiquinol CoQ10
Super Ubiquinol CoQ10 with Enhanced
Mitochondrial™ Support
Sytrinol™
Theaflavin Standardized Extract
TMG Powder
TMG Tablets

HERBAL/PHTO PRODUCTS

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Astaxanthin
Berry Complete
Blueberry Extract
Blueberry Extract w/Pomegranate
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Calcium D-Glucarate
Cilantro Herbal Extract
Citrus Bioflavonoid
Enhanced Berry Complete with RZD™ Acai
Floradix® Iron & Herbs
Floravital® Iron & Herbs
Full-Spectrum Pomegranate™
Grapeseed Extract with Resveratrol &
Pterostilbene
Huperzine A
Kyolic® Garlic Formula 105
Kyolic® Reserve
Mega Green Tea Extract
Mega Green Tea Extract (Decaffeinated)
(also w/ CoffeeGenic™ Green Coffee Extract)
Mega Lycopene Extract
Nutrim
Optimized Ashwagandha Extract
Optimized Garlic
Pomegranate Extract
Pomegranate Juice Concentrate
ProGreens®
Pure-Gar™
Pycnogenol
Optimized Quercetin
Resveratrol with Synergistic Grape-Berry Actives
Rhodiola Extract

Rosmarinic Acid Extract
Silymarin
SODzyme™ with GliSODin®
Stevia Extract
Super Bio-Curcumin®
Super Ginkgo Extract
Triple Action Cruciferous Vegetable Extract
Venotone
Whole Grape Extract

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

IMMUNE ENHANCEMENT

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Black Cumin Seed Oil
Black Cumin Seed Oil w/Bio-Curcumin®
Buffered Vitamin C Powder
Echinacea
Enhanced Life Extension Whey Protein
i26 Hyperimmune Egg
Immune Protect with PARACTIN®
Lactoferrin
Maitake SX-Fraction
Norwegian Shark Liver Oil
Optimized Fucoidan w/Maritech® 926
Primal Defense™
ProBoost™ Thymic Protein A
Pure Gar™
Reishi Extract Mushroom Complex
Sambu® Guard
Thymic Immune Factors
Vitamin C with Dihydroquercetin
Zinc Lozenges with Vitamin C

INFLAMMATORY REACTIONS

Arthro-Immune Joint Support
ArthroMax™ with Theaflavins
Boswella
Boswella™ Topical Cream
Bromelain (Specially-coated)
DHA (Vegetarian Sourced)
Emulsified Norwegian Cod Liver Oil
Emulsified Super Twin EPA/DHA
Fast Acting Joint Formula
Ginger Force
Krill Oil
5-LOX Inhibitor w/AprèsFlex™
Mega EPA/DHA
Mega GLA with Sesame Lignans
MSM
Natural Relief 1222™ Cream
Omega-3 Whirl
Serrafazyme
SODzyme™ with GliSODin® and Wolfberry
Super Omega-3 EPA/DHA with Sesame
Lignans & Olive Fruit Extract
Tart Cherry
Udo's Choice Oil
Zyflamend® Tiny Caps®

LIVER HEALTH

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

MINERALS

Biosil
Bone Restore
Bone Strength Formula w/KoAct®
Bone-Up™
Boron Capsules

Calcium Citrate with D3
Chromium Ultra
Copper
Dr. Strum's Intensive Bone Formula
Floradix® Iron & Herbs
Floravital® Iron & Herbs
Iodoral
Iron Protein Plus
Magnesium
Magnesium Citrate
Mineral Formula for Men
Mineral Formula for Women
Only Trace Minerals
Optimized Chromium w/Crominex® 3+
OptiZinc
Sea-Iodine™
Selenium
Se-Methyl L-Selenocysteine
Strontium
Vanadyl Sulfate
Zinc/Vitamin C Lozenges

MISCELLANEOUS

Blender
Blood Pressure Monitor Arm Cuff Medium
Cell Sensor Gauss Meter™
CR Way Edition Advanced Dietary Software
Empty Gelatin Capsules
The Capsule Filler Machine

MITOCHONDRIAL SUPPORT

Acetyl-L-Carnitine
Acetyl-L-Carnitine-Arginate
Mitochondrial Basics w/BioPQQ™
Mitochondrial Energy Optimizer w/BioPQQ™
Optimized Carnitine with GlycoCarn®
Super Absorbable CoQ10™ with d-Limonene
Super Alpha Lipoic Acid with Biotin
Super R-Lipoic Acid
Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™

MOOD RELIEF

Adrenal Energy Formula™
Bioactive Milk Peptides
L-Theanine
5 HTP
Enhanced Natural Sleep® w/ Melatonin
Enhanced Natural Sleep® w/o Melatonin
Natural Stress Relief
Stabilium® 200
SAmE
St. John's Wort Extract

MOUTH CARE

Advanced Oral Hygiene
Mist Oral III™ with CoQ10
Mouthwash w/Pomegranate
Toothpaste

MULTIVITAMIN

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

PET CARE

Cat Mix
Dog Mix

PROSTATE & URINARY HEALTH

BetterWOMAN®
Optimized Cran-Max® with UTIRose™
5-LOXIN®
(Water-Soluble) Pumpkin Seed Extract
Super Saw Palmetto with Beta-Sitosterol
Super Saw Palmetto/Nettle Root Formula w/Beta-Sitosterol
Ultra Natural Prostate Formula

SKIN CARE

Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermAbrasion
Anti-Aging Mask
Anti-Glycation Serum
Antioxidant Rejuvenating Foot Cream
Antioxidant Rejuvenating Foot Scrub
Antioxidant Rejuvenating Hand Cream
Antioxidant Rejuvenating Hand Scrub
Anti-Redness & Blemish Lotion
Bio-Collagen w/Patented UC-II®
Bioflavonoid Cream
Broccoli Sprout
Corrective Clearing Mask
DermaWhey
DNA Repair Cream
Dual-Action MicroDermAbrasion
Elastin Collagen Body Firming Lotion
Essential Plant Lipids Reparative Serum
Face Master® Platinum
Face Rejuvenating Antioxidant Cream
Enhanced FernBlock® with Sendara®
Fine Line-Less
Hair Suppress Formula
Healing Formula All-in-One Cream
Healing Mask
Hyaluronic Facial Moisturizer
Hydrating Anti-oxidant Face Mist
Hydroderm®
Lavilin Underarm Deodorant
Lifting & Tightening Complex
Lycopene Cream
Melatonin Cream
Mild Facial Cleanser
Neck Rejuvenating Antioxidant Cream
Peel Off Cleansing Mask
Pigment Correcting Cream
(Ultra) Rejuvenex®
Rejuvenex® Body Lotion
Rejuvenex® Factor
Rejuvenex® Factor Firming Serum
Rejuvenating Serum
Resveratrol Anti-Oxidant Serum
Skin Lightening Serum
Skin Restoring Phytoceramides w/Lipowheat™
Skin Stem Cell Serum
Stem Cell Cream w/Alpine Rose
Supercritical Omega 7™
Total Sun Protection Cream
Ultra Rejuvenex®
Ultra RejuveNight® w/o Progesterone
Ultra Lip Plumper
Ultra Wrinkle Relaxer
Under Eye Refining Serum
Under Eye Rescue Cream
Vitamin C Serum
Vitamin D Lotion
Vitamin E-ssential Cream
Vitamin K Healing Cream

SOY

Natural Estrogen w/Pomegranate
Soy Protein Concentrate
Super Absorbable Soy Isoflavones
Ultra Soy Extract

SPECIAL PURPOSE FORMULA

Anti-Alcohol Antioxidants w/HepatoProtection Complex
Benfotiamine w/Thiamine
Breast Health Formula
Butterbur Extract w/Standardized Rosmarinic Acid
Chlorella
Chlorophyllin
Green Coffee Extract CoffeeGenic™ (also w/Glucose control)
Coriolus Super Strength
CR Mimetic Longevity Formula
Cinsulin® w/InSea2® and Crominex® 3+
EDTA
European Leg Solution Diosmin 95
Fem Dophilus
Femmenessence MacaPause®
GlucoFit™
Hearos™ Ear Plugs
Ideal Bowel Support 299

Maitake SX-Fraction™
Migra-eeze™
Natural Female Support
Organic Total Body Cleanse
Pecta-Sol®
Potassium Iodide
PQQ Caps with BioPQQ™
PteroPure™
Prelox® Natural Sex for Men®
Pyridoxal 5' - Phosphate
Rosmarinic Acid Extract
Ultra Natural Prostate w/AprèsFlex™ and Standardized Lignans

SPORTS PERFORMANCE

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

VITAMINS

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

WEIGHT MANAGEMENT

Alli® Refill Pack
Advanced Anti-Adipocyte Formula w/AdipoStat & Integra Lean®
Anti-Adipocyte Formula w/AdipoStat
Calorie Control Weight Management™ Formula w/CoffeeGenic™ Green Coffee Extract
CoffeeGenic™ Weight Management™ with Green Coffee Extract
7-Keto DHEA
DHEA® Complete
Fucoxanthin Slim™
HCA
Integra-Lean® Irvingia
LuraLean® Caps Special Propolmannan Particle Size
Optimized Irvingia w/Phase 3™ Calorie Control Complex
Optimized Saffron with Satiereal®
Natural Appetite Control
Natural Glucose Absorption Control
Stevia Liquid Extract
Super CLA Blend w/Guarana and Sesame Lignans
Super CLA Blend w/Sesame Lignans
WellBetX PGX® Soluble Fiber Blend

