Testosterone Improves Quality of Life

Mediterranean Way To Weight Loss

Guard Against Esophageal Reflux

Protect Skin From Glycation Damage

Harvard Associate Clinical Professor
ABRAHAM MORGENTALER, M.D.
The Truth About Testosterone and Prostate Cancer
Curcumin has turned into a nutrition superstar because of the enormous health-promoting effects it provides for almost every organ system. However, most curcumin extracts are neither well absorbed nor well retained in the body.

Life Extension’s curcumin supplements utilize a patented preparation of curcumin that can reach up to 7 times higher concentration in the blood than standard curcumin.

As the graphs on this page illustrate, the 400 mg of curcumin in either of our formulas supply the body with the equivalent of 2,500 mg of most commercial curcumin products.

In recent studies comparing the effects of standard curcumin against Life Extension’s turmeric extracts, researchers observed:

- Nearly twice the support for immune health and approximately 2 times the support for inflammatory issues.
- Almost double the free radical-fighting support. A separate study indicated that curcumin extract provided powerful support for heart health.

### References

---

**TWO CURCUMIN FORMULAS TO CHOOSE FROM**

Those who want a curcumin stand-alone can order a bottle of 60 vegetarian capsules of Super Bio-Curcumin® (Item # 00407) for $38. If a member buys four bottles, the price is reduced to $26.25 per bottle. Each bottle lasts a typical user two months.

Those seeking additional support against cell changes that promote prolonged functional inflammatory issues may choose Advanced Bio-Curcumin® With Ginger & Turmerones.

While both of these formulas provide the superior absorbing curcumin, Advanced Bio-Curcumin® also contains:

- **Turmerones** to increase the amount of curcumin inside cells.
- **Ginger**, which provides complementary health benefits.
- **Phospholipids** that further enhance absorption.

A bottle of 30 softgels of Advanced Bio-Curcumin® With Ginger & Turmerones (Item # 01808) retails for $30. If a member buys four bottles, the price is reduced to $20.25 per bottle. The suggested dose for either of these highly absorbable curcumin supplements is one softgel or capsule daily.

CAUTION: Do not take if you have gallbladder problems or gallstones. If you are taking anticoagulant or antiplatelet 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.

---

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.
MALE MENOPAUSE
In his new book, The Truth About Men and Sex, Dr. Abraham Morgentaler, associate professor at Harvard Medical School, writes about the invaluable benefits of testosterone supplementation for aging men. His research has proven that testosterone treatment does not cause prostate cancer.

ON THE COVER

54 PROTECT YOUR SKIN AGAINST GLYCATIION- CAUSED AGING
Glycation disrupts collagen metabolism, which leads to wrinkles and sagging. Clinical and lab studies show that five topical nutrients work in complementary ways to block the detrimental effects of glycation and promote dermal regeneration—preserving the skin’s youthful appearance.

64 GUARD AGAINST DEADLY EFFECTS OF ACID REFLUX
Blocking stomach acid with drugs like Nexium® provides only partial protection from acid reflux and may lead to increased bone fracture risk. A safer approach is a raft-forming alginate that blocks the backflow of stomach acid into the esophagus helping to prevent discomfort and the risk of esophageal cancer.

77 MISGUIDED MEDICINE
When Massachusetts General Hospital studied the effects of testosterone in men, they inadvertently overdosed patients with an estrogen-suppressing drug. The drug overdose caused the findings to be seriously flawed. The media misinterpreted the study and insinuated that aging men should not restore youthful hormone balance.

7 AS WE SEE IT: PROTECT AGAINST SUDDEN CARDIAC ARREST
A 2014 study reveals that low testosterone or high levels of estrogen can sharply increase the risk of sudden cardiac arrest in men. Failure to grasp this simple blood testing concept may be a contributing factor in over 260,000 American deaths each year. Find out how the FDA misinterpreted published human data about testosterone replacement and the critical importance of testing estrogen blood levels in men before testosterone is prescribed.

62 BOOK REVIEW
In his book Testosterone Replacement Therapy—A Recipe For Success, Dr. John Crisler has written a practical guide for any man seeking the benefits of testosterone replacement therapy, discussing everything from appropriate blood testing to ideal methods of delivery.

91 WELLNESS PROFILE
Beth Daly credits activated charcoal for saving her life after what she believes was an environmental toxin-related illness that doctors could not identify.

97 AUTHOR INTERVIEW
In his book, Doctored—The Disillusionment of an American Physician, Dr. Sandeep Jauhar reveals the troubling realities of practicing medicine today.
except to state that they are advertisers who may have paid Life Extension for placement of an advertisement in this publication. Life Extension disclaims any and all responsibilities or warranties as to the accuracy of information contained in advertisements for non-Life Extension branded products or services. For Canadian customers send change of address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7.

FDA approved qualified health claims for calcium, antioxidant vitamins, folic acid and EPA and DHA omega-3 fatty acids, and selenium as noted where applicable. Life Extension® does not endorse any of the businesses or the products and/or services that may appear in advertisements for non-Life Extension branded products or services.

Anyone who wishes to embark on any dietary, drug, exercise, or other lifestyle change intended to prevent or treat a specific disease or condition should first consult with and seek clearance from a qualified health-care professional. LEGAL NOTICE: Health claims contained in articles and advertisements in this publication have not been approved by the FDA with the exception of FDA approved qualified health claims for calcium, antioxidant vitamins, folic acid and EPA and DHA omega-3 fatty acids, and selenium as noted where applicable. Life Extension® does not endorse any of the businesses or the products and/or services that may appear in advertisements for non-Life Extension branded products or services contained in Life Extension magazine® except to state that they are advertisers who may have paid Life Extension for placement of an advertisement in this publication. Life Extension disclaims any and all responsibilities or warranties as to the accuracy of information contained in advertisements for non-Life Extension branded products or services. For Canadian customers send change of address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7.
Can Your Omega-3 Compare?

From supporting heart health and brain function to balancing the inflammatory response, there is no debating the broad-spectrum benefits of omega-3 fatty acids.¹³

There are hundreds of fish oil supplements on the market, but only one incorporates lifesaving findings to provide optimal omega-3 and olive fruit extracts, along with sesame lignans, in one molecularly distilled formula—Super Omega-3 from Life Extension"!

Fish Oil + Olive Fruit Extract

Research confirms that a combination of fish oil and olive oil may support a healthy inflammatory response better than fish oil alone.⁴ And only one omega-3 product incorporates the benefits of both fish oil and olive fruit extract into a single novel formula called Super Omega-3. Each two softgel serving supplies the equivalent amount of 4 to 6 ounces of polyphenol content found in extra virgin olive oil.

Sesame Lignans

Studies show that when added to fish oil, sesame lignans safeguard against oxidation and direct fatty acids toward pathways that help with inflammatory reactions.⁵

= Health Benefits of a Mediterranean Diet

No other commercially available fish oil supplement contains this level of essential fatty acids, sesame lignans, and olive fruit polyphenols.

Super Omega-3 uses a proprietary process to produce a pure, stable, and easy-to-tolerate fish oil that exceeds the standards set by international rating agencies, ensuring any pollutants are reduced to a virtually undetectable level.

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Member Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$32</td>
<td>$24</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$28 each</td>
<td>$21 each</td>
</tr>
<tr>
<td>10 bottles</td>
<td>$22.73 each</td>
<td>$17.05 each</td>
</tr>
</tbody>
</table>

References

Note: While the health benefits of omega-3s from fish oil are universally recognized, the critical importance of olive oil in maintaining healthy vascular function remains largely overlooked.

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

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

Mark S. Bezzer, MD, FACP, FAARM, FAAEM, is board certified in internal medicine, emergency medicine, and anti-aging/regenerative medicine. He is the director of Med-Link Consulting, which specializes in bioidentical hormone replacement therapy, natural alternatives, anti-aging, and degenerative diseases. He holds US patents for a multivitamin/mineral supplement, an Alzheimer’s/dementia compilation, and a diabetic regimen.

Anna M. Cabeca, DO, FACOG, ABAARM, is a board-certified Gynecologist and Obstetrician, as well as board-certified in Anti-Aging and Regenerative Medicine, an expert in Functional Medicine, and an expert in women’s health. She specializes in bioidentical hormone replacement therapy and natural alternatives, successful menopause and age management medicine.

Thomas F. Crais, MD, FACS, is a board-certified plastic surgeon, was medical director of the micro-surgical 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, NJ, in 2008 and is board certified by the American Board of Internal Medicine. Dr. DeLuca is a Diplomat 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 hematopoietic 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, DC, DO, is a licensed Chiropractic Physician and Board Certified Osteopathic Family Physician. While training at the University of Alabama, he completed Fellowships in Clinical Nutrition and Behavioral Medicine. He is currently in private practice in Clermont, FL.

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, FAACP, is a board-certified family physician who merges mainstream and alternative medicine using functional medicine concepts, nutrition, and natural approaches.

Filippo Ongaro, MD, is board-certified in anti-aging medicine and has worked for many years as flight surgeon at the European Space Agency. He is considered a pioneer in functional and anti-aging medicine in Italy where he also works as a journalist and a writer.

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, is 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 Rozencwaig, 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.

Michael D. Seidman, MD, FACS, is the director 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.

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

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

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

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

Deborah F. Harding, MD, is founder of the Harding Anti-Aging Center. She is double board-certified in internal medicine and sleep disorder medicine. She also earned the 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 hyperthermia, cryothermia, and ischemia research. His research interests include antioxidant and dietary-restriction effects in animals and humans.

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

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

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

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

Jonathan V. Wright, MD, is medical director of the Tahoma Clinic in Tukwila, 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.
Folate helps maintain homocysteine levels within the normal range, thereby promoting cardiovascular health. Folate also supports neurotransmitter synthesis—which in turn helps maintain cognitive abilities.

However, not everyone has sufficient activity of the enzyme required to convert folate to its biologically active form, 5-methyltetrahydrofolate, or 5-MTHF.

For those whose homocysteine levels remain stubbornly high, the answer lies with the bioactive form of folate called 5-MTHF, which is up to 7 times more bioavailable than ordinary folic acid. This unique compound requires no enzymatic conversion to become metabolically active—providing maximum support for both cardiovascular and cognitive health.

**Optimized Folate** provides metabolically active 5-MTHF folate in 1,000 mcg or 5,000 mcg strengths.

The demand for 5-MTHF has surged as more consumers have discovered its potent homocysteine-lowering effects.

Non-GMO

Quatrefolic® is a registered trademark of Gnosis, S.p.A.

### References
**Surprising Factor Behind Sudden Cardiac Arrest**

Most people associate **heart attack** with **coronary artery** blockage. Yet **50%** of cardiovascular deaths originate from a condition called **sudden cardiac arrest**, which is the unexpected **acute** loss of **heart** function.¹

**Sudden cardiac arrest** is usually caused by an **electrical disturbance** that disrupts the heart’s rhythmic pumping action. When cardiac arrest happens, blood flow to the entire body stops.²

If not immediately treated, **sudden cardiac arrest** results in cessation of life. Survival rates remain low despite modern resuscitation attempts.³

In a groundbreaking 2014 study, researchers measured **testosterone** and **estrogen** levels to correlate risk of **sudden cardiac arrest**. The findings revealed that **lower** levels of **testosterone** or **higher** levels of **estrogen** in **men** were strongly associated with greater risk of **sudden cardiac arrest**.⁴

These revelations are significant because they provide a basis to identify men at risk for **sudden cardiac arrest** and implement preventative treatments, such as **boosting** deficient **testosterone** and **suppressing** excess **estrogen**.

**Life Extension** members should **not** be surprised at these findings. They know we’ve been testing testosterone and estradiol **blood levels** in **men** for the past **19 years**.

Standing in our way of saving more lives is the FDA, who continues to discourage **hormone balance** in aging men despite overwhelming data showing **reduction** in **heart attack** risk.⁴,⁵

What the FDA and conventional medical community still do not comprehend is that when **natural testosterone** is administered to men, it is imperative that **estradiol** blood levels be tested to ensure that the **testosterone** is **not** converting to excess **estrogen**. Failure to grasp this simple **blood testing** concept may be causing over **100,000** needless American deaths each year.
Each year in the United States, out-of-hospital sudden cardiac arrest strikes more than 350,000 people, or about 1,000 per day. Men account for 75% of these cases. Only 5% of those stricken survive.1,7

Magnesium and potassium are critically involved in regulating the heart’s electrical signaling. Deficiency of these minerals (magnesium or potassium) predisposes humans to sudden cardiac arrest.8-11 Each heartbeat is controlled by the opening and closing of mineral “channels” in cardiac cells.12 Testosterone plays a role in modulating potassium channels, which regulate the flow of potassium between the bloodstream and cardiac cells.13 Testosterone regulates calcium channels, preventing too much blood calcium from entering cardiac cells.14 Magnesium also protects against excess calcium channel infiltration.15,16 Low testosterone is associated with abnormal EKG readings that predispose people to sudden cardiac arrest.17-20 In a first-of-its-kind study, men with higher testosterone were found to be 25% less likely to suffer sudden cardiac arrest. This same study found that men with higher estradiol levels suffered twice the risk of sudden cardiac arrest.3

The significance of this landmark study is that it ties together a puzzle that has baffled conventional cardiology for decades. To put the data from the study in perspective, a mere 23% increase in median testosterone level was associated with a 25% reduction in sudden cardiac arrest. Just a 31% increase in median level of estradiol doubled risk of sudden cardiac arrest.

This data corroborates a large body of previously published research linking low testosterone and/or excess estrogen21 to sharply higher rates of overall cardiovascular disease.22-29

American Heart Association Analysis

At the end of 2013, a meticulous examination of studies relating to testosterone and cardiovascular disease was published in the Journal of the American Heart Association. The findings from this analysis corroborate much of what you’ve read in Life Extension® magazine over the past three decades.

According to this review conducted on behalf of the American Heart Association, low levels of testosterone in men are associated with...
Conclusions From The Testosterone Review Published By The American Heart Association

The American Heart Association commissioned a review of previously published studies to evaluate the role that testosterone might play on cardiovascular disease risk. Here are excerpts from the Concluding Summary of the American Heart Association’s review:

“Low endogenous bioavailable testosterone levels have been shown to be associated with higher rates of all cause and cardiovascular-related mortality. Patients suffering from coronary artery disease, congestive heart failure, type II diabetes, and obesity have all been shown to have lower levels of endogenous testosterone compared with those in healthy controls. In addition, the severity of coronary artery disease and congestive heart failure correlates with the degree of testosterone deficiency.

“Testosterone replacement therapy has also been shown to improve the homeostatic model of insulin resistance and hemoglobin A1c in diabetics and to lower the BMI in obese patients.

“These findings suggest that men with lower levels of endogenous testosterone may be at a higher risk of developing atherosclerosis.

“This review article has demonstrated that normal testosterone levels play an important role in maintaining cardiovascular health, and testosterone replacement therapy in men with hypogonadism improves obesity, type II diabetes, myocardial ischemia, exercise capacity, and QTc length.”

What impressed me about this American Heart Association analysis is that it also reviewed studies that failed to show a benefit to testosterone and identified flaws that rendered the findings highly questionable. Life Extension® has previously published many articles exposing similar flaws caused by improper testosterone prescribing practices.

These findings suggest common causes of disability and death in men are related to low testosterone levels. It should be refreshing to longtime Life Extension® supporters that a respected mainstay of conventional medicine, i.e. the American Heart Association, has published this favorable data about testosterone.

- Greater risk of developing coronary artery disease
- More severe atherosclerosis
- Type II diabetes
- Increased visceral adiposity (belly fat)
- Metabolic syndrome
- Insulin resistance
- Carotid artery stenosis (narrowing)
- Obesity
- Abnormal EKG (electrocardiogram) tests
- Angina pectoris (chest pain caused by reduced blood flow to the heart)
- Reduced arterial dilation (caused by impairment of calcium and potassium channels)
- Increased body mass index
- More severe congestive heart failure
- Higher rates of all-cause and cardiac mortality (death)
test their testosterone and estradiol blood levels. If estradiol levels exceed 30 pg/mL, simple steps can be taken to inhibit the aromatase enzyme that converts testosterone to estrogen. This provides the dual advantage of keeping estrogen levels in optimal ranges while increasing testosterone (since less testosterone is converted to estrogen).

FDA Claims Testosterone May Increase Heart Attack Risk

In early March 2015, the FDA issued an edict regarding testosterone drugs. Labels of testosterone drugs must now carry a warning that testosterone may increase risk of heart attack and stroke. This new mandate is based on a FDA advisory panel report that admits there is only a “weak signal of cardiovascular risk” with testosterone use. The FDA’s inappropriate new warning will curtail the prescribing of testosterone, limit insurance coverage, and drive up costs to consumers. The consequences to the health and finances of aging men will be devastating (including more sudden cardiac arrests).

The problem we have with the FDA’s findings is that they are based on an egregious misinterpretation of the human data. An article published in the Journal of the American Medical Association sheds some light on how the FDA advisory committee came to their erroneous conclusion. There was not one mention about testing men’s estrogen blood levels prior to prescribing testosterone. In fact, blood tests were omitted so frequently that it comes as no surprise that some men...
were dangerously overprescribed testosterone.

The FDA advisory panel’s report reveals egregious failures of mainstream physicians to properly prescribe testosterone. According to the advisory panel report, 28% of patients were prescribed testosterone without requisite blood testing.5,53

We suspect the number of men being prescribed testosterone without requisite blood testing is substantially higher than the 28% the FDA estimates. This omission by prescribing physicians helps explain why the FDA now wants to curb the use of testosterone. But as you’ll read next, there is a more efficient solution from a cost, safety and practicality standpoint.

**Let Pharmacists Prescribe Testosterone**

It never ceases to astound me how backwards conventional doctors are when it comes to prescribing testosterone to their aging male patients.

They almost universally omit testing estradiol, which can place their patients at great risk for heart attack or ischemic stroke.73,74 Many men have found that inches can be taken off their waistline in response to testosterone therapy.75-77 This is important because abdominal (belly) fat secretes lots of aromatase that converts testosterone into estrogens.47,78 Men with estradiol levels over 30 pg/mL should consider a low-dose aromatase-inhibiting drug (like anastrozole) so they can enjoy the benefits of increased testosterone and optimized estradiol.

Instead of asking hurried doctors to figure this out, why not let pharmacists review a man’s blood test results and provide the appro-

**Mortality Risks Of Low Testosterone**

As men age, testicular production of testosterone markedly declines. This often occurs as aromatase levels increase, especially in the presence of surplus abdominal fat.47 Aromatase is the enzyme that converts testosterone to estrogen.

**Low testosterone** or excess estrogen in men was shown to elevate risk of sudden cardiac arrest in a recent study.4

The link between low testosterone and cardiovascular disease risk in males was discovered long ago. What follows are descriptions from just a few of many studies supporting this conclusion:

- A study evaluated the relationship between testosterone levels and all-cause mortality over approximately 20 years. Men with low total testosterone levels (under 241 ng/dL) were 40% more likely to die than those with higher levels of testosterone. This finding was consistent regardless of age, lipid levels, and other variables.49

- Another study looked at whether low testosterone levels were associated with an increased risk for mortality in male veterans. Men classified as having a low testosterone level had 88% increased mortality after adjusting for other known mortality factors.50

- A third study examined the relationship between testosterone levels and mortality due to all causes, cardiovascular disease, and cancer. The study included over 11,000 patients aged 40 to 79 years. Low testosterone levels at baseline were significantly associated with increased mortality from cardiovascular disease, cancer, and all causes. After adjustment for variables, an increase of 173 ng/dL of total testosterone was associated with a 19% decreased risk for mortality.51

These studies help corroborate Life Extension’s long-standing position that low testosterone in males is a significant mortality factor. The take home message is to have one’s blood tested for testosterone and estradiol to enable adjustments to be made based on one’s individual results.
The most popular name brand of topical testosterone (Androgel®) costs around $430 per month. Fortunately, compounding pharmacies make similar potency testosterone creams for under $35 a month. Both these prices ($430 and $35) are far too high and reflect regulatory costs rather than non-patented testosterone, which costs very little.

How Many Lives Are Being Lost?

Each year, 263,000 men perish from sudden cardiac arrest in America. It remains a leading cause of death.¹

A recent finding (corroborated by previous published studies) indicates a substantial percentage of these deaths can be avoided if men just modestly restore youthful hormone balance, i.e. increase deficient testosterone and reduce excess estradiol.⁴⁻⁷⁻⁹⁻⁸²

Standing in the way of this scientific rationality is a slew of state and federal regulations that drives up costs and creates bureaucratic inefficiencies.

The only way of knowing one’s individual hormone status is to test for it. This is not something that can be guessed, and 95% of those stricken with sudden cardiac arrest don’t get a second chance to take corrective actions.

The financial impediment precluding more men from using topical testosterone cream is its high cost. Therefore, a pharmacist (or any enlightened individual for that matter) can easily see if red blood cells, PSA, or liver enzymes are excessively elevated and refer the consumer to a physician for additional testing.

This sweeping change would save Americans time and money, and probably spare human lives as pharmacists may wind up doing a better job than untrained physicians that prescribe testosterone with no blood testing. (No one questions the value of having access to a physician with expertise in the prescribing of natural hormones.)

Hormone Balance Requires Proper Blood Tests

Maintaining youthful balance of testosterone, estrogen, progesterone, and DHEA can help forestall the diminished quality of life humans face as they age.

Prescribing testosterone without blood testing exposes men to the following problems:

- Too much or too little testosterone
- Too much or too little estrogen
- Excess red blood cell formation
- Liver injury
- Clinically relevant pre-existing prostate cancer

Testosterone promotes healthy red blood cell formation, which is beneficial for the aging men suffering frank or subclinical anemia.⁵⁴⁻⁵⁷

Men with a condition called polycythemia vera,⁵⁸⁻⁵⁹ which is an over-production of red blood cells, are advised to avoid testosterone replacement, as are men with severe liver impairment.⁶⁰⁻⁶¹ Blood testing can readily detect liver problems or overproduction of red blood cells.

Men with testosterone-sensitive prostate cancer should avoid testosterone until their malignancy is brought under control.⁶² Contrary to erroneous reports the media ignorantly disseminates, higher testosterone levels do not increase prostate cancer risk.⁶³⁻⁷² PSA blood tests can reveal the status of one’s prostate gland.

Men with high blood estradiol (estrogen) levels should take an aromatase-inhibiting drug like anastrozole (0.5 mg twice a week) to bring estradiol into optimal range (20 to 30 pg/mL). This is critically important even if a man chooses not to initiate testosterone replacement.

Here are the optimal blood levels of testosterone, estradiol and other relevant markers men should strive for:

- Total Testosterone: 700-900 ng/dL
- Free Testosterone: 20-25 pg/mL
- Estradiol: 20-30 pg/mL
- PSA: Under 2.5 (the lower the better)
- Red Blood Cells: Within normal reference ranges
- Liver enzymes: Within normal reference ranges

All of these measurements are included in the comprehensive Male Panel blood test that many Life Extension® members have done annually. (Call 1-800-208-3444 to order.)
Instead of revolting against regulatory burdens that cause drugs to be extortionately overpriced, Americans languish in state of apathy while pharmaceutical companies collude to pillage our finances.

Life Extension® long ago broke down some of these barriers by enabling members to gain direct and convenient access to low-cost blood test panels.

Annual Blood Test Super Sale

High prices charged by commercial labs for comprehensive blood testing preclude most people from having them done. The tragic result is that most aging humans needlessly suffer the ill effects of hormone imbalances.

Life Extension® circumvents these price barriers by offering Male and Female Blood Test Panels at the lowest prices anywhere. Once a year, we discount the popular Male and Female Blood Test Panels to only $199—far less than what commercial labs charge.

The Blood Test Super Sale ends June 1, 2015, so please place your order before then to take advantage of these extra discounted prices. You can have your blood drawn any time after receiving your requisition kit.

The results of your blood tests are rapidly sent directly to you. If you have any questions, you are welcome to call our Health Advisor helpline.

P.S.—Sex hormone balance is so critical to the health of aging men that in this issue of Life Extension® magazine, we reprint a rebuttal we published last year to a flawed study being used by the FDA to warn aging men against using testosterone.83,84

We also have a chapter from a brand new book on testosterone authored by Harvard professor Abraham Morgantaler, MD, along with a review of another new book on testosterone replacement therapy authored by John Crisler, DO.

References


Unlike commercial blood tests that evaluate only a few disease risk factors, Life Extension's Male and Female Blood Test Panels measure a wide range of blood markers that predispose people to age-related diseases. Just look at the huge number of parameters included in the Male and Female Blood Test Panels:

### MALE PANEL

#### HORMONES
- Free and Total Testosterone
- DHEA-S
- Estradiol (an estrogen)
- TSH (thyroid function)
- Vitamin D (25-hydroxyvitamin D)

#### LIPID PROFILE
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

#### CARDIAC MARKERS
- C-Reactive Protein (high sensitivity)
- Homocysteine

#### METABOLIC PROFILE
- Glucose
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio
- Hemoglobin A1c

#### COMPLETE BLOOD COUNT (CBC)
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

#### CANCER MARKER
- PSA (Prostate Specific Antigen)

### FEMALE PANEL

#### HORMONES
- Progesterone
- Estradiol (an estrogen)
- Free and Total Testosterone
- DHEA-S
- TSH (thyroid function)
- Vitamin D (25-hydroxyvitamin D)

#### LIPID PROFILE
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

#### CARDIAC MARKERS
- C-Reactive Protein (high sensitivity)
- Homocysteine

#### METABOLIC PROFILE
- Glucose
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio
- Hemoglobin A1c

#### COMPLETE BLOOD COUNT (CBC)
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

### Blood Test Super Sale • March 30th through June 1, 2015.

Non-member retail price: $400
Member Price: **$199**

To obtain these comprehensive Male or Female Panels at these low prices, call **1-800-208-3444** to order your requisition forms.

Then—at your convenience—you can visit one of the blood-drawing facilities provided by LabCorp in your area.

Blood testing services are available only in the continental United States and Anchorage, AK. Not available in Maryland. Restrictions apply for residents of MA, NY, NJ, RI, and PA.
**Dual-Action Support For Aging Joints!**

As you grow older, age-related stiffness and discomfort in the joints becomes a fact of life. Activities once routine become a challenge as limited mobility hampers your every move.

You now have a more potent option to provide broad-spectrum support for aging joints. **ArthroMax® Advanced with UC-II® and AprèsFlex®** is a multi-nutrient formula based on scientific data on natural support for joint health. The ArthroMax® formula provides more joint support than ever before, enhanced with two innovative, clinically validated ingredients: AprèsFlex® and UC-II®.

**Better Absorption For Optimum Benefit**

AprèsFlex® represents a quantum leap forward in the delivery to aging joints of boswellia, long prized for its ability to help with inflammatory issues. It is a superior inhibitor of the enzyme 5-lipoxygenase or 5-LOX.