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call: 1-954-766-8433 or 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
A					
00449	ACETYL-L-CARNITINE - 500 mg, 100 caps Buy 4 bottles, price each	\$34.00 30.00	\$25.50 22.50		
01525	ACETYL-L-CARNITINE ARGINATE - 100 veg. caps Buy 4 bottles, price each	59.00 50.99	44.25 38.24		
01628	ADRENAL ENERGY FORMULA™ - 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01308	ADVANCED LIPID CONTROL - 60 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01521	ADVANCED ORAL HYGIENE - 60 veg. mint lozenges Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00681	AHCC - 500 mg, 30 caps Buy 4 bottles, price each	59.98 53.33	44.99 40.00		
*46925	ALLI® REFILL PACK - 120 caps	69.95	58.00		
00457	ALPHA-LIPOIC ACID w/BIOTIN (SUPER) - 250 mg, 60 caps Buy 4 bottles, price each	37.00 32.00	27.75 24.00		
01440	ANTI-ALCOHOL ANTIOXIDANTS w/HEPATOPRO - 100 caps Buy 4 bottles, price each	26.00 23.00	19.50 17.25		
01510	ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT - 60 veg. caps Buy 4 bottles, price each	35.00 32.00	26.25 24.00		
01509	ANTI-ADIPOCYTE FORMULA w/ADIPOSTAT & INTEGRA LEAN® (ADVANCED) - 60 veg. caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
01625	APPLEWISE POLYPHENOL EXTRACT - 600 mg, 30 veg. caps Buy 4 bottles, price each	21.00 19.00	15.75 14.25		
01039	ARGININE/ORNITHINE - 500/250, 100 caps Buy 4 bottles, price each	16.00 14.50	12.00 10.88		
00038	ARGININE/ORNITHINE POWDER - 150 grams Buy 4 bottles, price each	22.95 19.00	17.21 14.25		
01624	(L)-ARGININE CAPS - 700 mg, 200 veg. caps Buy 4 bottles, price each	26.50 23.25	19.88 17.44		
01025	(L)-ARGININE FREE-FORM POWDER - 100 grams Buy 4 bottles, price each	15.98 14.31	11.99 10.73		
01617	ARTHROMAX™ w/THEAFLAVINS & APRESFLEX™ - 120 veg. caps Buy 4 bottles, price each	44.00 40.00	33.00 30.00		
01618	ARTHROMAX™ ADVANCED w/UC-II® & APRESFLEX™ - 60 caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01404	ARTHRO-IMMUNE JOINT SUPPORT - 60 veg. caps Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
00919	ARTICHOKE LEAF EXTRACT - 500 mg, 180 veg. caps Buy 4 bottles, price each	28.00 25.38	21.00 19.04		
00080	ASCORBIC ACID POWDER - 454 grams Buy 4 bottles, price each	38.00 34.93	28.50 26.20		
01533	ASCORBYL PALMITATE - 500 mg, 100 veg. caps Buy 4 bottles, price each	22.50 20.00	16.88 15.00		
00888	ASHWAGANDHA EXTRACT (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
01066	ASPIRIN - 81 mg, 300 enteric coated tablets Buy 4 bottles, price each	6.00 5.33	4.50 4.00		
00708	ASTAXANTHIN - 2 mg, 30 softgels	10.25	7.69		

SUB-TOTAL OF COLUMN 1

No.		Retail Each	Member Each	Qty	Total
B					
00920	BENFOTIAMINE w/ THIAMINE - 100 mg, 120 veg. caps Buy 4 bottles, price each	\$19.95 18.60	\$14.96 13.95		
00925	BENFOTIAMINE (MEGA) - 250 mg, 120 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01206	BERRY COMPLETE - 30 veg. caps Buy 4 bottles, price each	21.00 18.67	15.75 14.00		
01406	BERRY COMPLETE w/RZD™ ACAI (ENHANCED) - 60 veg. caps Buy 4 bottles, price each	29.00 26.00	21.75 19.50		
00664	BETA-CAROTENE - 25,000 IU, 100 softgels Buy 4 bottles, price each	11.25 10.13	8.44 7.60		
00653	BETTERWOMAN® - 40 caps Buy 4 bottles, price each	40.00 38.00	30.00 28.50		
01622	BIFIDO GI BALANCE - 60 caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01073	BILBERRY EXTRACT - 100 mg, 100 veg. caps Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
01512	BIOACTIVE MILK PEPTIDES - 30 caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01631	BIO-COLLAGEN w/PATENTED UC-II® - 60 caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
*01006	BIOSIL™ - 5 mg, 30 veg. caps	18.95	15.16		
*01007	BIOSIL™ - 1 fl oz	29.99	23.99		
00102	BIOTIN - 600 mcg, 100 caps Buy 4 bottles, price each	7.50 6.50	5.63 4.88		
00145	BIOTIN POWDER - 30 grams Buy 4 bottles, price each	12.50 11.00	9.38 8.25		
01709	BLACK CUMIN SEED OIL - 60 softgels Buy 4 bottles, price each	16.00 14.00	12.00 10.50		
01710	BLACK CUMIN SEED OIL w/BIO-CURCUMIN® - 60 softgels Buy 4 bottles, price each	32.00 30.00	24.00 22.50		
01008	BLAST™ - 600 grams of powder	26.95	20.21		
51526	BLENDER - 28 oz bottle	8.99	6.74		
70000	BLOOD PRESSURE MONITOR - ARM CUFF (medium)	99.95	64.97		
70004	BLOOD PRESSURE MONITOR - WRIST (travel size)	69.95	52.46		
01214	BLUEBERRY EXTRACT - 60 veg. caps Buy 4 bottles, price each	22.50 20.00	16.88 15.00		
01438	BLUEBERRY EXTRACT w/ POMEGRANATE - 60 veg. caps Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01506	BONE FORMULA (DR. STRUM'S INTENSIVE) - 300 veg. caps Buy 4 bottles, price each	56.00 50.00	42.00 37.50		
01611	BONE RESTORE - 150 caps Buy 4 bottles, price each	22.50 19.50	16.88 14.63		
01711	BONE RESTORE w/VITAMIN K2 - 150 caps Buy 4 bottles, price each	26.00 23.00	19.50 17.25		
01211	BONE STRENGTH FORMULA w/KOACT® - 120 caps Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
00313	BONE-UP® - 240 caps Buy 4 bottles, price each	24.95 22.50	18.71 16.88		
01379	BOOSTER - 60 softgels Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01680	BOOSTER w/ADVANCED K2 COMPLEX (SUPER) - 60 softgels Buy 4 bottles, price each	42.00 38.00	31.50 28.50		
00621	BORON - 3 mg, 100 caps Buy 4 bottles, price each	5.95 5.25	4.46 3.94		

SUB-TOTAL OF COLUMN 2

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS JANUARY 31, 2013
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00202	BOSWELLA - 100 caps Buy 4 bottles, price each	\$38.00 30.00	\$28.50 22.50		
00258	BOSWELLA TOPICAL CREAM - 4 oz Buy 4 jars, price each	15.00 13.00	11.25 9.75		
01253	BRANCHED CHAIN AMINO ACIDS - 90 veg. caps Buy 4 bottles, price each	19.50 17.00	14.63 12.75		
01699	BREAST HEALTH FORMULA - 60 veg. caps Buy 4 bottles, price each	34.00 30.00	25.50 22.50		
00893	BRITE EYES III - 2 vials, 5 ml each Buy 4 boxes, price each	34.00 32.00	25.50 24.00		
00136	BROMELAIN POWDER - 100 grams Buy 4 bottles, price each	21.00 18.75	15.75 14.06		
01203	BROMELAIN (SPECIALLY-COATED) - 500 mg, 60 enteric coated tablets Buy 4 bottles, price each	21.00 19.00	15.75 14.25		
00884	BUTTERBUR EXT. w/STANDARDIZED ROSMARINIC ACID - 60 softgels Buy 4 bottles, price each	44.00 39.60	33.00 29.70		
C					
01653	CALCIUM CITRATE w/VITAMIN D - 300 veg. caps Buy 4 bottles, price each	\$24.00 21.25	\$18.00 15.94		
01651	CALCIUM D-GLUCARATE - 200 mg, 60 veg. caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
01693	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR - 414 grams powder Buy 4 jars, price each Buy 8 jars, price each	60.00 54.00 50.00	45.00 40.50 37.50		
01694	CALORIE CONTROL WEIGHT MANAGEMENT FORMULA w/COFFEEGENIC™ GREEN COFFEE EXTRACT BLUEBERRY FLAVOR - 60 individual packs Buy 4 boxes, price each Buy 8 boxes, price each	64.00 60.00 56.00	48.00 45.00 42.00		
00118	CAPSULE FILLER MACHINE FOR "00" CAPSULES Buy 4 machines, price each	18.95 18.25	14.21 13.69		
00613	CAPSULE FILLER MACHINE FOR "0" CAPSULES Buy 4 machines, price each	18.95 18.25	14.21 13.69		
01700	CARDIO PEAK™ w/STANDARDIZED HAWTHORN & ARJUNA - 120 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
00916	CARNITINE w/GLYCOCARN® (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	36.00 32.00	27.00 24.00		
01532	L-CARNITINE - 500 mg, 30 veg. caps Buy 4 bottles, price each	15.00 13.20	11.25 9.90		
01258	CARNOSOOTHE w/PICROPROTECT™ - 60 veg. caps Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
01687	CARNOSINE (SUPER) - 500 mg, 90 veg. caps Buy 4 bottles, price each	66.00 60.00	49.50 45.00		
01003	CAT MIX - 100 grams powder Buy 4 jars, price each	15.00 12.00	11.25 9.00		
00390	CDP CHOLINE CAPS - 250 mg, 60 caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
00998	CELL SENSOR-EMF DETECTION METER	39.95	29.95		
01370	CHILDREN'S FORMULA LIFE EXTENSION MIX™ - 100 chewable tablets Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00550	CHLORELLA - 500 mg, 200 tablets Buy 4 bottles, price each	23.50 21.00	17.63 15.75		
01571	CHLOROPHYLLIN - 100 mg, 100 veg. caps Buy 4 bottles, price each	24.00 20.00	18.00 15.00		
01359	CHO-LESS™ - 90 capsules	32.50	24.38		

SUB-TOTAL OF COLUMN 3

No.		Retail Each	Member Each	Qty	Total
00541	CHOLINE CHLORIDE - 16 oz liquid Buy 4 bottles, price each	\$12.95 12.17	\$9.71 9.13		
00364	CHONDROITIN SULFATE CONCENTRATE - 400 mg, 60 tablets Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
01477	CHROMIUM ULTRA - 100 veg. caps Buy 4 bottles, price each	24.00 21.00	18.00 15.75		
01504	CHROMIUM W/CROMINEX® 3+ (OPTIMIZED) - 500 mcg, 60 veg. caps Buy 4 bottles, price each	9.00 8.00	6.75 6.00		
00551	CILANTRO HERBAL EXTRACT - 1 oz Buy 4 bottles, price each	12.00 11.00	9.00 8.25		
01503	CINSULIN® W/INSEA™ AND CROMINEX® 3+ - 90 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
00069	CITRUS BIOFLAVONOID - 100 caps Buy 4 bottles, price each	17.63 16.40	13.22 12.30		
00818	CLA BLEND W/SESAME LIGNANS (SUPER) - 1000 mg, 120 softgels Buy 4 bottles, price each Buy 10 bottles, price each	36.00 33.00 26.33	27.00 24.75 19.75		
00819	CLA BLEND w/GUARANA & SESAME (SUPER) -1000 mg, 120 softgels Buy 4 bottles, price each	42.00 38.33	31.50 28.75		
00050	COD LIVER OIL (EMULSIFIED) - 12 fl oz (355 ml) Buy 4 bottles, price each	15.59 13.10	11.69 9.83		
00293	COD LIVER OIL (EMULSIFIED) - 100 softgels (Emulsified) Buy 4 bottles, price each	10.97 10.34	8.23 7.76		
01707	COFFEEGENIC™ WEIGHT MANAGEMENT™ w/GREEN COFFEE EXTRACT - 90 veg. caps Buy 4 bottles, price each	48.00 42.00	36.00 31.50		
01697	COGNITEX® w/PREGNENOLONE & NEUROPROTECTION COMPLEX - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	74.00 66.60 58.89	55.50 49.95 44.17		
01696	COGNITEX® w/o PREGNENOLONE w/NEUROPROTECTION COMPLEX - 90 softgels Buy 4 bottles, price each Buy 8 bottles, price each	72.00 64.00 56.96	54.00 48.00 42.72		
01421	COGNITEX® BASICS - 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	38.00 35.00 32.00	28.50 26.25 24.00		
00110	COMPLETE B-COMPLEX - 180 caps Buy 4 bottles, price each	21.50 18.00	16.13 13.50		
00119	COPPER CAPSULES - 2 mg, 100 caps Buy 4 bottles, price each	9.91 8.96	7.43 6.72		
00949	COQ10™ w/ #LIMONENE (SUPER ABSORBABLE) - 50 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	25.00 22.00 20.00	18.75 16.50 15.00		
00950	COQ10™ w/ #LIMONENE (SUPER ABSORBABLE) - 100 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	66.00 60.00 56.00	49.50 45.00 42.00		
01226	COQ10 (SUPER UBIQUINOL) - 100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	56.00 52.00 48.00	42.00 39.00 36.00		
01426	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -100 mg, 60 softgels Buy 4 bottles, price each Buy 10 bottles, price each	62.00 56.00 52.00	46.50 42.00 39.00		
01425	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -50 mg, 100 softgels Buy 4 bottles, price each Buy 10 bottles, price each	58.00 53.00 50.00	43.50 39.75 37.50		
01427	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -50 mg, 30 softgels Buy 4 bottles, price each	20.00 18.00	15.00 13.50		