Excess activity of 5-LOX results in the accumulation of leukotriene B4, a pro-inflammatory compound that affects aging joints. Boswellia has been shown to bind directly to the 5-LOX enzyme in our bodies, blocking it from facilitating production of pro-inflammatory leukotrienes.1,2

AprèsFlex® boswellia absorbs into the blood 52% better than previously available forms of boswellia, for superior effectiveness.

---

**ArthroMax® Advanced With UC-II® And AprèsFlex®**

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

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

- UC-II® standardized chicken cartilage 40 mg
- Total Collagen 10 mg
- Glucosamine sulfate 2KCl (derived from corn) 1500 mg
- AprèsFlex® Indian frankincense (Boswellia serrata) extract 100 mg
- Boron (calcium fructoborate as patented FruiteX B® OsteoBoron®) 1.5 mg

---

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

**References**


**Non-GMO**

AprèsFlex® is a registered trademark of Laila Nutraceuticals exclusively licensed to PL Thomas—Laila Nutra LLC. U.S. Patent No. 8,531,496 and other patents pending. FruiteX B® and OsteoBoron® are registered trademarks of VDF FutureCeuticals, Inc. U.S. Patent No. 5,962,049. UC-II® is a registered trademark of InterHealth N.I. U.S. patents 7,846,487; 7,083,820 and EPO patent EP 1435906B1; Canadian patent CA 2459981C; and Japanese patent JP 480057482.
Tart cherries are chockfull of compounds found to block COX-1 and COX-2 inflammatory enzymes. Benefits of the fruit include:

- Rapid muscle recovery after exercise, and
- Fast relief from the minor aches, discomfort, and stiffness following everyday activities.

**Clinically Validated**

Numerous studies have confirmed the muscle-supporting benefits of tart cherries. One clinical trial found that consuming tart cherry juice twice daily produced a substantial decrease in muscle symptoms related to exercise. In the same study, loss of strength due to exercise over four days was reduced from 22% to only 4%.

**Anthocyanins**

Anthocyanins—the powerful flavonoids found in dark-pigmented fruit—have been studied for their many advantages, including heart, cellular, and cognitive health. Tart cherries have a higher content of anthocyanins than many other fruits.

Life Extension® offers 100% natural Tart Cherry Extract with Standardized CherryPURE®, which opens the door to the positive benefits of continuous exercise—at any age! This formulation provides all the muscle-supporting benefits of tart cherries and matches that anthocyanin dose used in successful clinical trials by providing a standardized 40 mg dose of anthocyanins in each vegetarian capsule.

Non-GMO

CherryPURE® is a registered trademark of Shoreline Fruit, LLC.

**References**

Cardiovascular Disease In Men And Women—Does Declining Testosterone Play A Role?

An article by Dr. Sanjai Sinha, MD, FACP, of Weill Cornell Medical College in New York City, asked the question: Do age-related decreases in testosterone contribute to a shortened life span in men in relation to cardiovascular disease (CVD)?*

Along with age, blood pressure, antihypertensive treatment, diabetes, and total and HDL cholesterol, gender has long been considered a risk factor for cardiovascular disease. Males experience their first cardiovascular event up to 10 years earlier than women and overall life expectancy in men is approximately five to eight years shorter than that of females. The Framingham Heart Study found that “hard” CVD death rates for males was 18.3% and 7.6% in women.

Hypoandrogenemia (an abnormally low amount of androgens, such as testosterone, in the blood) has been associated with other known CVD risk factors including visceral obesity, high LDL levels, and type II diabetes. A population-based study evaluated the risk of cardiovascular morbidity, all-cause and cardiovascular disease between men and women, and the added risk of low testosterone in men. In the study, 4,152 people between 20 and 70 were tracked for an average of five years.

Compared with women, men were at higher risk of cardiovascular morbidity, including hypertension, dyslipidemia, metabolic syndrome, and type II diabetes. Men 20 to 49 had a much higher relative risk compared to women in their age group for these risk factors versus older men to older women. Compared to men with higher testosterone concentrations, men with low testosterone concentrations had a significantly higher 10-year CVD risk, all-cause mortality (82%), and CVD mortality risk (125%).


Nut Consumption Linked To Lower Death Rates

Eating a handful of nuts—including peanuts, a legume—is associated with a 20% reduced rate of all-cause mortality and specifically, death from cardiovascular disease, say researchers at Vanderbilt University and the Shanghai Cancer Institute in an article published in JAMA Internal Medicine.*

The research, which came from three large prospective cohort studies involving 71,764 low-income Americans and 134,254 Chinese, examined the correlation of nut consumption with lower death rates among low-income and racially diverse populations and found that eating nuts was associated with fewer deaths, especially from heart disease.

The American participants were between 40 and 79 years, while the Chinese were between 40 and 74. For the Americans, peanuts made up about half of total nut consumption.

“Nuts are rich in nutrients, such as unsaturated fatty acids, fiber, vitamins, phenolic [compounds,] arginine, and other phytochemicals. All of them are known to be beneficial to cardiovascular health, probably through their antioxidative, anti-inflammatory and endothelial function maintenance properties,” said senior author Xiao-Ou Shu, MD, PhD.

Editor’s Note: This is not the first study to associate nut consumption with lower mortality, but previous studies focused primarily on upper income, white populations who eat more expensive nuts. This is the first study to determine that all races may potentially boost heart health by eating nuts and peanuts.

* JAMA Int Med. 2015 Mar 3.
More Americans Support Faster Drug Approval

Many US citizens believe that new drug approval should occur more rapidly and that the 114th Congress should take action on pharmaceutical development and delivery, according to the results of polls conducted by the nonprofit organization Research!America.*

In 2015, 38% of Americans believed the FDA should act faster to secure approval of new therapies for patients in need of them, despite potential risks—a figure that is up from 30% in 2013. Nearly half of poll respondents believe that increased health care research is part of the solution to high medical costs.

James L. Madara, MD, of the American Medical Association said: “Like Research!America, the American Medical Association is committed to improving the health of the nation and ardently supports funding for medical research that not only generates lifesaving discoveries, but also fuels economic growth by increasing jobs and productivity, and helps control health care costs.”

Editor’s Note: “Our polls show that Americans view research as an economic driver as well as being the answer to health threats that continue to outrun us,” stated Research!America President and CEO Mary Woolley. “Americans expect our elected officials to provide sufficient resources and 21st century policies to speed development of the therapies, devices, prevention, and cures necessary to save lives and maintain our global competitiveness.”

Study Supported By Life Extension® Foundation Finds Vitamin D Improves HIV-Positive Patients

Researchers at Children’s Hospital of Philadelphia published the results of a trial in which treatment with 7,000 IU vitamin D3 benefited HIV-positive children and young adults.* The supplements used in the trial were provided by the Life Extension® Foundation.

Over a 12-month period, 50 HIV-positive individuals aged 5 to 24.9 years were given either a daily dose of 180 micrograms of vitamin K2 for three years or a placebo. Researchers evaluated cardiovascular effects with ultrasound and pulse wave velocity. Data from the 227 women who completed the study reveals that vitamin K2 supplements led to significant reductions in vascular stiffness and improved the flexibility of the vascular wall. The effects were most noticeable in women who had a higher degree of vascular stiffness at the beginning of the study.

Editor’s Note: “This is the first study showing that long-term use of vitamin K2 in the form of MK-7 beneficially affects cardiovascular health,” said lead researcher Dr. Cees Vermeer of Maastricht University Holding (The Netherlands). “Our data demonstrated that a nutritional dose of vitamin K2 in fact improves cardiovascular outcomes.”

Vitamin K2 Improves Arterial Function And Cardiovascular Outcome In Aging Women

A recent study published in Thrombosis and Haemostasis found that supplementation with vitamin K2 in the form of MK-7 (menaquinone-7) can help reduce the risk of age-related arterial wall stiffness in middle-aged women.*

The randomized, double-blind trial included 244 healthy postmenopausal women between the ages of 55 and 65 who were given either a daily dose of 180 micrograms of vitamin K2 for three years or a placebo. Researchers evaluated cardiovascular effects with ultrasound and pulse wave velocity. Data from the 227 women who completed the study reveals that vitamin K2 supplements led to significant reductions in vascular stiffness and improved the flexibility of the vascular wall. The effects were most noticeable in women who had a higher degree of vascular stiffness at the beginning of the study.

Editor’s Note: “It’s encouraging to see that high-dose vitamin D3 improved important aspects of immune function in those HIV-positive study participants without causing any major side effects,” stated Dr. Steven Hirsh, director of clinical research for Life Extension®. “This study certainly supports further research into the use of high-dose vitamin D3 supplementation for individuals with HIV.”

Study Supported By Life Extension® Foundation Finds Vitamin D Improves HIV-Positive Patients

Researchers at Children’s Hospital of Philadelphia published the results of a trial in which treatment with 7,000 IU vitamin D3 benefited HIV-positive children and young adults.* The supplements used in the trial were provided by the Life Extension® Foundation.

Over a 12-month period, 50 HIV-positive individuals aged 5 to 24.9 years were given either a daily dose of 180 micrograms of vitamin K2 for three years or a placebo. Researchers evaluated cardiovascular effects with ultrasound and pulse wave velocity. Data from the 227 women who completed the study reveals that vitamin K2 supplements led to significant reductions in vascular stiffness and improved the flexibility of the vascular wall. The effects were most noticeable in women who had a higher degree of vascular stiffness at the beginning of the study.

Editor’s Note: “This is the first study showing that long-term use of vitamin K2 in the form of MK-7 beneficially affects cardiovascular health,” said lead researcher Dr. Cees Vermeer of Maastricht University Holding (The Netherlands). “Our data demonstrated that a nutritional dose of vitamin K2 in fact improves cardiovascular outcomes.”

* Thromb Haemost. 2015 Feb 19;113(5).

* America Speaks Poll Data Summary Volume 15. 2015 Jan.

Green Tea Shows Promise As Oral Cancer Therapy

An article published in *Molecular Nutrition and Food Research* reports that a compound found in green tea may kill oral cancer cells by triggering a process in the mitochondria, which leads to cell death while leaving healthy cells alone.*

“EGCG (epigallocatechin-3-gallate) is doing something to damage the mitochondria and that mitochondrial damage sets up a cycle causing more damage and it spirals out, until the cell undergoes programmed cell death,” said lead study author Dr. Joshua Lambert of Pennsylvania State. “It looks like EGCG causes the formation of reactive oxygen species in cancer cells, which damages the mitochondria, and the mitochondria responds by making more reactive oxygen species.”

The study compared the effects of EGCG in human oral squamous carcinoma cells, premalignant cells, and normal human gingival fibroblasts. The researchers found that the compound induced reactive oxygen species formation in the mitochondria of the cancerous and premalignant cells but not in normal cells.

**Editor’s Note:** Dr. Lambert ensured that the study was applicable by using levels of EGCG that would be found when consuming green tea. “We designed the study to use concentrations of EGCG that are achievable in the oral cavity, and we looked at normal, oral leukoplakia (a precancerous lesion), and oral cancer cells to get an idea of what the effect of EGCG would be on different stages in the oral cancer development process.”

* *Mol Nutr Food Res.* 2014 Apr;58(4): 665-76.

Calorie Restriction Can Reduce Inflammation

Yale University researchers have discovered a compound produced by the body during calorie restriction that can block a part of the immune system involved in inflammatory disorders, including type II diabetes, atherosclerosis, Alzheimer’s disease, and autoinflammatory disorders. The results were published in *Nature Medicine* in February 2015.*

The scientists described how a compound called BHB (β-hydroxybutyrate) can inhibit NLRP3, which is part of a complex set of proteins called inflammasomes, which drive inflammatory responses in many disorders. BHB are elevated in the liver during calorie restriction, consumption of a low carbohydrate ketogenic diet, and high-intensity exercise.

Working with mice and human immune cells, lead author Vishwa D. Dixit and colleagues focused on how macrophages, the specialized immune cells that produce inflammation, react when exposed to ketone bodies and whether that impacts the inflammasome complex.

After introducing BHB to mouse models of inflammatory diseases caused by NLRP3, they reported reduced inflammation.

**Editor’s Note:** Professor Dixit noted: “These findings are important because endogenous metabolites like BHB that block the NLRP3 inflammasome could be relevant against many inflammatory diseases, including those where there are mutations in the NLRP3 gene.”

* *Nature Medicine.* 2015 Feb 16.

Metformin Shows Promise For Late-Stage Prostate Cancer

The *Journal of Biological Chemistry* published the finding of a potential benefit for a combination of metformin and the gene inhibitor B12536 in late-stage prostate cancer.*

Late-stage prostate cancer is commonly treated with androgen deprivation therapy (ADT); however, the disease eventually becomes resistant to treatment. Androgen deprivation can disturb the body’s metabolism, leading to insulin resistance that can stimulate androgen production. Metformin, a drug commonly used to treat diabetes, helps reduce insulin resistance and has been associated with protection against specific cancers.

Acting on the knowledge that the gene polo-like kinase 1 (PLK1) can become overexpressed during ADT and that its overexpression can also stimulate androgen synthesis, Xiaogui Liu and colleagues tested the effects of administering the PLK1-inhibitor B12536 with low-dose metformin in prostate cancer cells. The team found that the drugs worked synergistically to inhibit prostate cancer cell proliferation.

**Editor’s Note:** The findings were confirmed in mice that received human prostate cancer cell grafts.

Resveratrol Helps Maintain Memory, Learning In Aged Rats

In an article in *Scientific Reports*, researchers at Texas A&M University describe a benefit for resveratrol in the maintenance of cognitive function in older rats.†

Ashok K. Shetty, PhD, and associates divided 23-month-old rats to receive resveratrol or a placebo for four weeks. Learning ability and memory were evaluated prior to treatment and at approximately 25 months of age.

While spatial learning and spatial memory formation did not differ prior to treatment, animals that received resveratrol showed improvement in these abilities at 25 months. Examination of the rats’ brains revealed significantly increased neurogenesis and improved microvasculature in those that received resveratrol in comparison with the control group. There was also less inflammation in the hippocampus, an area that is vital for learning, memory, and mood.

“The study provides novel evidence that resveratrol treatment in late middle age can help improve memory and mood function in old age,” Dr. Shetty concluded.

Editor’s Note: The authors list increased expression of the longevity gene *SIRT1*, altered expression of nuclear factor kappa-beta (NF-κB), activation of adenosine monophosphate activated protein kinase (AMPK), improved glucose metabolism, and other factors as possible mechanisms for improvements in cognitive function observed in association with resveratrol.


SuperAger Brains Are Different

The *Journal of Neuroscience* reveals a significant difference between the brains of “normal” 80-year-olds and those of so-called “SuperAgers” of the same chronologic age.‡ "SuperAgers” is a term applied to men and women who retain good episodic memory function well into their advanced years.

Subsequent to finding a region of the brain’s anterior cingulate cortex that was thicker in SuperAgers in comparison with healthy 50- to 65-year-olds, the researchers utilized magnetic resonance imaging of the cingulate cortex to compare postmortem brains of SuperAgers, cognitively average older men and women, and those who had mild cognitive impairment. The researchers found that, in addition to a thicker and larger cingulate cortex, SuperAgers had 90% fewer neurofibrillary tangles of the type observed in Alzheimer’s disease and increased density of von Economo neurons related to social intelligence.

Editor’s Note: “It’s thought that these von Economo neurons play a critical role in the rapid transmission of behaviorally relevant information related to social interactions, which is how they may relate to better memory capacity,” senior author Changiz Geula explained. “These cells are present in such species as whales, elephants, dolphins, and higher apes.”

COMPREHENSIVE
VITAMIN K
FORMULA

To Support Arterial Health
And Bone Support

There are three forms of vitamin K that are key factors to promoting arterial health and bone support. Life Extension® Super K with Advanced K2 Complex provides this dynamic trio of vitamin K1, vitamin K2 (MK-4), and vitamin K2 (MK-7) in one softgel.

Vitamin K1 is the form of vitamin K found in green vegetables, but only a fraction is absorbed into the bloodstream. Supplementation ensures ample K1 blood levels. Vitamin K2 can be found in meats, dairy, and egg yolks. If you are avoiding these foods for health reasons, it is essential to ingest a K2 supplement. MK-4 is the most rapidly absorbed form of K2, while MK-7 boasts a very long half-life in the body. This makes both forms the perfect complement to any vitamin K regimen.

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.
Nearly 6,000 studies have been published on the broad-spectrum health benefits of green tea. Research shows that green tea favorably influences cardiovascular health, lipid clearance, glucose tolerance, healthy body weight, DNA support, prostate and breast health, and healthy cell division. Scientists have identified the polyphenol EGCG as the key compound for green tea's multimodal health benefits.

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

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

References
VITAMIN D3 SOFTGELS

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

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

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

**Vitamin D3 Liquid • 2,000 IU**
(Natural Mint Flavor)
1 ounce • Retail: $28 • Non-GMO
Four-bottle Member Price: $18.75 ea.
Great for travel and for those individuals who have difficulty absorbing enough vitamin D3 from softgels, this liquid vitamin D is ideal. Item # 0732
Also available without mint. (Item # 00864)

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

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

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

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

*If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.

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.
STOP THE FAT CYCLE

STOP

The Fat Cycle
Fat cells in obese people behave differently from those in lean individuals.

In the obese, fat cells have less-than-optimal functioning of an enzyme that is required to help break down stored fat and burn it for energy.\(^1\),\(^2\)

As individuals become more overweight, the less effective their cells are at removing stored fat, making it harder for them to lose weight.\(^3\) This is likely to feel familiar to anyone who’s ever tried to permanently shed fat pounds.

A series of discoveries reveal that biologically active flavonoids from a blend of Mediterranean citrus fruit and South American seed extracts initiate a chain of events that help support the function of a fat-removing enzyme called hormone-sensitive lipase.\(^4\),\(^5\)

In one human study, those taking the blend of this citrus fruit/seed extract saw body fat reduction of 15.6\% and weight loss averaging almost 12 pounds.\(^4\)

In another human study, citrus fruit/seed extract-supplemented subjects shed 9.73\% of their white abdominal fat stores, compared with baseline. This nearly 10\% loss of inflammation-generating abdominal fat led to remarkable drops in markers of inflammation in the blood.

Data from these human trials demonstrate healthy weight loss, especially from difficult-to-lose belly fat stores.\(^4\) Proper use of these nutrients can help jump-start a weight-loss program and reduce the chronic inflammation induced by surplus fat cells.\(^4\),\(^5\)
A ray of hope has recently emerged from the endless cycle of more and more obesity. A blend from Mediterranean citrus fruit and a South American seed has been shown to increase hormone-sensitive lipase activity in white adipose tissue cells, restoring their ability to free up—and burn off—their stores of excess energy. (Note: Fat is often medically defined as “stored energy.”)

How Fat Produces Inflammation And Decreases Insulin Sensitivity

Fat cells, especially the “white adipose tissue” found in abdominal fat, are a massive factory for inflammatory signaling molecules.6-8

The steady outpouring of these molecules from belly fat cells results in low-grade body-wide inflammation,6,10 which is a primary instigator of chronic “age-related” disorders.11,12

Pro-inflammatory molecules emitted from fat cells interfere with normal insulin function, which results in the state known as insulin resistance.8 Resistance to insulin increases the amount of glucose in the blood, where it further damages tissues and eventually contributes to still greater problems managing weight.

It has recently been discovered that the white adipose tissue in obese people behaves differently from that in lean individuals. Obese people’s fat cells have less than optimal functioning of hormone-sensitive lipase. This enzyme is responsible for breaking down complex fat molecules and freeing them for burning for energy.1,3,13

Without sufficient hormone-sensitive lipase activity, obese people may have more trouble getting access to the energy stored in their fat cells, possibly making it more difficult to lose weight.

Lethal Impact Of Surplus Body Fat

This year, 400,000 Americans are expected to die from the effects of excess body fat.22 That’s almost as much as tobacco-related deaths.

Excess body fat is a leading contributor to cardiovascular and liver disease, diabetes, and cancer.22

If you look at 10 average American adults today, three of them are obese.23 That works out to about 100 million people whose health is threatened purely by the amount of unnecessary and dangerous body fat they carry.23,24

This problem is not limited to adults; 17% of children and teens are obese in the US,24 indicating that the problem extends well into the next generations.

Repairing The Broken Biology Of Obesity

Scientists familiar with the inner workings of human fat tissue have developed a novel approach, one that shifts the impaired biology of fat cells in obesity back to its normal function, as found in lean people.

Rather than relying on side effect-laden drugs, this discovery utilizes extracts derived from citrus and guarana fruit seeds to exert beneficial effects on fat metabolism.1,4 The end result has been shown to be the shrinking of white adipose (fat) tissue.11,12,14,15

The impact of these beneficial biochemical changes can be seen in a number of animal and laboratory studies. When human white fat cells in culture were exposed to this citrus/guarana seed extract, their rate of fat breakdown (lipolysis), was 6-fold that of untreated control cells.4
In animal models, citrus flavonoid supplements thwarted fatty liver disease, blood liver disturbances, and insulin resistance by preventing new fat production and storage in the liver, while increasing fat breakdown and fat burning.14

These extracts promote significant weight loss in obese laboratory rats and mice, accompanied by reductions in fasting blood sugar and blood lipids, which are risk indicators for cardiovascular disease, diabetes, and metabolic syndrome.16-21

Normalizing Fat Cell Behavior

It has long been suspected that citrus fruit and guarana carry benefits in relation to excess body fat. A large-scale, epidemiological study of Brazilians who regularly consumed guarana showed that they had lower rates of obesity, hypertension, and metabolic syndrome than did those who never consumed it.25 In fact, men who consumed guarana regularly had lower waist circumferences than non-consumers, while women had lower total and LDL (“bad”) cholesterol compared with controls.

Two human studies have illustrated the weight-loss impact of utilizing standardized extracts from these plants.

In the first study of overweight volunteers, half received a placebo while the other half received the citrus/guarana extract blend. The supplement was standardized to contain 20% total flavanones.4 Subjects used the supplement for four and 12 weeks at a dose of 1.4 grams per day.

After four weeks, the supplemented group’s total body fat content had fallen by 5.53%, and average weight loss was 6.6 pounds. By 12 weeks, there was a 15.6% reduction in body fat and 12 pounds of weight lost. Placebo recipients had no significant losses of either body fat content or body weight.

In a second study, 47 people received the flavanone-rich supplement, at 450 mg, twice daily (at breakfast and lunch) for 12 weeks, while 48 control subjects received a placebo.5 Placebo subjects lost no significant amount of body weight or body fat, whereas the supplemented group lost 5.8 pounds from baseline. Supplemented people lost 6.6% of their total body fat, a significant difference from the placebo group.

This study demonstrated improvements in other parameters associated with long-term, fat-related disease risks. Mean waist and hip circumference, which are strongly correlated with cardiovascular risk, fell about two inches from baseline in the supplemented group. The supplemented subjects also shed 9.73% of their white abdominal fat stores, compared to when they started (baseline).

Stopping The Fat Cycle

• If you are an adult American, you face a three-in-10 chance of being overweight or obese.
• Fat tissue, especially the white adipose tissue found in abdominal fat stores, pumps out a massive flow of inflammation-promoting substances that leads to life-shortening chronic diseases.
• Fat cells in obese people cannot process fat normally, leaving them to accumulate it much more extensively than lean people, while being unable to burn it off.
• Flavonoids derived from citrus fruit and guarana seed extracts are capable of making fat cells from obese individuals function more like those of lean people, which can shed fat and burn it for energy.
• Laboratory and clinical studies confirm that consuming these extracts as a nutritional supplement not only reduces body weight, but more importantly, shrinks body fat stores in the crucial abdominal region.
• Furthermore, as weight and fat are shed, inflammation-promoting disease markers also fall away, further improving risk factors for cardiovascular disease, diabetes, cancer, and other chronic disorders.
In response to this reduced abdominal fat mass, there were significant reductions in inflammatory blood markers. **C-reactive protein** (CRP) dropped by nearly 23% and fibrinogen fell nearly 20% from baseline. When compared to the placebo group, these changes amounted to 85% reduction in CRP and 18% reduction in fibrinogen.

It is very difficult to lower these inflammatory markers in obese individuals. Yet study subjects using this citrus/guarana-based supplement daily for three months lost nearly 7% of their total body fat, nearly 10% of abdominal white adipose tissue, and saw meaningful reductions in their inflammatory parameters.

We don’t yet have long-term results on these individuals, but it is safe to assume that such dramatic changes in their fundamental biology will lead to longer, healthier, more productive, and more active lives.

**Summary**

Being overweight and/or obese is now an undeniable global health problem, which scientists are calling “globesity.” These conditions are now recognized as genuine disease entities, not as failures of self-control or character flaws, because of their tremendously complicated biology and their major contributions to chronic disease and premature death.

Breakthroughs in molecular biology have revealed that the white adipose (fat) tissue cells of obese people behave differently from those in lean individuals. Obese people’s fat cells simply cannot liberate their massive fat contents to be used for energy; as a result, those cells continue to accumulate fat, with all of its inflammation-promoting properties.

Flavonoid components of citrus fruit and guarana seeds, however, act synergistically to counteract this obesity-induced defect. By restoring ailing fat cells to the healthier, more responsive functions of lean tissue, these extracts help normalize those cells and give them the ability to release and burn off excess fat, rather than continuing to accumulate it.

Laboratory and clinical studies demonstrate both the mechanisms and effects of these extracts. In clinical studies, obese subjects not only shed significant body weight of up to one pound per week, but also reduced total body fat content by up to nearly 16%, with concomitant reductions in known disease risk factors such as waist and hip circumference, as well as blood markers of inflammation.

Almost everyone past the prime of their youth carries excess white body fat, and suffers the consequences of its massive outpouring of inflammatory mediators.

---

**Defining Overweight And Obesity**

Carrying too much body fat is bad for you; it produces massive outflows of inflammation, stresses your joints, and overworks your heart, kidneys, and other organs. In order to study these problems, scientists have developed specific definitions, using the body mass index (BMI) as a standard measure. BMI is derived from a simple formula that includes both weight and height.

By definition, a person is overweight if their BMI exceeds 25, and obese when BMI exceeds 30. Thus, every obese person is also overweight. In practical use, however, the term “overweight” generally indicates people with a BMI of 25 to 30.

While “overweight” is a better place to be than obese, don’t make the mistake of thinking that you are protected if you are “only” overweight. Your body still has far too much white adipose tissue, and you are being exposed to far too much chronic inflammation. Overweight or obese—if you meet either definition, it’s time to get control of your body fat.
If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.

References

Optimal heart health, including circulation, depends on the functioning of our **endothelium**—the thin layer of cells that lines the heart and its blood vessels.

Research has shown that **pomegranate** and **superoxide dismutase** can help maintain healthy endothelial function and circulation.

**POMEGRANATE POWER—THE NEXT GENERATION**

**Endothelial Defense™** provides **Full-Spectrum Pomegranate™** with active constituents of seed, flower, and fruit along with a proprietary **superoxide dismutase (SOD)** that survives stomach acids for absorption into the bloodstream.¹⁻⁸

The unique blend of **pomegranate** polyphenols in **Endothelial Defense™** promotes youthful lipid and glucose metabolism while regulating inflammatory factors.⁹

A bottle containing 60 softgels of **Endothelial Defense™ with Full-Spectrum Pomegranate™** retails for $56. If a member buys four bottles, the price is reduced to $39 per bottle.