SUB-TOTAL OF COLUMN 4

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

FEBRUARY 2013

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call: 1-954-766-8433 or 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
C CONTINUED					
01431	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (SUPER UBIQUINOL) -200 mg, 30 softgels	\$62.00	\$46.50		
	Buy 4 bottles, price each	56.00	42.00		
	Buy 10 bottles, price each	52.00	39.00		
01397	CORDYCEPS CS-4™ - 60 veg. caps	29.99	22.49		
01053	CORIOLUS SUPER STRENGTH - 600 mg, 150 veg. caps	99.95	74.96		
80140	COSMESIS ADVANCED UNDER EYE SERUM w/STEM CELLS - .33 oz	49.00	36.75		
	Buy 2 bottles, price each	42.00	31.50		
80139	COSMESIS AMBER SELF MICRODERMABRASION - 2 oz	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80118	COSMESIS ANTI-AGING MASK - 2 oz	72.00	54.00		
	Buy 2 bottles, price each	63.36	47.52		
80134	COSMESIS ANTI-GLYCATION SERUM - 1 oz W/BLEUBERRY & POMEGRANATE EXTRACTS	33.00	24.75		
	Buy 2 bottles, price each	31.35	23.51		
80133	COSMESIS ANTIOXIDANT FACIAL MIST - 2 oz	32.00	24.00		
	Buy 2 bottles, price each	30.40	22.80		
80127	COSMESIS ANTIOXIDANT REJUVENATING FOOT CREAM - 2 oz	45.00	33.75		
	Buy 2 jars, price each	42.80	32.10		
80128	COSMESIS ANTIOXIDANT REJUVENATING FOOT SCRUB - 2 oz	59.00	44.25		
	Buy 2 jars, price each	51.92	38.94		
80117	COSMESIS ANTIOXIDANT REJUVENATING HAND CREAM - 2 oz	64.00	48.00		
	Buy 2 jars, price each	57.49	43.12		
80121	COSMESIS ANTIOXIDANT REJUVENATING HAND SCRUB - 2 oz	58.00	43.50		
	Buy 2 jars, price each	51.04	38.28		
80105	COSMESIS ANTI-REDNESS & BLEMISH LOTION - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80147	COSMESIS BIOFLAVONOID CREAM - 1 oz jar	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80144	COSMESIS BROCCOLI SPROUT CREAM - 1 oz	46.00	34.50		
	Buy 2 jars, price each	39.00	29.25		
80120	COSMESIS CORRECTIVE CLEARING MASK - 2 oz	64.50	48.38		
	Buy 2 jars, price each	56.76	42.57		
80141	COSMESIS DNA REPAIR CREAM - 1 oz jar	49.00	36.75		
	Buy 2 jars, price each	42.00	31.50		
80108	COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 oz	74.95	56.21		
	Buy 2 bottles, price each	65.95	49.46		
80123	COSMESIS FACE REJUVENATING ANTIOXIDANT CREAM - 2 oz	69.50	52.13		
	Buy 2 jars, price each	61.16	45.87		
80107	COSMESIS FINE LINE-LESS - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80131	COSMESIS HAIR SUPPRESS FORMULA - 4 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80137	COSMESIS HEALING FORMULA ALL-IN-ONE CREAM - 1 oz	53.00	39.75		
	Buy 2 jars, price each	45.43	34.07		
80115	COSMESIS HEALING MASK - 2 oz	64.50	48.38		
	Buy 2 bottles, price each	56.76	42.57		
80102	COSMESIS HEALING VITAMIN K CREAM - 1 oz	79.50	59.63		
	Buy 2 bottles, price each	69.96	52.47		
80109	COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80110	COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER - 1 oz	58.00	43.50		
	Buy 2 bottles, price each	51.04	38.28		
80138	COSMESIS HYDRATING ANTI-OXIDANT FACE MIST - 4 oz	39.95	29.96		
	Buy 2 bottles, price each	38.00	28.50		

SUB-TOTAL OF COLUMN 5

No.		Retail Each	Member Each	Qty	Total
80103	COSMESIS LIFTING & TIGHTENING COMPLEX - 1 oz	\$74.50	\$55.88		
	Buy 2 tubes, price each	65.56	49.17		
80146	COSMESIS LYCOPENE CREAM - 1 oz jar	28.00	21.00		
	Buy 2 jars, price each	25.40	19.05		
80135	COSMESIS MELATONIN CREAM - 1 oz	33.00	24.75		
	Buy 2 jars, price each	27.10	20.33		
80114	COSMESIS MILD FACIAL CLEANSER - 8 oz	59.00	44.25		
	Buy 2 bottles, price each	51.92	38.94		
80122	COSMESIS NECK REJUVENATING ANTIOXIDANT CREAM - 2 oz	64.00	48.00		
	Buy 2 jars, price each	56.32	42.24		
80111	COSMESIS PIGMENT CORRECTING CREAM - 1/2 oz	74.00	55.50		
	Buy 2 bottles, price each	65.12	48.84		
80106	COSMESIS REJUVENATING SERUM - 1 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80142	COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 oz	46.00	34.50		
	Buy 2 bottles, price each	39.00	29.25		
80112	COSMESIS SKIN LIGHTENING SERUM - 1/2 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80130	COSMESIS SKIN STEM CELL SERUM - 1 oz	74.00	55.50		
	Buy 2 bottles, price each	69.00	51.75		
80143	COSMESIS STEM CELL CREAM W/ALPINE ROSE - 1 oz jar	66.00	49.50		
	Buy 2 jars, price each	58.00	43.50		
80116	COSMESIS ULTRA LIP PLUMPER - 1/3 oz	64.00	48.00		
	Buy 2 bottles, price each	56.32	42.24		
80101	COSMESIS ULTRA WRINKLE RELAXER - 1 oz	89.95	67.46		
	Buy 2 bottles, price each	79.76	59.82		
80113	COSMESIS UNDER EYE REFINING SERUM - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80104	COSMESIS UNDER EYE RESCUE CREAM - 1/2 oz	74.50	55.88		
	Buy 2 bottles, price each	65.56	49.17		
80129	COSMESIS VITAMIN C SERUM - 1 oz	85.00	63.75		
	Buy 2 bottles, price each	74.80	56.10		
80136	COSMESIS VITAMIN D LOTION - 4 oz	36.00	27.00		
	Buy 2 bottles, price each	33.66	25.25		
80145	COSMESIS VITAMIN E-ESSENTIAL CREAM - 1 oz	28.00	21.00		
	Buy 2 jars, price each	26.00	19.50		
00862	CRAN-MAX® - 500 mg, 60 veg. caps	17.50	13.13		
	Buy 4 bottles, price each	15.00	11.25		
01424	CRAN-MAX® with UTIROSE™ (OPTIMIZED) - 60 veg. caps	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00609	CREATINE CAPSULES - 120 caps	10.95	8.21		
	Buy 4 bottles, price each	9.25	6.94		
00610	CREATINE POWDER - 500 grams	33.00	24.75		
	Buy 4 bottles, price each	30.00	22.50		
01646	CREATINE WHEY GLUTAMINE POWDER - 454 grams (vanilla)	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01429	CR MIMETIC LONGEVITY FORMULA - 60 veg. caps	39.00	29.25		
	Buy 4 bottles, price each	36.00	27.00		
*33840	CRWAY GREAT GLUCOSE CONTROL CD	98.00	82.00		
**CRWAY	CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE	195.00	195.00		
00407	CURCUMIN® (SUPER BIO) - 400 mg, 60 veg. caps	38.00	28.50		
	Buy 4 bottles, price each	35.00	26.25		

SUB-TOTAL OF COLUMN 6

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS JANUARY 31, 2013
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
D					
01313	DERMAWHEY - 400 mg, 60 caps Buy 4 bottles, price each	\$65.00 59.00	\$48.75 44.25		
00658	7-KETO® DHEA METABOLITE - 25 mg, 100 caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
01479	7-KETO® DHEA METABOLITE - 100 mg, 60 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
01640	DHA (VEGETARIAN SOURCED) - 200 mg, 30 veg. softgels Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
00607	DHEA - 25 mg, 100 tablets (dissolve in mouth) Buy 4 bottles, price each	14.00 11.75	10.50 8.81		
01478	DHEA COMPLETE - 60 veg. caps Buy 4 bottles, price each	48.00 43.20	36.00 32.40		
00335	DHEA - 25 mg, 100 caps Buy 4 bottles, price each	18.00 15.00	13.50 11.25		
00454	DHEA - 15 mg, 100 caps Buy 4 bottles, price each	14.00 12.00	10.50 9.00		
00882	DHEA - 50 mg, 60 caps Buy 4 bottles, price each	19.00 17.00	14.25 12.75		
01689	DHEA - 100 mg, 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01358	DIGEST RC - 30 tablets Buy 4 boxes, price each	19.95 17.00	14.96 12.75		
01272	DIGESTIVE ENZYMES (ENHANCED SUPER) - 100 veg. caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
01671	D,L-PHENYLALANINE CAPSULES - 500 mg, 100 veg. caps Buy 4 bottles, price each	18.75 16.00	14.06 12.00		
00257	DMAE BITARTRATE - 150 mg, 200 caps Buy 4 bottles, price each	14.00 10.50	10.50 7.88		
00059	DMG - 125 mg, 60 tablets Buy 4 boxes, price each	22.80 21.00	17.10 15.75		
01570	DNA PROTECTION FORMULA - 60 veg. caps Buy 4 bottles, price each	34.00 32.00	25.50 24.00		
00544	DOG MIX - 100 grams powder Buy 4 jars, price each	19.50 16.00	14.63 12.00		
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA - 2 oz Buy 4 bottles, price each	39.95 32.00	29.96 24.00		
00320	DR. PROCTOR'S HAIR FORMULA SHAMPOO - 8 oz Buy 4 bottles, price each	24.95 22.00	18.71 16.50		
00899	DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE - 2.4 oz Buy 4 jars, price each	39.95 38.95	29.96 29.21		
00240	DUAL-C - 90 caps Buy 4 bottles, price each	12.00 10.50	9.00 7.88		
E					
01528	ECHINACEA EXTRACT - 250 mg, 60 veg. caps Buy 4 bottles, price each	\$14.35 12.50	\$10.76 9.38		
01395	EDTA - 500 mg, 60 caps	9.98	7.49		
01321	ELASTIN & COLLAGEN BODY FIRING LOTION - 8 fl. oz.	10.00	7.50		
01498	ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels Buy 4 bottles, price each	56.00 52.00	42.00 39.00		
00997	ENDOTHELIAL DEFENSE™ w/GLISODIN® - 60 veg. caps Buy 4 bottles, price each	52.00 46.00	39.00 34.50		
00625	EPA/DHA (MEGA) - 120 softgels Buy 4 bottles, price each	19.95 18.00	14.96 13.50		
01042	EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01706	EXTRAORDINARY ENZYMES - 60 caps Buy 4 bottles, price each	26.00 24.00	19.50 18.00		