Contains soybeans and wheat.

**References**

**To Order Endothelial Defense™ with Full-Spectrum Pomegranate™**, 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.
People today pursue diets to lose weight, often with unsatisfactory results. A Mediterranean diet and a lifestyle can not only make you look and feel great but help you live longer and healthier.

**Jump-Start Your Weight-Loss Program**
In overweight individuals, fat cells have less-than-optimal function of an enzyme called hormone-sensitive lipase. This enzyme is required to help break down stored fat and burn it for energy.¹,² As these individuals become more overweight, their cells are less effective at removing stored fat.

Studies reveal that biologically active flavonoids from Mediterranean citrus fruits and South American seed extracts initiate a chain of events that helps support the function of this fat-removing cellular enzyme.¹,²

Clinical research demonstrates that taking 450 mg twice daily at breakfast and lunch for 12 weeks resulted in a 5.8-pound weight loss on average and a 6.6% reduction in body fat, while placebo subjects experienced no significant weight or body fat loss. The extract group also lost on average two inches off their waist and hip circumference.²

In a human study, subjects supplemented with citrus fruit/seed extract shed 9.73% of their white abdominal fat stores. This nearly 10% loss of abdominal fat promoted a healthy inflammatory response.

Proper use of this citrus fruit/seed blend can help jump-start a weight-loss program.

**Mediterranean Trim: Low-Cost Support For Healthy Weight Management**
Mediterranean Trim contains a synergistic blend of polyphenolic compounds specially selected from potent Mediterranean citrus fruits that have been shown to aid in the breakdown of stored body fat.¹,²

Mediterranean Trim also contains an extract from the Brazilian guarana seed that has been shown to reduce localized fat deposits via similar mechanisms.

The suggested dose is 450 mg, twice daily at breakfast and at lunch.

You can enjoy the benefits of activating your hormone-sensitive lipase enzyme for as low as 40 cents a day—one of the great bargains for a nutrient blend with this level of supporting clinical research.

Mediterranean Trim with Sinetrol™-XPur should be used in conjunction with a healthy diet and regular exercise program. Although real-world results often vary from what is observed in placebo-controlled studies, you could experience similar benefits found in the clinical trial participants using these active ingredients.

**Mediterranean Trim with Sinetrol™-XPur**

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Member Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$18</td>
<td>$13.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$16 each</td>
<td>$12 each</td>
</tr>
</tbody>
</table>

To order Mediterranean Trim with Sinetrol™-XPur, call 1-800-544-4440 or visit www.LifeExtension.com

---

References

Non-GMO
Sinetrol™ is a trademark of Fytexia®.
This supplement should be taken in conjunction with a healthy diet and regular exercise program. Results may vary.
The Value Of Testing Beyond Cholesterol And LDL For The Prevention Of Heart Disease

Preamble By William Falloon

This article describes newly available blood tests that will likely save the lives of millions of humans if they are incorporated into widespread screenings of the general population.

Standard blood tests measure the amount of LDL in one’s blood. They do not, however, reveal the degree to which the LDL is oxidized or other factors that increase LDL’s vascular risk profile.

New tests are available to measure these atherogenic variables. These tests are suited for people with existing vascular disease, those with family histories of heart disease or other risks of heart problems, and for individuals who can afford the additional cost.

At this time, we don’t know if all Life Extension® members need these new tests that measure oxidized LDL (and its byproducts). That’s because the nutrients members already take may be sufficiently neutralizing these forms of atherogenic risk.

Once Life Extension®’s medical experts review members’ results, we’ll be able to determine which individuals may be at higher risk for having oxidized LDL and the steps needed to reverse this common cause of arterial occlusion.
Doctors today routinely measure cholesterol levels with a standard lipid profile blood test. But this test omits some diagnostic information that could leave you at significant cardiovascular risk.1,2

A much better approach is to directly measure the oxidized fats and their immediate consequences within arteries.3,4 New studies are revealing the dangerous association among three fundamental measures of lipid oxidation and increased heart disease risk.

Measuring OxLDL is now possible with a simple blood test. Research shows that even apparently healthy men with elevated OxLDL levels have a more than 4-fold increased risk for a future coronary heart disease event compared with those with the lowest levels.16 What makes this test so important for avoiding heart disease is that plasma OxLDL is a stronger predictor of such events than a conventional cholesterol blood test.16 As OxLDL levels rise, so does the presence and extent of coronary artery disease; that risk is three times greater for those with the highest versus the lowest OxLDL levels, and nearly 17 times as great in those who also have high cholesterol.15

OxLDL levels also predict your risk of having metabolic syndrome, that combination of being overweight and hypertension with disturbed regulation of blood sugar and lipids that dramatically raises risk for heart disease, stroke, diabetes, and cancer.17-19 One study showed that those with the highest levels were at nearly four times the risk for metabolic syndrome than were those with the lowest.20

These three new tests measure:3-5

1. Oxidized LDL
2. Myeloperoxidase
3. F2-isoprostanes

These three tests assess vascular damage as well as markers of oxidized fat in the blood, which provides predictive value for cardiovascular disease that goes beyond standard lipid panel testing.3,4,6

For many years these cutting-edge tests were not available to the public. They were used primarily at universities for research and were far too expensive for general use. However, Life Extension9 has worked long and hard to bring these innovative tests to its members to help further diagnose and reduce potential risk factors for cardiovascular disease.

**Testing For Oxidized LDL Cholesterol**

We have long known that oxidized LDL (OxLDL) triggers dangerous inflammatory changes that lead to atherosclerosis.7,8 But most physicians were unable to test for this cardiac risk factor as the test was expensive and restricted to research labs and universities. OxLDL is now proving to be a risk predictor for metabolic syndrome, cardiovascular disease in general,9-11 and acute myocardial infarction (heart attack) in particular.12

Oxidized cholesterol (OxLDL) levels show a strong correlation with having acute coronary syndromes (angina, or chest pain, ischemia, or evidence of low blood flow on ECG) and the risk of heart attacks.8 In fact, the higher the OxLDL level, the more severe the signs and symptoms of heart disease. People with more advanced ischemic heart disease show significantly more OxLDL in the macrophages.8 And the higher the OxLDL level in blood9 and plaques, the greater the risk of plaque rupture, with devastating consequence.14,15 Higher OxLDL levels should raise concern and prompt interventions to extinguish this vascular risk factor.
What You Need To Know

Myeloperoxidase:
A Direct Measure Of Arterial Damage

Myeloperoxidase (MPO) is an enzyme produced by inflammation-generating white blood cells in your body.\(^1\) The enzyme demonstrates a wide range of atherosclerosis-promoting effects, including production of OxLDL and oxidized HDL cholesterol and increased fragility of plaque lesions.\(^1,2,22,23\) MPO also reduces the availability of nitric oxide,\(^24\) a signaling molecule that tells blood vessels to relax and lower blood pressure.\(^25,26\)

When arterial walls are damaged by elevated pressure,\(^27\) plaque, or even inflammation alone, white blood cells invade to repair the damage, releasing MPO.\(^3\) MPO is a direct measure of plaque-promoting blood vessel inflammation; it also activates enzymes that degrade the protein-rich “cap” on arterial plaques,\(^30\) making them increasingly vulnerable to catastrophic rupture.\(^31,32\)

MPO levels are significantly higher in apparently healthy adults who go on to develop coronary artery disease. Those with the highest MPO levels have a nearly 50% increase in risk versus those with the lowest.\(^2,6\) Of extreme importance, the increased risk associated with elevated MPO levels was seen even in people with normal LDL, HDL, and CRP measurements.\(^2\)

Similarly, in people with chest pain or ECG abnormalities, a raised MPO level predicted the risk of a heart attack even when they had normal levels of troponin T, a marker of heart muscle injury frequently used in emergency rooms to detect an early heart attack.\(^22,33,34\) In other words, MPO elevations revealed hidden risk in people who otherwise would have thought their arteries were in good shape. Such early detection can help people make important changes to reduce their risk.

People with acute coronary syndrome (chest pain and/or ECG changes, even without a heart attack) are at vastly increased risk for developing a heart attack in the near future.\(^35,36\) With that said, there is always a need to identify new and accurate independent biomarkers that predict heart attack risk.\(^37\)

Measuring MPO can reveal a person’s risk more accurately. By way of example, people with acute coronary syndrome with MPO levels below about 20 ng/mL have an 88% chance of evading a heart attack over the next 24 months, compared with a 74% chance of such survival in those with elevated MPO levels.\(^37\)
In the presence of oxidizing free radicals, prostaglandin-like molecules called F2-isoprostanes can be produced from arachidonic acid resulting in unregulated outpourings of this proinflammatory signal.44-46

The damage done by F2-isoprostanes is not restricted to blood vessel inflammation. Like their normal prostaglandin counterparts, F2-isoprostanes promote the clumping of platelets, the tiny cell fragments in blood that participate in the clotting mechanism. Under the stimulus of F2-isoprostanes, platelets clump more aggressively, contributing to increased risk of arterial blockage, particularly at the site of an existing plaque.45,47,48 Note that, because formation of F2-isoprostanes does not require the COX enzyme, the use of COX-inhibiting medications like aspirin will not counteract the platelet effects, rendering useless an important form of prevention in cardiovascular disease.47

F2-isoprostanes are easily measured in a urine specimen, making them especially attractive as a means for long-term monitoring of cardiovascular risk. People with elevated urinary F2-isoprostanes are at a more than 30-fold risk for developing coronary heart disease compared with those with normally low levels.3 People who smoke49 and those who eat red meat,50 both known cardiovascular risk factors, have been shown to have significantly higher plasma or urinary F2-isoprostanes than do people with healthier lifestyle habits, while those who regularly exercise have lower levels.46,51,52 Intriguingly, it is becoming evident that high urinary F2-isoprostanes also signal an increased risk of certain cancers, further attestation to the powerful interactions of oxidative damage and inflammation in the body.53,54

F2-isoprostanes: Detecting A Culprit In Vascular Inflammation

Your body uses signaling molecules to announce the presence of damaged tissue and to trigger the healthy inflammatory response.38,39 Cytokines,40 leukotrienes,41 and prostaglandins42 are all families of such proinflammatory signals. Under normal circumstances, these molecules are degraded and disappear, ending the inflammatory stimulus. But if inflammation-promoting molecules continue to be manufactured, the inflammation will persist, leading to long-term damage.

One of the major sources of inflammatory prostaglandins is arachidonic acid, a major component of cell membranes.43

Interpreting Your Test Results

Here are some numbers to help you interpret the results of your advanced testing for cardiovascular disease.

**Oxidized LDL (OxLDL):** If your level is less than 60 U/L, your risk is considered low; from 60 to 69 defines moderate risk, and levels of 70 or higher put you at high risk.68

**Myeloperoxidase (MPO):** A level below 480 pmol/L indicates normal risk, while 480 or higher suggests increased cardiovascular risk.69

**F2-isoprostanes:** Your risk is low when your level is less than 0.86 ng/mg; at or above that level places you at high risk.70

Those with the highest MPO levels have a 2.4-fold increase in their risk for dying of cardiovascular disease over 13 years versus those with the lowest levels.4 Combining MPO, which provides direct evidence of arterial damage, with C-reactive protein (CRP), a more general measure of inflammation, can further refine an individual's risk prediction for cardiovascular disease: Having both MPO and CRP elevated puts you at more than four times the risk of dying from heart disease.4

Taken together, these figures suggest that MPO can be used to give you a lifesaving early warning to turn your cardiovascular health around while there's still time.
What To Do If Oxidation-Inflammation Levels Are Elevated

Testing for blood levels of oxidized LDL (OxLDL), myeloperoxidase (MPO), and urinary F2-isoprostanes provides tremendous insight into what is going on at the molecular level in one’s body.

If your levels are elevated, you’ll find precious little help from mainstream medicine, despite its enormous stock of chemical drugs.

A better approach is to choose from among the growing list of supplements that are proven to reduce these markers (and mediators) of cardiovascular disease. Here is a partial listing of supplements that can reduce markers of lipid oxidation:

- Omega-3 fatty acids from fish oil
- Vitamin E
- Gamma tocopherol combined with sesame lignans
- L-carnitine
- Zinc
- Grape seed extracts and/or resveratrol
- Pomegranate
- Superoxide dismutase (SOD)
- CoQ10
- Whole grape extracts
- Indian gooseberry

Why Oxidized Cholesterol Is Dangerous

If you have ever smelled rancid butter, cooking oil, or grease, you have experienced first-hand the impact of oxidation on fats. Fat molecules are especially vulnerable to oxygen, which is found in abundance in arterial blood. When the fat and oxidation come together, the resulting chemical reactions change the shape and the function of fat molecules. Your body tries to handle oxidized fat molecules with antioxidants, but if the antioxidants become overwhelmed, then the cholesterol molecules including LDL and HDL become oxidized. This oxidized LDL will damage the walls of the artery. Once there, specialized cells called macrophages identify oxidized fats as “foreign” materials, and engulf them to take them out of circulation. But these oxidized LDL laden macrophages can accumulate in the arterial wall, beneath the delicate endothelial layer, where they reside as so-called foam cells. And foam cells, in turn, trigger inflammatory changes in the arterial wall, which eventually lead to the formation of an inflammatory plaque. Since oxidized LDL is a powerful initiator of this devastating process, it is important to keep oxidized LDL levels at a minimum.