SUB-TOTAL OF COLUMN 7

No.		Retail Each	Member Each	Qty	Total
01514	EYE PRESSURE SUPPORT w/MIRTOGENOL® - 30 veg. caps Buy 4 bottles, price each	\$38.00 34.00	\$28.50 25.50		
F					
01054	FACE MASTER® PLATINUM	\$199.00	\$199.00		
00965	FAST-ACTING JOINT FORMULA - 30 caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
20053	FEM DOPHILUS® - 30 caps	25.95	19.46		
20055	FEM DOPHILUS® - 60 caps	39.95	29.96		
01064	FEMMENESSENCE MACAPAUSE® - 120 veg. caps	34.99	26.24		
01311	FERNBLOCK® w/SENDARA®(ENHANCED) - 30 veg. caps Buy 4 bottles, price each	39.00 35.00	29.25 26.25		
01670	FIBER FOOD CAPS - 200 veg. caps Buy 4 bottles, price each Buy 10 bottles, price each	16.00 14.00 13.00	12.00 10.50 9.75		
00718	FIBRINOGEN RESIST™ - 30 veg. caps Buy 4 bottles, price each	49.00 44.00	36.75 33.00		
00873	FLAXSEED POWDER (HI-LIGNAN® NUTRI-FLAX®) - 16 oz powder	9.95	7.46		
01384	FLORADIX® IRON & HERBS - 17 fl. oz	43.99	35.19		
01382	FLORAVITAL® IRON & HERBS - 17 fl. oz	43.99	35.19		
01439	FOLATE (OPTIMIZED) (L-METHYLFOLATE) 1000 mcg - 100 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01641	FOLIC ACID + B12 CAPSULES - 200 veg. caps Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
00300	FORSKOLIN - 10 mg, 60 caps Buy 4 bottles, price each	15.00 12.50	11.25 9.38		
01513	FUCOIDAN w/MARITECH® 926 (OPTIMIZED) - 60 veg. caps Buy 4 bottles, price each	36.00 33.00	27.00 24.75		
00993	FUCOXANTHIN-SLIM™ - 90 softgels Buy 4 bottles, price each	44.00 39.00	33.00 29.25		
G					
00127	GABA POWDER - 100 grams Buy 4 bottles, price each	\$23.75 22.50	\$17.81 16.88		
00559	GAMMA E TOCOPHEROL/TOCOTRIENOLS - 60 softgels Buy 4 bottles, price each	42.00 37.00	31.50 27.75		
00759	GAMMA E TOCOPHEROL w/SESAME LIGNANS - 60 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01394	(OPTIMIZED) GARLIC - 200 veg. caps Buy 4 bottles, price each	24.95 21.00	18.71 15.75		
00117	GELATIN CAPSULES - 1000 empty caps size "00" Buy 4 bags, price each	19.00 18.00	14.25 13.50		
01301	GH PITUITARY SUPPORT DAY FORMULA - 120 vegetarian tabs Buy 4 bottles, price each	48.00 44.00	36.00 33.00		
01302	GH PITUITARY SUPPORT NIGHT FORMULA - 120 veg. caps Buy 4 bottles, price each	25.00 22.50	18.75 16.88		
01228	GINGER FORCE - 60 softgels	29.95	22.46		
00778	GINKGO BILOBA CERTIFIED EXTRACT™ - 120 mg, 365 caps Buy 2 bottles, price each	46.00 43.50	34.50 32.63		
00504	GINKGO EXTRACT (SUPER) - 120 mg, 100 caps Buy 4 bottles, price each	29.00 26.50	21.75 19.88		
01032	(PANAX RED) GINSENG - 60 veg. caps	29.99	22.49		
00756	GLA WITH SESAME LIGNANS (MEGA) - 60 softgels Buy 4 bottles, price each	19.50 18.00	14.63 13.50		
00345	(L) GLUTAMINE CAPSULES - 500 mg, 100 caps Buy 4 bottles, price each	14.95 13.50	11.21 10.13		
00141	(L)-GLUTAMINE POWDER - 100 grams Buy 4 bottles, price each	22.00 20.00	16.50 15.00		

SUB-TOTAL OF COLUMN 8

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

FEBRUARY 2013

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call: 1-954-766-8433 or 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
00522	GLUCOSAMINE/CHONDROITIN CAPSULES - 100 caps Buy 4 bottles, price each	\$38.00 32.00	\$28.50 24.00		
00512	GLUCOFIT™ - 100 softgels Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
00113	GLUTATHIONE, CYSTEINE & C - 750 mg, 100 caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00314	L-GLUTATHIONE (MEGA) - 250 mg, 60 caps Buy 4 bottles, price each	39.64 35.68	29.73 26.76		
00795	GLYCINE - 1000 mg, 100 caps Buy 4 bottles, price each	12.00 10.80	9.00 8.10		
00128	GLYCINE POWDER - 300 grams Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01091	GRAPE EXTRACT w/RESVERATROL (WHOLE) - 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01411	GRAPE SEED EXTRACT w/RESVERATROL & PTEROSTILBENE - 100 mg, 60 veg. caps Buy 4 bottles, price each	36.00 34.00	27.00 25.50		
01604	GREEN COFFEE EXTRACT COFFEEGENIC™ - 200 mg, 90 veg. caps Buy 4 bottles, price each	25.00 22.00	18.75 16.50		
01620	GREEN COFFEE EXTRACT COFFEEGENIC™ - 400 mg, 90 veg. caps Buy 4 bottles, price each	38.00 34.00	28.50 25.50		
00953	GREEN TEA EXTRACT (MEGA) - lightly caffeinated - 100 veg. caps Buy 4 bottles, price each	28.00 26.50	21.00 19.88		
00954	GREEN TEA EXTRACT (MEGA) - decaffeinated - 100 veg. caps Buy 4 bottles, price each	28.00 26.50	21.00 19.88		

H

01074	5 HTP - 100 mg, 60 caps	\$27.95	\$20.96		
00010	HAIR CONDITIONER - 16 oz Buy 4 bottles, price each	6.00 4.50	4.50 3.38		
00230	HCA - 90 caps Buy 4 bottles, price each	18.00 15.50	13.50 11.63		
01629	HEAROS™ EAR PLUGS - 1 pack - regular size	14.00	10.50		
01635	HEAROS™ EAR PLUGS - 1 pack - small size	14.00	10.50		
01393	HEPATOPRO - 900 mg, 60 softgels Buy 4 bottles, price each	50.00 46.00	37.50 34.50		
01435	HOMOCYSTEINE RESIST - 100 caps Buy 4 bottles, price each	24.00 21.60	18.00 16.20		
01527	HUPERZINE A - 200 mcg, 60 veg caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00661	HYDRODERM® - 1 oz Buy 2 bottles, price each	79.95 65.33	59.96 49.00		

I

*01060	i26® HYPERIMMUNE EGG - 140 grams powder	\$49.99	\$42.00		
*01319	i26® HYPERIMMUNE EGG - 135 capsules	31.99	25.59		
*01318	i26® HYPERIMMUNE EGG CHEWABLES - (vanilla) 45 tablets	31.99	25.59		
01065	IDEAL BOWEL SUPPORT 299V - 30 veg. caps	21.95	16.46		
00955	IMMUNE PROTECT W/PARACTIN® - 30 veg. caps Buy 4 bottles, price each	29.50 26.55	22.13 19.91		
01049	INNERPOWER™ - 555 grams powder	42.00	31.50		
00155	INOSINE - 500 mg, 60 caps Buy 4 bottles, price each	22.95 21.00	17.21 15.75		
01674	INOSITOL CAPSULES - 1000 mg, 360 veg. caps Buy 4 bottles, price each	52.00 48.00	39.00 36.00		
00108	INOSITOL POWDER - 100 grams Buy 4 bottles, price each	18.00 16.88	13.50 12.66		

SUB-TOTAL OF COLUMN 9

No.		Retail Each	Member Each	Qty	Total
01292	INTEGRA-LEAN® IRVINGIA - 150 mg, 60 veg. caps Buy 4 bottles, price each	\$28.00 24.00	\$21.00 18.00		
01002	IODORAL® - 180 tabs	50.00	37.50		
01677	IRON PROTEIN PLUS - 300 mg, 100 veg. caps Buy 4 bottles, price each	28.00 26.00	21.00 19.50		
01492	IRVINGIA W/PHASE 3™ - 120 veg. caps CALORIE CONTROL COMPLEX (OPTIMIZED) Buy 4 bottles, price each	56.00 48.00	42.00 36.00		

J, K

00056	JARRO-DOPHILUS EPS™ - 60 veg. caps	\$21.95	\$16.46		
01387	JARRO-DOPHILUS ORAL PROBIOTIC GUM - Pom-Berry flavor, 8 pieces	4.95	3.71		
01388	JARRO-DOPHILUS ORAL PROBIOTIC LOZENGE - Pom-Berry flavor, 8 pieces	4.95	3.71		
01724	K w/ADVANCED K2 COMPLEX (SUPER) - 90 softgels Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01600	KRILL HEALTHY JOINT FORMULA - 30 softgels Buy 4 bottles, price each	32.00 29.00	24.00 21.75		
01050	(NKO) KRILL OIL - 60 softgels	33.95	25.46		
00316	KYOLIC® GARLIC FORMULA 102 - 200 caps Buy 4 bottles, price each	23.95 20.50	17.96 15.38		
00214	KYOLIC® GARLIC FORMULA 105 - 200 caps Buy 4 bottles, price each	22.95 18.25	17.21 13.69		
00789	KYOLIC® RESERVE - 600 mg, 120 caps Buy 4 bottles, price each	24.75 21.45	18.56 16.09		