Inflammatory plaque contains white blood cells and cellular debris, along with inflammatory signaling molecules. Drawn by oxidized fats, macrophages from the immune system swarm into the inflamed plaque area, consume the oxidized LDL, release toxic chemicals that cause swelling and inflammation and form foam cells. These foam cells then die, creating debris that fill the inflamed tissue and perpetuate even more inflammation. Levels of oxidized LDL cholesterol within plaques are nearly 70 times greater than in circulating blood.

An inflammatory plaque bulging into an artery can significantly reduce blood flow through that artery. Worse, if the plaque ruptures, it sends a shower of debris, including oxidized fats, cell fragments, and clumped platelets, downstream to where it can become trapped in the narrowing vessel. When that happens, blood flow suddenly becomes reduced or blocked and the victim experiences a heart attack (myocardial infarction) or an ischemic stroke. The recent onset of inflammation affecting atherosclerotic plaques is known to be related to acute coronary syndromes (including chest pain, characteristic ECG changes, and eventually heart attack).

Currently, doctors measure levels of inflammation in order to try to understand a person’s cardiovascular risk in the face of apparently normal lipid levels. Such measurements reinforce the connections between oxidation, inflammation, and cardiovascular disease. For example, among apparently healthy men, those with the highest baseline levels of inflammation, as measured by C-reactive protein (CRP), were at a nearly 3-fold risk of heart attack and almost double the risk of ischemic stroke, compared with those at the lowest levels of inflammation. Similar risk elevations of 2- to 3-fold have been shown in other studies measuring inflammatory changes in addition to standard lipid levels. Mainstream medicine has finally begun to target inflammation as a drug-treatable risk factor for atherosclerosis.
### Summary
Measurement of blood cholesterol, LDL, HDL, and triglycerides (lipid profile) as a means of identifying people at high risk for cardiovascular disease is more than four decades old.\(^6^7\) There is no doubt that early detection and intervention has saved lives. But in today’s world, simply knowing your cholesterol levels provides only partial protection.

Low cholesterol and LDL levels may not indicate safety, while elevated levels may not paint an accurate picture of the true risk situation. More precise markers of cardiovascular risk are now available at relatively affordable prices.

- Measurements of oxidized LDL (OxLDL) offer insights into how much damage is being done to the lipids in your bloodstream.
- Measurement of myeloperoxidase (MPO) can indicate the impact of inflammatory changes on your blood vessels.
- Measurements of F2-isoprostanes in a urine specimen can tell you to what extent your body’s own fat molecules are participating in inflammatory changes that can dramatically affect your health.

You now have the following options that can be added to the recommended Male or Female Panels:

### Oxidized LDL

<table>
<thead>
<tr>
<th>Item LC817472</th>
<th>Retail Price: $100</th>
<th>Member Price: $75</th>
<th>Super Sale Price: $56.25</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(valid when ordered by June 1, 2015)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Oxidized LDL Panel (Myeloperoxidase)

<table>
<thead>
<tr>
<th>Item LC100034</th>
<th>Retail Price: $233.33</th>
<th>Member Price: $175</th>
<th>Super Sale Price: $131.25</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(valid when ordered by June 1, 2015)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Advanced Oxidized LDL Panel (F2-isoprostanes And Myeloperoxidase Panel)

<table>
<thead>
<tr>
<th>Item LC100035</th>
<th>Retail Price: $380</th>
<th>Member Price: $285</th>
<th>Super Sale Price: $213.75</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(valid when ordered by June 1, 2015)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If any result comes back elevated, you are in a position to initiate a sensible program of dietary changes, regular exercise, and appropriate nutritional supplements.

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

Dr. Scott Fogle is the Director of Clinical Information and Laboratory Services at Life Extension®, where he oversees scientific and medical information as well as its laboratory division.

### References


Obtain the Power of Magnesium

Magnesium is the most important mineral in the body, yet most Americans do not obtain sufficient magnesium from their diet. Magnesium is required for more than 300 biochemical reactions and many of the body’s critical functions are dependent upon it. Magnesium helps:

- Maintain normal muscle and nerve function.
- Keep heart rhythm steady.
- Support a healthy immune system.
- Keep bones strong.
- Maintain blood sugar levels already within normal range.
- Promote normal blood pressure. Magnesium is also...
- Involved in energy metabolism and protein synthesis.

The recommended intake of magnesium to maintain vascular health is 500 mg or more a day. With Life Extension® Magnesium Caps, you can easily obtain 500 mg of elemental magnesium for less than 7 cents a day! A bottle of 100 vegetarian capsules of 500 mg Magnesium Caps retails for $12. If a member buys four bottles, the price is reduced to $7.50 per bottle.

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

References

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Aging is Characterized by Inflammation, Glycation, and Mitochondrial Decay
The loss of cellular vitality is caused by a number of factors, including mitochondrial problems, glycation, and free radical reactions. Life Extension® members have access to a state-of-the-art nutritional formula called MITCHONDRIAL ENERGY OPTIMIZER WITH BioPQQ® that helps protect delicate cellular structures and enables cells to perform life-sustaining metabolic processes.

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

- **CARNOSINE**: As humans age, proteins in their bodies become irreversibly damaged by glycation reactions. Glycation is the cross-linking of proteins and sugar to form non-functioning structures called advanced glycation end products in the body, which can lead to alterations of normal cell function. Carnosine is not only a powerful anti-glycating agent, but it also protects neurons against reactive and cytotoxic protein carbonyl species associated with normal aging.13

- **PQQ**: This breakthrough micronutrient has been shown to trigger mitochondrial biogenesis—the growth of new mitochondria in aging cells. 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.11-15

- **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 Benfotiamine protects endothelial cell integrity from the effects of high glucose levels. In addition, benfotiamine exhibits direct antioxidant capacity and supports DNA function.20

- **PYRIDOXAL 5'-PHOSPHATE**: Aging results in the formation of advanced glycation end products throughout the body. Pyridoxal 5'-phosphate is the active form of vitamin B6 that has been shown to protect against both lipid and protein glycation reactions.22-24

- **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

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

Taking all of the individual ingredients in the Mitochondrial Energy Optimizer with BioPQQ® separately would be prohibitively expensive, but Life Extension® members obtain this comprehensive formula at substantial savings. A bottle of Mitochondrial Energy Optimizer with BioPQQ® containing 120 capsules retails for $94. If a member buys four bottles, the price is reduced to $58.50 per bottle.

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

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

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

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

References:

Bio-Enhanced® is a registered trademark of GenBio Research, Inc. ArginoCarn® is a registered trademark of Sigma- tau HealthSci, and is manufactured exclusively under U.S. production patent 6,703,042 and worldwide production patent EP1202956. The combination of Acetyl-L-Carnitine and Alpha Lipoic Acid is patented by Sigma-tau under U.S. patent 6,365,622. BioPQQ® is a registered trademark of MGC (Japan).
As you age, it becomes critically important to maintain an optimum balance between “good” and “bad” cholesterol, otherwise known as HDL and LDL, in order to maintain a healthy cholesterol profile.

For those who seek a safe and natural way to support healthy cholesterol levels, researchers have discovered two compounds that help promote healthy levels of both LDL and HDL already within normal range.¹⁻⁴

**CHOL-Support™** is formulated with a triple standardized artichoke leaf extract and pantethine, the biologically active form of pantothenic acid¹ to maintain healthy HDL, LDL, and total cholesterol levels already within the normal range.¹⁻⁴

**Artichoke Leaf Extract**
Clinical studies now demonstrate that artichoke leaf extract’s polyphenolic compounds¹ support optimal HDL/LDL ratios already within normal range.¹⁻²

**Pantethine**
Clinical trials show pantethine safely maintains LDL and total cholesterol already within the normal range, without reducing protective CoQ10 levels.³

Two daily liquid vegetarian capsules of CHOL-Support™ offer comprehensive cardiovascular protection by providing unparalleled support for an optimal cholesterol profile.

Non-GMO

Pantesis® is a registered trademark of Daiichi Fine Chemical Co., Ltd.
Pycrinil® is a registered trademark of Indena S.p.A., Italy.

**References**

To order CHOL-Support™, call 1-800-544-4440 or visit www.LifeExtension.com
One of the fastest-growing areas in medicine today is the use of testosterone in men, particularly during the middle years. Most of my academic credentials within medicine come from my work with testosterone, as I was one of the first to recognize that healthy men can experience an age-related natural decline in hormones that affects their sexuality and vitality, and which can be treated successfully with testosterone therapy. Although testosterone has been used since the 1930s, it was a small backwater in medicine until the last 20 years or so. I feel as if I were there at its modern-era birth and have taken a degree of uncertain pride as I’ve watched the field expand. Although I’ve published many articles on the benefits of testosterone, my greatest contribution has been to show that the long-held belief that testosterone is risky for prostate cancer is false. As the fear of testosterone has declined, physicians have become more comfortable with it, leading to a crescendo of interest in its use.
Men Are Also Hormonal

Over the last 10 years, the fastest pharmaceutical sector is testosterone, growing at more than 10% per year. There are a huge number of men out there who have the symptoms of low levels of testosterone. As this problem gained attention from physicians about 10 to 15 years ago, there was a push to talk about andropause, a male version of menopause.

I started to use the term low T in the office and during lectures to describe the condition that has otherwise been called hypogonadism, or testosterone deficiency syndrome. My colleagues thought low T was too simplistic a term, but it worked for me and my patients, and I continue to use it. Nonetheless, I was surprised to hear one day that my verbal shorthand had been co-opted by the industry. Now, television and print ads ask, “Is it low T?”

Are Men Like Lizards?

We think of testosterone as the male sex hormone, and to a great extent, this is true. However, testosterone is involved in so many biological functions for men that it is difficult to come up with a biological system that is not affected by testosterone. What is remarkable is that researchers have been studying testosterone in animals for many decades, yet with humans it is as if we are just beginning to learn about something brand new.

When I graduated from my urological residency in 1988 and came on staff as a young attending physician, I was curious about testosterone because of research I had done as an undergraduate. During my training I had been taught that testosterone was important for sex drive but not much else, and that a man needed to have almost no testosterone left at all before his low T levels caused sexual issues. There was some grudging acknowledgment that perhaps testosterone treatment might help some men with erection issues, perhaps 5% at most, but this number was so small that no one was spending much time looking into treatments.

In my sophomore year at college, I started on a boring, tedious project, mapping out which parts of the lizard brain took up radioactive samples of hormones that had been previously injected into the bloodstream.

The lizards I worked with were the American chameleon, Anolis carolinensis. When a normal male lizard is placed in a cage with a female, the two of them go through what is called a sexual behavior, much like a dance. The male will extend the bright reddish orange flap of skin under his jaw, called a dewlap. He then does what we call a “stuttering push-up,” bobbing his head up and down rapidly. In response, the female will do a stately, single push-up, indicating she is receptive. The male will approach and repeat the behavior, extending his dewlap and performing his stuttering push-up. After a few repetitions, the male will grasp the female by the nape of her neck and mount her.

However, when the males were castrated, that is, had their testicles removed, they did none of this. They behaved as if they couldn’t have cared less. If testosterone levels in the blood were restored in these animals, the males would again perform their usual sexual behavior. The sexual “dance” was a testosterone effect.

The exciting part of my research project was to see what would happen if I implanted hormones directly into the sexual centers in the brain.
I didn’t quite know what to expect after I’d done my first testosterone insertions. The experiment was a home run. Castrated males behaved sexually just like normal males if testosterone was inserted in the correct part of their brains. What this experiment proved was that testosterone is a brain hormone, and its actions on the brain are enough to organize the entire set of behavioral responses.

Involved in male sexual behavior are attraction, behavioral display, and mating. I spent nearly three years in the lab and published my first three scientific papers from that experience and related experiments.

Once I had my own practice seeing patients who had come to see me for weak erections or diminished libido, I couldn’t help but wonder whether there might be a testosterone connection, given my research experience with lizards. So I started obtaining testosterone blood tests in my patients. I was immediately surprised by how many of these men had low testosterone levels.

Testosterone acts on the brains of humans, just as it does in male lizards, rats, and any number of species, to create sexual desire.

Testosterone controls the production of nitric oxide, the chemical signal in the penis that initiates erections. And it is also necessary for the maintenance of penile smooth muscle, responsible for the control of blood flow into and out of the corpora cavernosa.

The Big Fear

For the last 20 years, the greatest impediment to the use of testosterone therapy has been the fear that raising testosterone levels is dangerous for prostate cancer. It started with a publication in 1941 by Charles Huggins, MD, and his co-author, Clarence Hodges, MD, in which they demonstrated for the first time that cancers can be sensitive to hormonal manipulation. These two researchers from the University of Chicago castrated men with metastatic prostate cancer and showed that levels of a chemical called acid phosphatase were reduced, indicating improvement in the cancer. This was the first treatment for advanced prostate cancer that had shown any efficacy. Within a few years, castration had become a standard treatment around the world, and Huggins, as the lead investigator, became famous, ultimately being awarded the Nobel Prize in Physiology or Medicine in 1966.

Huggins and Hodges also reported that “in all cases,” the injection of testosterone to these same men with metastatic prostate cancer caused acid phosphatase levels to rise. They concluded that testosterone causes “activation” of prostate cancer and an “enhanced rate of growth.” From that point forward, medical students around the world have been taught that high testosterone levels cause prostate cancer; low testosterone levels protect the prostate from cancer; and providing testosterone to a man with prostate cancer is like “pouring gasoline on a fire” or “feeding a hungry tumor.”

Once I started seeing the benefits of testosterone therapy in men, my greatest concern was that the treatment I was offering might be like a pact with the devil: If these men were restored to youthful vitality and sexuality, it was at the expense of developing prostate cancer. What followed for me was a 20-year exploration into the relationship of T and prostate cancer, eventually resulting in the widespread, albeit not yet universal, rejection of those long-standing concerns.

In the early 1990s, I began performing prostate biopsies in men with low T even though they had normal levels of PSA, the blood test used to diagnose prostate cancer, since I wanted to make sure these men didn’t harbor a hidden cancer in their prostates, which might grow out of control if I treated them with testosterone. Although it was taught that men with low T are at extremely low risk for prostate cancer, I found an astonishingly high number of cancers in these men. In 1996, my colleagues and I published these results in the *Journal of the American Medical Association*, reporting that low T appeared to be as great a risk for prostate cancer as an elevated PSA. Low T was not protective at all.
Yet for a time I still clung to the belief that high levels of testosterone must be risky. In 2004, I published with my fellow, Ernani Rhoden, MD, from Brazil, an article for *The New England Journal of Medicine* on the risks of T therapy. After reviewing approximately 200 medical articles, we could not find a single one that showed a compelling, worrisome relationship between high levels of T and prostate cancer. This was beyond strange. It had been universally accepted for decades that high testosterone is dangerous for prostate cancer and low T is protective, yet there appeared to be no evidence to support either of these beliefs.

To discover the source for these universally held beliefs, I made my way to the basement of the Countway Library at Harvard Medical School, which contains centuries-old medical journals. The very oldest of these are kept locked or under glass, but in the archives in the basement are volumes from the 1800s, waiting to be read by medical “archaeologists.”

I found the volume holding the Huggins and Hodges article from the 1941 edition of *Cancer Research*, and as I pored over the text I had a “Eureka!” moment, like an electric buzz throughout my body. Although Huggins and Hodges had claimed that every one of their patients with metastatic prostate cancer who received testosterone developed an ominous increase in acid phosphatase concentrations, my close reading revealed they had administered testosterone to only three men. Of these, they only provided results for two. And one of these men had already been treated in another way, which made it impossible to determine the effect of testosterone alone. For the last seven decades, the belief that testosterone makes prostate cancer grow like wildfire was based on the results of a blood test from a single patient!

It turns out that prostate cancer does need some testosterone to grow optimally, but it can only use a little bit. Once the need for testosterone has been satisfied by the tumor, any additional testosterone is simply excess. A good analogy is a houseplant and water. The houseplant (think prostate cancer) definitely needs water (think testosterone), but once it’s been adequately watered, no matter how much additional water one gives it will not cause it to grow as tall as a sequoia tree. So it is with prostate cancer and testosterone.

Based on these findings, and despite warnings from colleagues several years ago, I started offering testosterone therapy to men with known prostate cancer. Today, men with prostate cancer fly from around the country to see me, each hoping that I will find him to be a reasonable candidate for T therapy to treat his ED. Many of them are.

In May 2011, I published with my colleagues Larry Lipshultz, MD, and Mohit Khera, MD, from Baylor Medical College, a report in the *Journal of Urology* on 13 men with untreated prostate cancer who received testosterone therapy for an average of two-and-a-half years. They had an average of two sets of follow-up prostate biopsies. None of the men showed any progression of their cancers, and in 54% of the biopsies, we couldn’t find any trace of the cancer that had been there earlier. It was a small study, so we must be careful not to overstate the conclusions; however, this was the very first time since Huggins in 1941 that anyone had bothered to look directly at what actually happens to an existing localized prostate cancer when a man receives testosterone treatment. The answer appears to be: “Not much.” I’ve since treated many more of these men, with similar, good results.

Testosterone affects not only men’s sexual desire and performance, but also their mood, thinking, muscle, fat, and sense of vitality and well-being. When testosterone levels drop far enough, men get suddenly sweaty and can even experience hot flashes, just like menopausal women. Testosterone production declines with age, but even young men can have low levels. I’ve treated teenagers and men in their early twenties for low T, but most men I see with low T are in their forties and above. It’s also extremely common, with some studies showing that as many as 40% of men over the age of 45 have low levels of testosterone.
Treatment is quite safe, so it’s very reasonable for a man with characteristic symptoms—low desire, weak erections, chronic tiredness—to ask his physician to have his blood checked for low T. Just be aware that many of the labs categorize a testosterone result as “low” only if it is very low, which means that if a man has symptoms and a T level that is at the low end of normal, it may still be worthwhile to consider a three-month trial of treatment. As my colleagues and I have published, men with symptoms and these below-normal testosterone levels respond just as well to treatment as men with unquestionably low testosterone.

Since testosterone levels decline with age, some have argued this means the decline should be considered a normal part of aging and therefore should not be treated. It’s an argument that we hear elsewhere: Why do we have to medicalize normal aging? My response is simple. Normal aging stinks. Aging is associated with bad eyesight, bad hearing, bad teeth, bad joints, bad blood vessels, bad hearts, and cancer. We treat all of these in order to improve our lives and, in some cases, our longevity. Just because a condition becomes common as we age doesn’t mean we should resign ourselves to it if treatment is helpful and safe.

I had exceptionally good eyesight until my early forties, at which point I found I had to hold books farther and farther away from my face in order to read them due to the “normal” age-related decline in near vision called presbyopia. Now I wear an artificial contraption of metal and plastic on the front of my face in order to read. Am I somehow disobeying the laws of nature by wearing glasses? I think not. Similarly, if a man with low T wants testosterone therapy in order to feel better and more sexual, I see no reason to deprive him of a trial of treatment just because many men his age are experiencing the same problem.

Here is a medication that can make men feel more energetic, improve erections and sexual desire, increase muscle strength and mass, decrease fat, strengthen bones, improve mood, and make men feel that their minds are sharper. Can anything really be that good? The answer is, simply, “Yes.” Of course, not everyone responds to T therapy, and of those who do, the response is not always so dramatic.

As I see it, low T is underrecognized, underdiagnosed, and undertreated. In my own practice I have seen far too many men with low T who had been discouraged from trying T therapy or told they didn’t even have the condition. Many of those men have responded to T therapy beautifully and feel that they are healthier, happier, in addition to being better sexually. Now that the fear of prostate cancer from T therapy is finally waning, there is no good reason to deprive men of a treatment that may help them regain their mojo.
The Most Effective Form Of CoQ10

CoQ10 Energizes Aging Cells by Enhancing Mitochondria Activity

Published studies on CoQ10 absorption clearly show that ubiquinol CoQ10 is superior to the conventional ubiquinone form. In middle-age mice, ubiquinol proved 40% more effective in slowing measurements of aging compared to ubiquinone.

A 2014 study further validates that ubiquinol activates mitochondrial functions to slow aging in mouse models.

Life Extension® goes one step further and adds shilajit to its ubiquinol formula in a product called Super Ubiquinol CoQ10. Shilajit has been shown to promote mitochondrial metabolism, helping mitochondria convert fats and sugars into ATP—the main source of cellular energy. When combined with ubiquinol CoQ10, it has been shown to double levels of CoQ10 in the mitochondria.

The latest studies reveal that when shilajit is combined with CoQ10, cellular energy substantially increases. Combining the two ingredients produced a 56% increase in energy production in the brain—40% more than CoQ10 alone! In the muscles, there was a 144% increase!

To order Super Ubiquinol CoQ10, 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.
Top Off Your TESTOSTERONE Naturally

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

Maintaining healthy testosterone levels is one of the most important steps you can take to regain your health and improve your performance. With research showing that by the time a man is 60 years old, he may produce 60% less testosterone than he did in his 20s, the time is now to add Life Extension®’s Super MiraForte with Standardized Lignans to your supplement regimen.

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

Each daily dose of Super MiraForte with Standardized Lignans contains the following testosterone supporting ingredients:
- 1,500 mg Chrysin
- 15 mg Bioperine®
- 850 mg Muira puama
- 282 mg Nettle root
- 15 mg Chelated elemental zinc
- 320 mg Maca
- 33.4 mg HMRlignan™
- Norway Spruce lignan extract

To order Super MiraForte with Standardized Lignans call 1-800-544-4440 or visit www.LifeExtension.com

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

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

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Protect Your Skin From Age-Related Glycation
At this very moment, a destructive process called *glycation* is aging your skin from the inside out.\(^1,2\) In fact, researchers recently uncovered compelling evidence that stresses “*the importance and possibly central role of glycation in skin aging.*”\(^2\)

Glycation occurs when sugar molecules bind to proteins like collagen in living tissues, and culminates in the formation of deadly complexes called advanced glycation end products (AGEs).\(^1,3\) This in turn significantly disrupts collagen metabolism and paves the way for wrinkles, creping, and loose skin.\(^4,5\)

That’s why researchers have ramped up their efforts to identify safe and effective ways to target this enemy of healthy skin. In this article, we will explore how five topical compounds protect against the detrimental effects of glycation as we age and promote dermal regeneration.

As part of a comprehensive approach for skin health that includes a reduction in sugar-laden foods and refined carbohydrates, as well as limiting high-temperature cooking methods, these clinically proven compounds can reduce glycation and AGEs formation to retain the skin’s youthful appearance.
**Glycation Accelerates Intrinsic Skin Aging**

When excess sugar, such as fructose or glucose, floats around the bloodstream, it has a propensity for binding to functional proteins through a chemical process called glycation.1,8

Once glycated, these proteins are rendered dysfunctional and undergo further structural rearrangements to form dangerous advanced glycation end products (AGEs) that accumulate in the brain, kidney, arteries, and skin as we get older.9-11 This is evident in diabetics, whose systemic complications are tied to abnormal AGE levels.12

The dermis, which provides strength and resiliency to skin,13 consists primarily of an extracellular matrix that has a high quantity of the protein collagen, particularly types I and III.14,15 Due to its slow turnover rate and exposure to elevated glucose levels outside of cells,16,17 collagen falls victim to glycation and AGE formation.18 The result is extensive cross-linking of collagen molecules, turning them from tough and flexible to brittle and stiff.19,20 This decreases skin's elasticity and sets the stage for the development of wrinkles and sagging skin.

AGE-modified collagen is highly resistant to repair mechanisms, which allows it to accumulate and impair the structural integrity of the dermis.13 It has been shown to cause the collapse of specialized cells known as fibroblasts that produce and organize collagen fibers.16 This strongly influences collagen homeostasis and subsequently leads to less collagen production and more breakdown in the skin.3,16 To make matters worse, ultraviolet (UV) exposure21,22 and AGE formation itself generate free radicals that further exacerbate this problem by increasing activity of the collagen-degrading enzyme matrix metalloproteinase-1 (MMP-1).23,24

Scientists have grasped the enormity of glycation-related skin damage and therefore have searched for new ways to inhibit glycation reactions and enhance the regeneration of the skin's matrix. Let's now take a look at how a variety of topical compounds accomplish this to reveal fresher, younger-looking skin.

**Terminalia Chebula Fruit Extract**

The fruit of the plant *Terminalia chebula* is highly revered in traditional Chinese and Ayurvedic medicine for treating a wide range of health conditions, from asthma to heart disease.25,26 These health benefits have been largely attributed to the fruit's broad spectrum of potent phytochemicals, which include polyphenols, anthocyanins, and alkaloids.25,27,28

The substantial activity of the compounds in *Terminalia chebula* fruit extract neutralizes free radicals and reduces AGE formation that promotes toxic sugar-protein reactions.29-31 Research demonstrates that this novel extract was seven times more effective at reducing glycation than the well-known glycation inhibitor aminoguanidine.32 Other research indicates that one of its main constituents, chebulic acid, acts as a powerful hammer to break the bond existing between abnormally cross-linked proteins, setting them free and restoring their critical functions in various organs, including the skin.31 By being both an inhibitor and breaker of glycation cross-linking, *Terminalia chebula* fruit extract offers a unique advantage for fighting or even reversing skin aging.

These impressive findings led to additional research, but this time in humans. Scientists conducted a clinical trial in which a topical formula containing *Terminalia chebula* fruit extract was applied twice daily to the face of 15 human volunteers aged between 41 and 65. At the end of the 12-week study, participants significantly reduced wrinkle depth by 22% and skin roughness by 24% compared to baseline. Dermatological evaluation also revealed improvements for skin brightness, tone, and dryness.33

**Blueberry Extract**

Blueberries have long been known for remarkable anti-inflammatory and free-radical fighting properties, which can be credited to their wealth of phenolic compounds known as anthocyanins.34-39 By combating free radicals and reducing the release of proinflammatory cytokines,39,40 blueberries can safely break the self-perpetuating cycle of AGEs and oxidative stress that underlies intrinsic skin aging.41-43

When researchers tested the anti-glycation activity of various fruits, blueberries ranked as one of...
What You Need To Know

Blueberries have been shown to improve the undesirable skin changes that accompany aging. In a study of 20 diabetic females older than 55 years with elevated skin AGEs, a topical preparation containing blueberry extract significantly improved skin tone and smoothness, fine lines, crepiness, and firmness after 12 weeks with excellent tolerability. Although no changes in skin AGEs was observed, researchers believe that a study with a longer duration might have produced a different result.

In another clinical trial, six weeks of supplementation with an oral mixture containing blueberry extract in 62 women aged 45-73 significantly increased skin elasticity by 9% over a placebo, and after 12 weeks significantly decreased skin roughness by 6% compared to the control group.

Prevent Skin Glycation With Topical Nutrients

- Glycation refers to a spontaneous reaction between sugar, such as fructose and glucose, and proteins like collagen that reside in the skin’s vital matrix.

- This culminates in the formation of advanced glycation end products (AGEs) that cause damage to collagen molecules, leading to wrinkles, creping, and loose skin.

- Scientists have identified topical nutrients, including *Terminalia chebula* fruit extract, pentapeptide-34 trifluoroacetate, blueberry extract, hexapeptide-3, and pomegranate extract, that work in complementary ways to protect the skin against the detrimental effects of glycation as we age and promote dermal regeneration.