L

01681	LACTOFERRIN (APOLACTOFERRIN) CAPS - 60 veg. caps Buy 4 bottles, price each	\$48.00 44.00	\$36.00 33.00		
00017	LAVILIN UNDERARM DEODORANT - 12.5 grams cream Buy 4 jars, price each	16.99 15.75	12.74 11.81		
00020	LECITHIN - 16 oz. granules Buy 4 jars, price each	15.00 12.50	11.25 9.38		
01755	LIFE EXTENSION MIX™ - 315 tablets Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01757	LIFE EXTENSION MIX™ W/EXTRA NIACIN - 315 tablets Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01754	LIFE EXTENSION MIX™ - 490 caps Buy 4 bottles, price each Buy 10 bottles, price each	110.00 98.00 85.00	82.50 73.50 63.75		
01756	LIFE EXTENSION MIX™ POWDER - 14.81 oz Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 72.00	73.50 64.50 54.00		
01765	LIFE EXTENSION MIX™ - 315 tablets w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01767	LIFE EXTENSION MIX™ W/EXTRA NIACIN 315 tablets w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 69.50	73.50 64.50 52.13		
01764	LIFE EXTENSION MIX™ - 490 caps w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	110.00 98.00 85.00	82.50 73.50 63.75		
01766	LIFE EXTENSION MIX™ POWDER - 14.81 oz w/o copper Buy 4 bottles, price each Buy 10 bottles, price each	98.00 86.00 72.00	73.50 64.50 54.00		

SUB-TOTAL OF COLUMN 10

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS JANUARY 31, 2013
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
00263	LIFE FLORA™ - 300 mg, 120 caps Buy 4 bottles, price each	\$20.50 18.75	\$15.38 14.06		
01608	LIVER EFFICIENCY FORMULA - 30 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01227	LIVER FORCE - 60 veg. caps	34.95	26.21		
01639	5-LOX INHIBITOR W/APRESFLEX™ - 100 mg, 60 veg. caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01678	L-LYSINE - 620 mg, 100 veg. caps Buy 4 bottles, price each	9.00 8.00	6.75 6.00		
00129	L-LYSINE POWDER - 300 grams Buy 4 bottles, price each	16.00 13.75	12.00 10.31		
01470	LURALEAN® CAPS SPECIAL PROPOLMANNAN PARTICLE SIZE - 120 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
00455	LYCOPENE EXTRACT (MEGA) - 15 mg, 90 softgels Buy 4 bottles, price each	35.00 30.00	26.25 22.50		
M					
01369	MAGNESIUM CAPS - 500 mg, 100 veg. caps Buy 4 bottles, price each	\$10.00 9.00	\$7.50 6.75		
01682	MAGNESIUM CITRATE - 160 mg, 100 veg. caps Buy 4 bottles, price each	9.00 7.50	6.75 5.63		
00704	MAITAKE™ SX-FRACTION - 90 veg. tablets	49.95	37.46		
00547	MELATONIN - 300 mcg, 100 caps Buy 4 bottles, price each	5.75 5.00	4.31 3.75		
01083	MELATONIN - 500 mcg, 200 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00329	MELATONIN - 1 mg, 60 caps Buy 4 bottles, price each	5.00 4.63	3.75 3.47		
00330	MELATONIN - 3 mg, 60 caps Buy 4 bottles, price each	8.00 6.88	6.00 5.16		
01086	MELATONIN - 3 mg, 60 time-release veg. caps Buy 4 bottles, price each	10.50 9.38	7.88 7.04		
00331	MELATONIN - 10 mg, 60 caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
00332	MELATONIN - 3 mg, 60 lozenges Buy 4 bottles, price each	8.00 6.88	6.00 5.16		
01087	MELATONIN TIME RELEASE - 300 mcg, 100 veg. caps Buy 4 bottles, price each	6.25 5.63	4.69 4.22		
01088	MELATONIN TIME RELEASE - 750 mcg, 60 veg. caps Buy 4 bottles, price each	5.75 5.00	4.31 3.75		
01009	MEMORY UPGRADE™ - 600 grams powder	26.95	20.21		
01536	METHYLCOBALAMIN - 1 mg, 60 lozenges (vanilla) Buy 4 bottles, price each	9.95 8.00	7.46 6.00		
01537	METHYLCOBALAMIN - 5 mg, 60 lozenges (vanilla) Buy 4 bottles, price each Buy 10 bottles, price each	32.00 25.00 23.00	24.00 18.75 17.25		
00709	MIGRA-EZZE™ (BUTTERBUR) - 60 softgels Buy 4 bottles, price each	29.50 26.33	22.13 19.75		
01522	MILK THISTLE (CERTIFIED EUROPEAN) - 750 mg, 60 veg. caps Buy 4 bottles, price each	34.00 30.00	25.50 22.50		
01517	MILK THISTLE (CERTIFIED EUROPEAN) - 120 veg. caps Buy 4 bottles, price each	52.00 48.00	39.00 36.00		

SUB-TOTAL OF COLUMN 11

No.		Retail Each	Member Each	Qty	Total
01673	MINERAL FORMULA FOR MEN - 100 veg. caps Buy 4 bottles, price each Buy 12 bottles, price each	\$15.00 12.50 10.83	\$11.25 9.38 8.13		
01539	MINERAL FORMULA FOR WOMEN - 100 veg. caps Buy 4 bottles, price each Buy 12 bottles, price each	15.00 12.50 10.83	11.25 9.38 8.13		
01698	MIRAFORTE w/STANDARDIZED LIGNANS (SUPER) - 120 caps Buy 4 bottles, price each	62.00 56.00	46.50 42.00		
01569	MITOCHONDRIAL BASICS w/BIOPQQ™ - 30 caps Buy 4 bottles, price each	52.00 46.00	39.00 34.50		
01568	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ™ - 120 caps Buy 4 bottles, price each	94.00 84.00	70.50 63.00		
00803	MIST ORAL III w/COQ10 - 2 fl oz Buy 4 bottles, price each	28.00 25.33	21.00 19.00		
00065	MK-7 - 90 mcg, 60 softgels Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01279	MOUTHWASH W/POMEGRANATE - 16 oz Buy 4 bottles, price each	18.50 17.00	13.88 12.75		
00451	MSM (METHYLSULFONYLMETHANE) - 1000 mg, 100 caps Buy 4 bottles, price each	14.00 11.95	10.50 8.96		
N					
01534	N-ACETYL-L-CYSTEINE - 600 mg, 60 veg. caps Buy 4 bottles, price each	\$14.00 13.50	\$10.50 10.13		
00066	NATOKINASE - 60 softgels	25.50	19.13		
00891	NATURAL APPETITE CONTROL - 90 softgels Buy 4 bottles, price each	28.00 25.20	21.00 18.90		
00984	NATURAL BP MANAGEMENT - 60 tablets Buy 4 bottles, price each	42.00 37.80	31.50 28.35		
00913	NATURAL ESOPHAGUARD - 10 softgels Buy 2 boxes, price each	19.95 19.00	14.96 14.25		
00712	NATURAL ESTROGEN w/POMEGRANATE EXTRACT - 60 caplets Buy 4 bottles, price each	38.00 33.00	28.50 24.75		
01221	NATURAL FEMALE SUPPORT - 30 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		
01471	NATURAL GLUCOSE ABSORPTION CONTROL - 60 veg. caps Buy 4 bottles, price each	39.00 36.00	29.25 27.00		
00698	NATURAL RELIEF 1222™ - 2 oz Buy 4 tubes, price each	28.00 25.00	21.00 18.75		
01626	NATURAL SEX FOR WOMEN® 50+ (ADVANCED) - 90 veg. caps Buy 4 bottles, price each	59.00 45.33	44.25 34.00		
01084	NATURAL SLEEP® - 3 mg, 60 veg. caps Buy 4 bottles, price each	12.99 10.00	9.74 7.50		
01507	NATURAL SLEEP® (ENHANCED) W/ MELATONIN - 30 caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01511	NATURAL SLEEP® (ENHANCED) W/O MELATONIN - 30 caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01085	NATURAL SLEEP MELATONIN® - 5 mg, 60 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00987	NATURAL STRESS RELIEF - 30 veg. caps Buy 4 bottles, price each	28.00 24.00	21.00 18.00		

SUB-TOTAL OF COLUMN 12

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

FEBRUARY 2013

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call: 1-954-766-8433 or 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
N CONTINUED					
01603	NEURO-MAG™ MAGNESIUM L-THREONATE - 90 veg. caps Buy 4 bottles, price each	\$40.00 36.00	\$30.00 27.00		
01602	NEURO-MAG™ L-THREONATE W/CALCIUM & VITAMIN D 205 grams - Lemon flavor Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00373	NO-FLUSH NIACIN - 800 mg, 100 caps Buy 4 bottles, price each	19.00 17.00	14.25 12.75		
01035	NUTRIM - 225 grams powder	25.95	19.46		
O					
01623	OLIVE LEAF VASCULAR SUPPORT - 500 mg, 60 veg. caps Buy 4 bottles, price each	\$22.00 20.00	\$16.50 15.00		
01483	OMEGA 3 EPA/DHA W/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 60 softgels Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
01482	OMEGA 3 EPA/DHA W/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 120 softgels Buy 4 bottles, price each Buy 10 bottles, price each	32.00 28.00 24.90	24.00 21.00 18.68		
01484	OMEGA 3 EPA/DHA W/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) - 120 enteric coated softgels Buy 4 bottles, price each Buy 10 bottles, price each	34.00 31.00 28.00	25.50 23.25 21.00		
01619	OMEGA 3 EPA/DHA W/SESAME LIGNANS & OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL) - 240 softgels Buy 4 bottles, price each Buy 10 bottles, price each	32.00 28.00 24.90	24.00 21.00 18.68		
01632	OMEGA-3 LEMON WHIRL - 16 oz bottle Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01633	OMEGA-3 TROPICAL WHIRL - 16 oz bottle Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01701	ONE-PER-DAY - 60 tablets Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01328	ONLY TRACE MINERALS - 90 caps Buy 4 bottles, price each	15.00 12.50	11.25 9.38		
00915	OPTIZINC® - 30 mg, 90 veg. caps Buy 4 bottles, price each	5.95 5.00	4.46 3.75		
01070	ORGANIC TOTAL BODY CLEANSE™ - 14-day supply	34.99	26.24		
P					
00107	PABA CAPS - 500 mg, 100 caps Buy 4 bottles, price each	\$15.42 13.59	\$11.57 10.19		
00073	PANCREATIN - 500 mg, 50 caps Buy 4 bottles, price each	13.22 12.12	9.92 9.09		
01323	PEAK ATP® WITH GLYCOCARIN® - 60 veg. caps Buy 4 bottles, price each	59.00 56.00	44.25 42.00		
00342	PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder Buy 4 jars, price each	99.95 95.70	74.96 71.78		
01080	PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps	69.95	52.46		
00673	PGX™ SOLUBLE FIBER BLEND (WELLBETX®) -180 caps	34.95	26.21		
00865	PHARMAGABA™ - 60 chewable tablets Buy 4 bottles, price each	29.95 27.00	22.46 20.25		
01676	PHOSPHATIDYL SERINE CAPS - 100 mg, 100 veg. caps Buy 4 bottles, price each	54.00 48.00	40.50 36.00		
01390	PHOSPHOMEGA® - 60 softgels	39.95	26.96		

SUB-TOTAL OF COLUMN 13

No.		Retail Each	Member Each	Qty	Total
00561	POLICOSANOL - 10 mg, 60 tablets Buy 6 bottles, price each	\$24.00 18.00	\$18.00 13.50		
01423	POMEGRANATE™ (FULL-SPECTRUM) - 30 softgels Buy 4 bottles, price each	24.00 21.00	18.00 15.75		
00956	POMEGRANATE EXTRACT - 30 veg. caps Buy 4 bottles, price each	19.50 17.55	14.63 13.16		
00957	POMEGRANATE JUICE CONCENTRATE - 16 oz. liquid Buy 4 bottles, price each	25.95 24.00	19.46 18.00		
00577	POTASSIUM IODIDE - 1 box, 14 tablets Buy 4 boxes, price each	6.95 5.25	5.21 3.94		
01500	PQQ CAPS W/BIOPQQ™ - 10 mg, 30 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01647	PQQ CAPS W/BIOPQQ™ - 20 mg, 30 veg. caps Buy 4 bottles, price each	40.00 36.00	30.00 27.00		
00302	PREGNENOLONE - 50 mg, 100 caps Buy 4 bottles, price each	26.00 22.00	19.50 16.50		
00700	PREGNENOLONE - 100 mg, 100 caps Buy 4 bottles, price each	26.00 22.50	19.50 16.88		
***01373	PRELOX® NATURAL SEX FOR MEN® - 60 tablets Buy 4 bottles, price each	52.00 48.00	39.00 36.00		
00571	PRIMAL DEFENSE™ - 90 caplets Buy 4 bottles, price each	49.95 48.50	37.46 36.38		
01329	PROBIOTIC ALL-FLORA® - 60 veg. caps	25.95	19.46		
01326	PROBIOTIC ANTI-AGING™ - 90 veg. caps	30.95	23.21		
01322	PROBIOTIC COLON™ - 90 veg. caps	30.95	23.21		
00525	PROBOOST THYMIC PROTEIN A™ - 4 mcg, 30 packets	59.95	44.96		
01441	PROGESTACARE FOR WOMEN - 4 oz cream	34.95	26.21		
01020	PROGREENS® - 15 stick pack	22.50	16.88		
01072	PRO-M INTERNAL DEODORIZER - 500 mg, 100 veg. caps Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01695	PROSTATE FORMULA W/APRESFLEX™ STAND. LIGNANS (ULTRA NAT) 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	38.00 35.00 32.00	28.50 26.25 24.00		
01642	PROTEIN - VANILLA - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01643	PROTEIN - CHOCOLATE - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01644	PROTEIN - NATURAL - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01645	PROTEIN - BERRY - (Enhanced Life Extension) -1 lb. powder Buy 4 bottles, price each	30.00 27.00	22.50 20.25		
01508	PTEROPURE™ - 50 mg Pterostilbene 60 veg. caps Buy 4 bottles, price each	32.00 30.00	24.00 22.50		
01075	PURE PLANT PROTEIN - Natural Vanilla 450 grams powder Buy 4 jars, price each	36.00 33.00	27.00 24.75		
01209	PUMPKIN SEED EXTRACT (WATER-SOLUBLE) - 60 veg. caps Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01210	PUMPKIN SEED EXT W/SOY ISOFLAVONES (WATER-SOLUBLE) - 60 veg. caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		
01637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT -100 mg, 60 veg. caps Buy 4 bottles, price each	64.00 60.00	48.00 45.00		
01217	PYRIDOXAL 5'-PHOSPHATE - 100 mg, 60 veg. caps Buy 4 bottles, price each	22.00 19.80	16.50 14.85		

SUB-TOTAL OF COLUMN 14

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

OFFER ENDS JANUARY 31, 2013
To order online visit www.LifeExtension.com/SuperSale

Buyers Club Order Form

No.		Retail Each	Member Each	Qty	Total
Q, R					
01309	QUERCETIN (OPTIMIZED) - 250 mg, 60 veg. caps	\$18.00	\$13.50		
	Buy 4 bottles, price each	17.00	12.75		
01030	RED YEAST RICE (Bluebonnet)- 600 mg, 60 veg. caps	17.50	13.13		
00979	RED YEAST RICE (Nature's Plus)- 600 mg, 60 veg. caps	23.95	17.96		
00060	RED YEAST RICE EXTENDED RELEASE - 30 veg. tablets	21.50	16.13		
00605	REGIMINT - 60 enteric-coated caps	19.95	14.96		
	Buy 4 bottles, price each	18.67	14.00		
01708	REISHI EXTRACT MUSHROOM COMPLEX - 60 veg. caps	30.00	22.50		
	Buy 4 bottles, price each	27.00	20.25		
01448	REJUVENEX® BODY LOTION - 6 oz	24.00	18.00		
	Buy 4 tubes, price each	19.80	14.85		
	Buy 8 tubes, price each	17.00	12.75		
00918	REJUVENEX® FACTOR - 1.7 oz airless pump	65.00	48.75		
	Buy 2 bottles, price each	60.00	45.00		
	Buy 4 bottles, price each	55.00	41.25		
	Buy 8 bottles, price each	49.91	37.43		
01621	REJUVENEX® FACTOR FIRING SERUM - 1.7 oz	65.00	48.75		
	Buy 2 bottles, price each	50.66	38.00		
	Buy 6 bottles, price each	38.52	28.89		
01220	REJUVENEX® (ULTRA) - 2 oz	52.00	39.00		
	Buy 2 jars, price each	48.00	36.00		
	Buy 4 jars, price each	44.00	33.00		
	Buy 8 jars, price each	39.93	29.95		
00676	REJUVENIGHT® (ULTRA) - 2 oz	39.95	29.96		
	Buy 4 jars, price each	36.00	27.00		
01413	RESVERATROL W/PTEROSTILBENE - 20 mg, 60 veg. caps	24.00	18.00		
	Buy 4 bottles, price each	22.00	16.50		
01410	RESVERATROL W/PTEROSTILBENE - 100 mg, 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
01430	RESVERATROL w/SYNERGISTIC GRAPE-BERRY ACTIVES (OPTIMIZED) - 250 mg, 60 veg. caps	46.00	34.50		
	Buy 4 bottles, price each	41.33	31.00		
00889	RHODIOLA EXTRACT - 250 mg, 60 veg. caps	11.75	8.81		
	Buy 4 bottles, price each	10.58	7.94		
00972	(D) RIBOSE POWDER - 150 grams	27.50	20.63		
	Buy 4 jars, price each	24.75	18.56		
01473	(D) RIBOSE TABLETS - 100 veg. tabs	32.00	24.00		
	Buy 4 bottles, price each	28.00	21.00		
01609	RICH REWARDS™ BREAKFAST GROUND COFFEE - 12 oz. bag	13.00	9.75		
01610	RICH REWARDS™ DECAFFEINATED ROAST GROUND COFFEE - 12 oz. bag	14.00	10.50		
01530	RICH REWARDS™ CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01531	RICH REWARDS™ (SPICY) CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle	11.95	8.96		
	Buy 6 bottles, price each	11.25	8.44		
01705	RICH REWARDS™ LENTIL VEGETABLE SOUP - 32 oz. bottle	13.00	9.75		
	Buy 6 bottles, price each	12.25	9.19		
01208	R-LIPOIC ACID (SUPER) - 300 mg, 60 veg. caps	49.00	36.75		
	Buy 4 bottles, price each	45.00	33.75		
00070	RNA CAPSULES - 500 mg, 100 caps	17.95	13.46		
	Buy 4 bottles, price each	16.16	12.12		
00917	ROSMARINIC ACID EXTRACT - 60 veg. caps	59.00	44.25		
	Buy 4 bottles, price each	53.00	39.75		

SUB-TOTAL OF COLUMN 15

No.		Retail Each	Member Each	Qty	Total
S					
01067	SACCHAROMYCES BOULARDII + MOS - 90 veg. caps	\$21.95	\$16.46		
01432	SAFFRON w/SATIREAL (OPTIMIZED) - 60 veg. caps	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
*00573	SAMBU® GUARD - 175 ml	17.79	14.23		
00358	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets	16.00	12.00		
	Buy 8 boxes, price each	14.00	10.50		
00453	SAME (S-ADENOSYL-METHIONINE) - 200 mg, 50 enteric coated tablets	36.00	27.00		
	Buy 4 bottles, price each	32.00	24.00		
00557	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets	28.00	21.00		
	Buy 6 boxes, price each	24.00	18.00		
01055	SAME (S-ADENOSYL-METHIONINE) - 400 mg, 50 enteric coated tablets	66.00	49.50		
	Buy 4 bottles, price each	60.00	45.00		
01543	SEA-IODINE™ - 1000 mcg, 60 caps	8.00	6.00		
	Buy 4 bottles, price each	7.20	5.40		
00046	SELENIUM - 2 oz dropper bottle	9.95	7.46		
	Buy 4 bottles, price each	9.45	7.09		
01679	SE-METHYL L-SELENOCYSTEINE - 200 mcg, 100 veg. caps	12.00	9.00		
	Buy 4 bottles, price each	11.00	8.25		
00318	SERRAFLAZYME - 100 tablets	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
00011	SHAMPOO - 16 fl oz	6.00	4.50		
	Buy 4 bottles, price each	4.75	3.56		
00284	SHARK LIVER OIL (NORWEGIAN) - 1000 mg, 30 softgels	18.00	13.50		
	Buy 4 bottles, price each	16.00	12.00		
01684	SILYMARIN - 100 mg, 50 veg. caps	9.25	6.94		
	Buy 4 bottles, price each	8.25	6.19		
01502	SKIN RESTORING PHYTCERAMIDES w/LIPOHEAT™ - 30 liquid caps	25.00	18.75		
	Buy 4 bottles, price each	23.00	17.25		
00961	SODZYME® w/GLISODIN® AND WOLFBERRY - 90 veg. caps	28.00	21.00		
	Buy 4 bottles, price each	24.00	18.00		
00657	SOLARSHIELD SUNGLASSES - 1 pair smoke color	12.99	9.74		
	Buy 2 pairs, price each	11.50	8.63		
01097	SOY EXTRACT (ULTRA) - 150 veg. caps	87.00	65.25		
	Buy 4 bottles, price each	78.00	58.50		
00286	SOY PROTEIN CONCENTRATE - 16 oz of powder	16.00	12.00		
	Buy 4 jars, price each	14.00	10.50		
01099	STABILUM® 200 - 30 caps	30.00	22.50		
00432	STEVIA EXTRACT - 100 packets, 1 gram each	9.95	7.46		
	Buy 4 boxes, price each	9.00	6.75		
01396	ST. JOHN'S WORT EXTRACT - 300 mg, 60 veg. caps	10.98	8.24		
	Buy 4 bottles, price each	10.00	7.50		
00327	ST. JOHN'S WORT EXTRACT (PLANETARY) - 600 mg, 60 tablets	16.75	12.56		
	Buy 4 bottles, price each	13.85	10.39		
01476	STRONTIUM - 750 mg, 90 veg. caps	20.00	15.00		
	Buy 4 bottles, price each	18.00	13.50		
00747	SUNGLASSES (OVERCAST POLARIZED) - gray color, large	27.00	20.25		
	Buy 2 pairs, price each	21.00	15.75		
00748	SUNGLASSES (OVERCAST POLARIZED) - gray color, medium	27.00	20.25		
	Buy 2 pairs, price each	21.00	15.75		

SUB-TOTAL OF COLUMN 16

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

FEBRUARY 2013

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

Buyers Club Order Form

SUPER SALE SAVINGS ON ALL PRODUCTS
To order call: 1-954-766-8433 or 1-800-544-4440

No.		Retail Each	Member Each	Qty	Total
S CONTINUED					
01649	SUPER ABSORBABLE SOY ISOFLAVONES - 60 veg. caps Buy 4 bottles, price each	\$28.00 25.00	\$21.00 18.75		
01381	SUPERCritical OMEGA 7™ - 60 softgels caps	56.95	42.71		
01408	SUPER SAW PALMETTO/NETTLE ROOT W/BETA-SITOSTEROL 60 softgels Buy 4 bottles, price each Buy 12 bottles, price each	28.00 26.00 24.00	21.00 19.50 18.00		
01407	SUPER SAW PALMETTO W/BETA-SITOSTEROL - 30 softgels Buy 12 bottles, price each	15.00 12.00	11.25 9.00		
01778	SUPER SELENIUM COMPLEX - 200 mcg, 100 veg. caps Buy 4 bottles, price each Buy 12 bottles, price each	14.00 12.00 11.00	10.50 9.00 8.25		
00674	SYTRINOL™ - 60 softgels Buy 4 bottles, price each	32.00 28.00	24.00 21.00		
T					
TAL-SHI™ COSMETICS • For information please call 1-800-544-4440 or visit www.LifeExtension.com					
01062	TART CHERRY - 600 mg, 60 caps	\$18.95	\$14.21		
00199	TAURINE - 1000 mg, 50 caps Buy 4 bottles, price each	8.95 8.00	6.71 6.00		
00133	TAURINE POWDER - 300 grams Buy 4 bottles, price each	20.00 16.88	15.00 12.66		
01304	THEAFLAVIN STANDARDIZED EXTRACT - 30 veg. caps Buy 4 bottles, price each	18.00 16.00	13.50 12.00		
00555	(L) THEANINE - 100 mg, 60 caps Buy 4 bottles, price each	24.00 20.50	18.00 15.38		
01038	THERALAC PROBIOTICS - 30 caps	47.95	35.96		
00224	THYMIC IMMUNE FACTORS - 100 caps Buy 4 bottles, price each	18.00 14.00	13.50 10.50		
00668	THYROID FORMULA™ (METABOLIC ADVANTAGE) - 100 caps	21.95	16.46		
00349	TMG POWDER - 50 grams Buy 4 bottles, price each	14.00 11.00	10.50 8.25		
00359	TMG - 500 mg, 180 tablets Buy 4 bottles, price each	18.00 15.50	13.50 11.63		
00781	TOCOTRIENOLS WITH SESAME LIGNANS - 60 softgels Buy 4 bottles, price each	38.00 36.00	28.50 27.00		
01400	TOCOTRIENOLS (SUPER-ABSORBABLE) - 60 softgels Buy 4 bottles, price each	30.00 28.00	22.50 21.00		
01278	TOOTHPASTE - 4 oz (Mint) Buy 4 tubes, price each	9.50 8.67	7.13 6.50		
01274	TOTAL SUN PROTECTION CREAM W/BETA GLUCAN - 4 oz Buy 4 tubes, price each	28.00 25.20	21.00 18.90		
01468	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01469	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL -60 veg. caps Buy 4 bottles, price each	32.00 29.60	24.00 22.20		
01386	TRUFIBER® - 180 grams	32.95	24.71		
01389	TRUFLOA PROBIOTICS & ENZYMES - 32 veg. caps	42.95	32.21		
01716	TWO-PER-DAY - 60 tablets Buy 4 bottles, price each	10.50 9.50	7.88 7.13		
01715	TWO-PER-DAY - 120 tablets Buy 4 bottles, price each	20.00 18.00	15.00 13.50		
01714	TWO-PER-DAY - 120 caps Buy 4 bottles, price each	22.00 20.00	16.50 15.00		

SUB-TOTAL OF COLUMN 17

No.		Retail Each	Member Each	Qty	Total
00326	L-TYROSINE - 500 mg, 100 tablets Buy 4 bottles, price each	\$12.98 11.81	\$9.74 8.86		
U					
* 00310	UDO'S OIL 3-6-9 BLEND - 17 fl oz	\$27.79	\$22.23		
* 00311	UDO'S 3-6-9 OIL BLEND - 180 caps	34.79	27.83		
V					
00213	VANADYL SULFATE - 7.5 mg, 100 tablets Buy 4 bottles, price each	\$15.00 12.50	\$11.25 9.38		
00408	VENOTONE - 60 caps Buy 4 bottles, price each	18.95 16.00	14.21 12.00		
01327	VINPOCETINE - 10 mg, 100 tablets Buy 4 bottles, price each	18.00 14.00	13.50 10.50		
01033	VISION OPTIMIZER - 90 caps	29.95	22.46		
01219	VITAMIN A NUTRISORB - 0.6 fl oz	27.00	20.25		
00091	VITAMIN B1 CAPS - 500 mg, 100 caps Buy 4 bottles, price each	18.73 17.00	14.05 12.75		
00093	VITAMIN B2 CAPS - 100 mg, 100 caps Buy 4 bottles, price each	14.32 13.00	10.74 9.75		
00096	VITAMIN B3 NIACIN - 1000 mg, 100 caps Buy 4 bottles, price each	12.75 12.00	9.56 9.00		
00372	VITAMIN B3 NIACIN - 500 mg, 100 caps Buy 4 bottles, price each	7.65 6.65	5.74 4.99		
00098	VITAMIN B5 - 500 mg, 100 caps (Pantothenic Acid) Buy 4 bottles, price each	10.50 9.38	7.88 7.04		
00556	VITAMIN B6 - 250 mg, 100 caps Buy 4 bottles, price each	12.50 11.00	9.38 8.25		
00361	VITAMIN B12 - 500 mcg, 100 lozenges Buy 4 bottles, price each	8.75 7.25	6.56 5.44		
01634	VITAMIN C w/ DIHYDROQUERCETIN - 1000 mg, 60 tablets Buy 4 bottles, price each	10.00 9.00	7.50 6.75		
00927	VITAMIN C w/ DIHYDROQUERCETIN - 1000 mg, 250 tablets Buy 4 bottles, price each	25.50 23.25	19.13 17.44		
00084	VITAMIN C (BUFFERED) POWDER - 454.6 grams Buy 4 bottles, price each	23.95 22.00	17.96 16.50		
00864	VITAMIN D3 - 2000 IU, 1 fl oz Buy 4 bottles, price each	28.00 25.00	21.00 18.75		
01751	VITAMIN D3 - 1000 IU, 250 softgels Buy 4 bottles, price each	12.50 11.25	9.38 8.44		
01713	VITAMIN D3 - 5000 IU, 60 softgels Buy 4 bottles, price each	11.00 9.90	8.25 7.43		
01718	VITAMIN D3 - 7000 IU, 60 softgels Buy 4 bottles, price each	14.00 12.60	10.50 9.45		
01573	VITAMIN D3 w/SEA-IODINE™ - 5000 IU, 60 caps Buy 4 bottles, price each	14.00 12.50	10.50 9.38		
01572	VITAMINS D AND K w/SEA-IODINE™ - 60 caps Buy 4 bottles, price each	24.00 22.00	18.00 16.50		
01663	VITAMIN E (PURE NATURAL) - 400 IU, 100 veg. caps Buy 4 bottles, price each Buy 10 bottles, price each	30.00 28.00 26.00	22.50 21.00 19.50		
01225	VITAMIN K2 (LOW-DOSE) - 45 mcg, 90 softgels Buy 4 bottles, price each	18.00 16.00	13.50 12.00		

SUB-TOTAL OF COLUMN 18

DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE

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No.		Retail Each	Member Each	Qty	Total
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01686	ZEAXANTHIN w/LUTEIN & MESO-ZEAXANTHIN PLUS ASTAXANTHIN AND C3G (SUPER) - 60 softgels	\$42.00	\$31.50		
	Buy 4 bottles, price each	38.00	28.50		
01685	ZEAXANTHIN w/LUTEIN & MESO-ZEAXANTHIN AND C3G (SUPER) - 60 softgels	22.00	16.50		
	Buy 4 bottles, price each	19.80	14.85		
00061	ZINC LOZENGES - 75 lozenges	9.50	7.13		
	Buy 4 bottles, price each	6.75	5.06		
01051	ZYFLAMEND® WHOLE BODY - 120 softgels	60.95	45.71		
01029	ZYFLAMEND® TINY CAPS® - 180 softgels	31.95	23.96		

SUB-TOTAL OF COLUMN 19

* These products are not 25% off retail price.

**Not eligible for member discount or member renewal product credit.

***Due to license restrictions, this product is not for sale to customers outside of the USA.

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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 32-year track record shows that we have been five to ten 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 1,666-page *Disease Prevention and Treatment* protocol book that contains novel therapies to treat 133 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.

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KRILL HEALTHY JOINT FORMULA

TARGETED SUPPORT
FOR OPTIMAL JOINT
FUNCTION AND MOBILITY



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

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

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

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

THREE SYNERGISTIC COMPOUNDS FOR SUPERIOR BENEFIT

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

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

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

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

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

JUST ONE SOFTGEL DAILY

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

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

References

1. Valensa. (Data on File.) 2011.
2. *Altern Med Rev.* 2010 Apr;15(1):84-6.
3. *J Am Coll Nutr.* 2007 Feb;26(1):39-48.
4. *Curr Med Chem.* 2009;16(14):1718-45.
5. *Curr Rheumatol Rep.* 2003 Feb;5(1):7-14.
6. *Nutr J.* 2008;7:3.
7. *Am J Phys Med Rehabil.* 2005 Apr;84(4):278-83; quiz 84, 93.
8. *World J Gastroenterol.* 2007 Feb 14;13(6):945-9.
9. *J Nutr Biochem.* 2010 May;21(5):381-9.

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

Contains crustacean shellfish (krill).

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Zanthin[®] is a registered trademark of Valensa International, Inc.



Item # 01600

To order **Krill Healthy Joint Formula**
call 1-800-544-4440 or visit www.LifeExtension.com



Item # 01502

Your Skin's Internal Moisturizer

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

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

Restore Ceramides Naturally from Within!

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

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

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

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

The Moisturizing Pill the Japanese Have Enjoyed for a Decade!

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

To take one example, after just three months ingesting **200 mg** per day of **Lipowheat™**, a group of people suffering from dry, flaking skin reported dramatic improvement in the look and feel of their skin. These results were verified by electrochemical analysis showing that **95%** of participants exhibited improved skin hydration. Even better, all subjects who at the onset of the study experienced chronic itching reported sharply decreased itching or **complete elimination** of the problem by the end of the study!⁵

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** liquid capsules of **Skin Restoring Phytoceramides with Lipowheat™** retails for \$25. If a member buys four bottles during **Super Sale**, the price is reduced to **\$15.53**. Contains wheat.

Lipowheat™ is a trademark of LAVIPHARM Group of Companies.

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

References

1. *Biophys Chem.* 2010 Aug;150(1-3):144-56.
2. *Chemistry and Physics of Lipids.* Apr 2007;146(2):67-75.

3. Baran R, Maibach H, eds. *Textbook of Cosmetic Dermatology.* 3rd ed. Taylor & Francis;2005:177.
4. *Int J Cosmet Sci.* 2010 Jul 14. .

5. www.fda.gov/ohrms/dockets/dockets/95s0316/95s-0316-rpt0275-04-Udell-vol211.pdf
Accessed August 10, 2010.
6. *J Med Esth et Chir Derm.* 2007 Dec; 34(136):239-42.

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.

SUPPORT ENDOTHELIAL HEALTH FOR MAXIMUM SEXUAL PERFORMANCE

Overlooked in the effort to support **sexual function** in aging men is the health of the **vascular system**. Blood flow through the delicate lining of the arteries (the **endothelium**) is **essential** to sexual arousal, so it should come as no surprise that **endothelial function** is closely associated with male sexual capacity.¹

Life Extension® has discovered supportive clinical research for a scientifically validated, dietary supplement formula to promote **endothelial function** and **blood flow** to the place men need it most—for maximum performance.

The ingredients found in **Prelox**® Natural Sex for Men® have yielded compelling and highly satisfactory results in **five independent clinical studies**.²⁻⁶

Our analysis also confirms that unlike some performance enhancement supplements marketed as “natural,” **Prelox**® Natural Sex for Men® is not adulterated with trace amounts of prescription drugs.

A Powerful Synergy to Support Sexual Health

The patented blend of the following ingredients positively affects the male physiology in **three ways**, to provide optimal support:

1. **PYCNOGENOL**® (standardized French maritime pine bark extract) activates **endothelial nitric oxide synthase** (eNO-S),⁷ the enzyme required to make **nitric oxide**. Nitric oxide (NO) *relaxes* the vessels that enable efficient blood flow—the key to healthy male sexual activity and overall vascular health. Pycnogenol® further **amplifies** this relaxing effect by extending the amount of time nitric oxide remains in the bloodstream.
2. **L-ARGININE** is the biological precursor to nitric oxide synthesis in the endothelium.⁷ It interacts **synergistically** with Pycnogenol® to sustain nitric oxide levels sufficient for healthy sexual function.
3. **ICARIIN**—from a natural botanical extract used in traditional Chinese medicine—has been shown to **deactivate** the enzyme normally responsible for **winding down** male sexual response, further promoting sustained activity.⁸ Prelox® Natural Sex for Men® contains a standardized extract providing a proprietary form of high-quality icariin.

The suggested dose of two Prelox® Natural Sex for Men® tablets each day provides:

Prelox® Proprietary Blend L-Arginine HCl, Aspartic Acid, Pycnogenol® Dried French Maritime Pine (<i>Pinus pinaster</i>) Extract (bark)	1440 mg
ICARIIN [Natural Sex® <i>Epimedium sagittatum</i> Extract (aerial parts)]	60 mg

A 60-tablet bottle of **Life Extension**® **Prelox**® Natural Sex for Men® retails for \$52. If a member buys four bottles during **Super Sale**, the price is reduced to just **\$32.40 per bottle**.

References

1. *Int J Impot Res* 2008 Dec; Suppl 2:59-14.
2. *Int J Impot Res*. 2008 Mar;20(2):173-80.
3. *Phytother Res*. 2009 Mar;23(3):297-302.
4. *J Sex Marital Ther*. 2003 May;29(3):207-13.
5. *European Bulletin of Drug Research*. 2005;13(1):7-13.
6. *Akush Ginekol (Sofia)*. 2007;46(5):7-12.
7. Rohdewald P. Pycnogenol, French maritime pine bark extract. In: Coates P, ed. *Encyclopedia of Dietary Supplements*. New York; Marcel Dekker; 2004.
8. *Urology*. 2006 Dec;68(6):1350-4.

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Item # 01373

To order Prelox® Natural Sex For Men®, call 1-800-544-4440 or visit www.LifeExtension.com

ARE YOU GETTING Curcumin's BENEFITS?



How Much Curcumin Are You Absorbing?

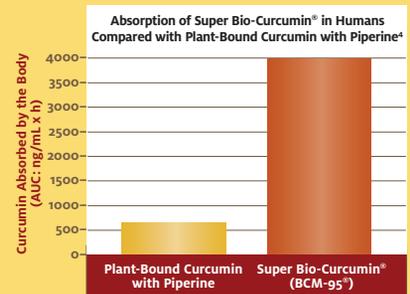


Chart 1. Super Bio-Curcumin® (BCM-95®) showed 6.3 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with plant-bound curcumin with piperine (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin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

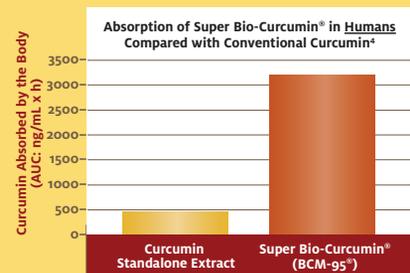


Chart 2. Super Bio-Curcumin® (BCM-95®) showed 6.9 times greater bioavailability (absorption and sustainability over 8 hours) in humans compared with conventional curcumin (as measured by the area under the curve [AUC] in a plot of blood levels against time, that is, the total amount of curcumin absorbed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

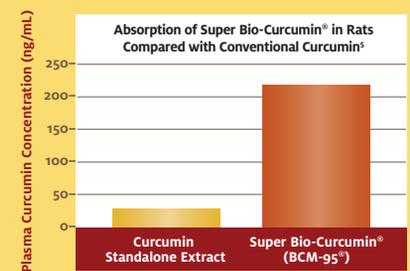


Chart 3. Bioavailability in rats fed with BCM-95® is 7.8 times higher than conventional curcumin.

Curcumin is the health-promoting trace compound derived from the Indian spice **turmeric**. But not all turmeric is alike.

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

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

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

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

In recent studies comparing the effects of standard curcumin against turmeric extracts comparable to **Super Bio-Curcumin®**, researchers observed:^{1,2}

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

A separate study indicated that an antioxidant-rich curcumin extract³ provided powerful support for heart health.

Unrivalled Potency and Absorbability with BCM-95®

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

The highly popular **Super Bio-Curcumin®** uses **BCM-95®**, a patented, *bioenhanced* preparation of curcumin. It has been shown to reach up to **7 times higher concentration** in the blood than standard curcumin.⁴

The graphs on this page illustrate that one 400 mg vegetarian capsule per day of **Super Bio-Curcumin®** supplies the equivalent of **2,500-2,800 mg** of commercial curcumin supplements.

A bottle containing 60 vegetarian capsules of **Super Bio-Curcumin®** retails for \$38. If a member buys four bottles during **Super Sale**, the price is reduced to only **\$23.63** per bottle.

Contains rice.



Item # 00407

References

1. *Int J Pharmacol.* 2009;5(6):333-45.
2. *J Food Nutr Res.* 2009;48(3):148-52.
3. *Arch Gerontol Geriatr.* 2002;34:37-46.
4. *Indian J Pharm Sci.* 2008 Jul-Aug;70(4):445-9.
5. Bioavailability study of BCM-95® in rats. Orcas International Inc. 2006.

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

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

U.S. Patent Nos. 7,883,728, 7,736,679 and 7,879,373.

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WHAT'S INSIDE

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7 SHED BODY FAT BY PREPARING YOURSELF TO EAT

Aging humans with *high-normal blood sugar* face increased risks of virtually *every* degenerative disorder. By ingesting compounds *before* meals that *reduce* surplus **glucose**, you can slash disease risk while helping to **shed pounds** of body fat.



26 IMPACT OF AFTER-MEAL GLUCOSE ON ARTERIAL FUNCTION

Heart attack risk is greatest two hours after a meal. The major cause is *after-meal* blood sugar surges that damage our arterial lining. A breakthrough study reveals **gamma tocopherol** offers near **100%** protection against this type of **endothelial dysfunction**.



38 BREAST CANCER AND GLUCOSE: THE SURPRISING CONNECTION

Scientific studies strongly implicate high-normal blood glucose with increased incidences of **breast cancer** and **cognitive decline**. These findings provide strong incentive to maintain glucose blood levels at the *low* end of normal range.



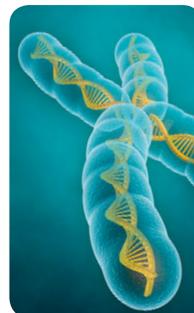
54 TOWARD BIOLOGICAL IMMORTALITY

Life Extension® has funded over **\$2 million** aimed at enabling doctors to inject *progenitor* (stem) *cells* that will regenerate our aging bodies. New findings reveal that what most Foundation members already do can increase **telomere length** and promote healthy longevity.



68 IMPROVE HEART MUSCLE FUNCTION

New research shows how **hawthorn** and **arjuna** botanicals improve **heart muscle function** and increase **coronary blood flow**. These discoveries are of particular interest to those concerned with **congestive heart failure**.



80 ANTI-AGING PROPERTIES OF REISHI

Reishi medicinal mushroom has long been known to boost **immune surveillance**. New research demonstrates it provides broad-spectrum protection against a host of chronic disorders.