- As part of a comprehensive approach that includes reducing sugary foods and refined carbohydrates, as well as proper cooking methods, these compounds, proven clinically or in the lab, reduce glycation and AGE formation to preserve the skin’s youthful appearance.

**Pentapeptide-34 Trifluoroacetate**

The fat-soluble compound coenzyme Q10 (CoQ10) is an essential component in mitochondrial energy production that fuels processes that repair and regenerate skin, including collagen synthesis and DNA repair. In skin cells, CoQ10 defends against UV induced damage and oxidative stress. Since CoQ10 levels decline with age, scientists have developed a novel peptide called pentapeptide-34 trifluoroacetate that enhances the skin’s own capacity to produce CoQ10. This effect was observed in vitro as skin cells exposed to pentapeptide-34 trifluoroacetate exhibited a 46% rise in endogenous CoQ10.

By replenishing depleted CoQ10 levels, pentapeptide-34 trifluoroacetate protects and energizes the skin, leading to visible anti-aging effects in humans. In a double-blind clinical study on 10 women aged 48-59, applying pentapeptide-34 trifluoroacetate twice daily around crow’s feet for 28 days reduced fine lines and wrinkles compared with a placebo.
Hexapeptide-3

Since collagen is the most abundant structural protein in the skin, it stands to bear the brunt of glycation reactions. But research shows that, with aging, other key dermal proteins like fibronectin are not immune either. Fibronectin is a glycoprotein that attaches to matrix components and controls vital functions such as cell adhesion, differentiation, and migration. Once glycated, fibronectin has difficulty binding to and interacting with matrix elements, compromising reparative processes that maintain the skin's youthful structure and appearance.

Hexapeptide-3 has been shown to mimic the beneficial effects of fibronectin to promote matrix remodeling and repair. Results from human clinical trials show that when applied topically, hexapeptide-3 improves several parameters of skin health, with one study reporting an increase in skin hydration of 100% and skin smoothness by 425% in just one hour.

Pomegranate Extract

Research has shown that pomegranate extract can regenerate the dermis by stimulating type I collagen, inhibiting protein-destroying matrix metalloproteinase-1, and preventing fibroblast apoptosis (cell death). It also counteracts the age-related thinning of the epidermis by increasing its thickness to protect against UV radiation, and in vitro studies have demonstrated that compounds in pomegranate inhibit the formation of AGEs. Together, this research shows that pomegranate extract induces favorable changes in different layers of the skin to enhance its healing capacity.

Summary

Glycation and AGEs deteriorate the skin’s vital matrix to accelerate skin aging that manifests itself as wrinkles, crepeing, and loose and dry skin. Scientists have identified topical nutrients, including Terminalia chebula fruit extract, pentapeptide-34 trifluoroacetate, blueberry extract, hexapeptide-3, and pomegranate extract that safeguard the skin against the detrimental effects of glycation as we age and promote dermal regeneration. As part of a comprehensive approach that includes a reduction in sugar-laden foods and refined carbohydrates, as well as limiting high-temperature cooking methods, these clinically proven compounds can reduce glycation and AGE formation to preserve the skin’s youthful appearance.

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

Gary Goldfaden, MD, is a clinical dermatologist and lifetime member of the American Academy of Dermatology. He is the founder of Academy Dermatology in Hollywood, FL, and Cosmesis Skin Care. Dr. Goldfaden is a member of the Life Extension® Foundation’s Medical Advisory Board. All Cosmesis products are available online.

References

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

Taken orally, Enhanced FernBlock\(^\text{®}\) with Red Orange Complex provides an additional layer of support for the body’s ultraviolet light defenses.

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

**Oral Sun Defense**

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

FernBlock\(^\text{®}\) in this oral formulation works by promoting the body’s ability to inhibit absorption of ultraviolet rays and to quench the free radicals that this type of radiation can generate.\(^6,7\) In one clinical study, Polypodium leucotomos offered significant protection against the sun’s rays, even for those taking medication that causes increased sun sensitivity.\(^8\) The study subjects experienced an almost three-fold increase in the amount of time they spent in the sun.

**Enhanced FernBlock\(^\text{®}\) Formula**

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

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

In a controlled human trial, 15 days of oral supplementation with Red Orange Complex was demonstrated to measurably support natural skin defenses against ultraviolet radiation.\(^14\)

FernBlock\(^\text{®}\) is a registered trademark of Industrial Farmaceutica Cantabria, S.A.

Note: This product is not a sunscreen.

**References**


More Comprehensive Sun Protection

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

If taken daily, just one capsule should provide everyday protection. Each vegetarian capsule of Enhanced FernBlock\(^\text{®}\) with Red Orange Complex provides:

*FernBlock\(^\text{®}\) Polypodium leucotomos extract (leaf) 240 mg
Red Orange Complex (Sicilian red oranges – Citrus sinensis var. Moro, Sanguinello, Tarocco) extract (fruit and peel) 100 mg
Vitamin C (as ascorbic acid from Red Orange Complex) 5.5 mg*

A bottle of 30 vegetarian capsules of Enhanced FernBlock\(^\text{®}\) with Red Orange Complex retails for $42. If a member buys four bottles, the price is reduced to $28.50 per bottle.
A key cause of visible skin aging is the binding of sugar molecules to proteins—known as glycation. The result is the appearance of unsightly wrinkles, creping, and loose skin.¹,²

**Advanced Anti-Glycation Peptide Serum™** supports your skin’s firmness and elasticity while slowing the visible signs of aging skin. The secret to this formulation is the combined activities of two peptides and three fruit extracts that together provide powerful anti-glycating effects and support collagen synthesis.

Clinical and lab studies on the ingredients in **Advanced Anti-Glycation Peptide Serum™** revealed that:

- **Pentapeptide-34 trifluoroacetate** reduced crow’s feet within 28 days.³

- **Hexapeptide-3** increased skin hydration 100% and smoothness 425% in just one hour.⁴

- **Terminalia chebula** reduced wrinkle depth 22% and improved skin tone.⁵

- A **blueberry extract**-containing supplement increased skin elasticity 9% after six weeks and decreased roughness 6% after 12 weeks.⁶

- **Pomegranate** stimulated collagen production and protected against UV radiation.⁷

**References**

**To order Advanced Anti-Glycation Peptide Serum™, call 1-800-544-4440 or visit www.LifeExtension.com**

**Advanced Anti-Glycation Peptide Serum™**
Item #80157 • one-ounce bottle

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Member Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$53</td>
</tr>
<tr>
<td>2 bottles</td>
<td>$46 each</td>
</tr>
</tbody>
</table>
Until recent years, testosterone replacement therapy (TRT) was on the fringes of traditional medicine. This is unfortunate because millions of men suffer from testosterone deficiency (low T), along with other hormones that grow out of balance with normal aging.

Some adverse outward effects associated with low testosterone are depression, low libido, abdominal weight gain, lack of energy, and “brain fog.” These common effects of testosterone deficit went untreated for decades. And that’s only the tip of the proverbial iceberg.

Testosterone deficiency imposes a substantial public health burden. Numerous studies show that low T is a predisposing factor for various chronic illnesses such as diabetes, cardiovascular disease, osteoporosis, and sarcopenia (muscle loss). All of these conditions—as well as others not covered here—can be improved greatly with proper hormonal management, especially in conjunction with changes in other risk factors.

A recent study determined that over a 20-year period, testosterone deficiency is projected to be involved in the development of approximately 1.1 million new cases of diabetes, 1.3 million new cases of cardiovascular disease, and over 600,000 osteoporosis-related fractures, with a cost of $190 to 525 billion in inflation-adjusted US health care expenditures.*

Some in the medical community overall have recently embraced the fact that low T is a serious problem and risk factor for men, and the ubiquitous “low T” commercials show that the pharmaceutical industry has finally realized a large consumer market exists. However, there’s still
Dr. Crisler’s extensive decades-long clinical experience working with men and adjusting their hormones to greatly enhance their physical and mental well-being. This book is not just a discussion on managing testosterone, but how to test and manage the total picture of what makes the male hormonal milieu function to its full potential.

Obviously testosterone is covered at length, including doses, types, and other essential information, but the use of other medications such as human chorionic gonadotropin (hCG), Clomid® (clo
miphene), anastrozole, and more are discussed in regards to proper usage and dosage. Dr. Crisler also covers the important topic of the hypothalamic-pituitary-gonadal axis (HPG) and whether low T is due to primary versus secondary causes. In men, the HPG is the primary feedback loop by which the body senses and produces testosterone and other essential hormones, so a discussion of the HPG is important to an overall understanding and approach to low T.

The book also covers the known external causes of low T in men, many of which men may not be aware of, such as opioids, radiation exposure, corticosteroid drugs, spironolactone, antidepressants, ketoconazole, cimetidine, statins, and chemotherapy. Many men are exposed to one or more of these causes of low T.

One of the more useful sections in the book for both practitioners and patients is the topic of testosterone delivery systems. There are now many choices, from shots, patches, gels, creams, pellets, and more, which can lead to a great deal of confusion for both medical professionals and men seeking the best options for themselves. Dr. Crisler prefers properly applied and dosed T gels, but provides details on the proper use of other methods, such as injections (both intramuscular and or subcutaneous). But he stresses the “right” choice of delivery should be determined by both lab results and subjective symptoms.

Dr. Crisler stresses strongly what virtually every medical professional tends to emphasize with decades of hands-on clinical experience treating men with low T: Successful treatment of male hormones (testosterone in particular) comes from the correct use of lab work, and a genuine respect for the subjective experiences of the men they work with. That’s the balanced approach that’s “a recipe for success” among all highly experienced medical professionals and Dr. Crisler is a shining example of that.

If one is looking for a book that covers recently published studies in depth, this is probably not the book for that purpose. But if one is looking for a “best practices” practical guide, written by a practitioner who has treated thousands of men over many decades for testosterone deficiency—then Testosterone Replacement Therapy—A Recipe For Success is an excellent choice that could save men years of searching for the right answers.

To order a copy of Testosterone Replacement Therapy—A Recipe For Success call 1-800-544-4440 or visit www.LifeExtension.com

Item #: 33878
Retail price: $19.99
Member Price: $14.99

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

Those who complain about symptoms of acid reflux (heartburn) at least once a week are not alone. A startling 10 to 30% of Americans and Europeans may suffer symptoms of gastroesophageal reflux disease (GERD).

Although GERD is commonly treated with proton-pump inhibiting drugs such as Nexium® and Prilosec®, many patients using these medications do not achieve desired relief. Patients sometimes suffer rebound gastritis, develop a Helicobacter pylori infection, or encounter other adverse effects. These acid-blocking drugs are also linked to nutritional deficiencies, bone fractures, infections, and even withdrawal symptoms.

While proton-pump inhibiting drugs do provide relief from distressing symptoms such as heartburn, regurgitation, difficulty swallowing, laryngitis, cough, and dental erosions—acid reflux itself can have a lethal effect. Those with long-standing and severe acid reflux symptoms have 43 times the risk of developing esophageal cancer!

The main reason that proton-pump inhibitors don’t provide complete relief is that GERD is not caused by excessive stomach acid—GERD occurs when the sphincter valve between the stomach and esophagus fails to close completely. When this happens, undigested food and drink, bile, digestive enzymes, and stomach acids flow into the esophagus where they inflict considerable damage.

Once you understand that GERD involves more than just stomach acid, you’ll understand why it takes more than an acid-blocking drug to achieve optimal relief.

In this article, you’ll learn about a unique approach—known as raft-forming alginate—that provides inclusive relief and protection from this chronic condition that affects so many aging individuals.
The alginate’s unique mechanism has been shown to work—often within a few seconds of dosing—to form a barrier that can be retained in the stomach for hours, providing longer-lasting relief than traditional antacids.11

When chewed, the alginate-based, raft-forming formulation expands in the stomach, where it mops up excess acid that is about to do damage to your esophagus and forms a pH-neutral barrier that reduces reflux episodes. Here’s how it works:

- One component of the mixture—alginic acid—is a dry powder derived from brown seaweed. Upon reaching the liquids and acid in the stomach, it forms a thick gel.11
- A second component of the mixture is sodium or potassium bicarbonate. On contact with gastric acids, it produces carbon dioxide bubbles that get trapped in the gel.11 The expanding bubbles cause the thick gel to form a foam that literally floats on top of the stomach contents like a raft.11

Scientists have shown that in people with acid reflux, the raft then glides up into the lower esophagus16 and creates a barrier that prevents acid and other stomach contents from pushing up into the esophagus.11

Meanwhile, the bicarbonate in the mixture reacts with the stomach acid and forms carbon dioxide—helping to directly neutralize stomach acidity. This provides an additional mechanism to further reduce the effects of heartburn.11
This entire raft-forming protective process occurs in less than a minute. Yet the raft can survive in the stomach for as long as four hours until it is finally broken up and passed out of the body.\textsuperscript{11} This explains raft-forming alginate’s remarkably rapid onset and long-duration relief when used immediately after a meal.\textsuperscript{11}

In the next section, we’ll learn about compelling studies that have demonstrated that alginate is effective at reducing the intensity of symptoms and the frequency of reflux attacks.\textsuperscript{11,17}

**Alginates Proven Effective In Human Studies**

Researchers set out to test on human patients the speed of relief provided by an alginate-based formula. They found that a single dose of a liquid form of alginate delivered a soothing effect in an average of just 65 to 66 seconds! Over 82\% of patients described the effect as an “instant” cooling effect, and a full 100\% of subjects experienced heartburn relief within just 3.3 minutes after the dose.\textsuperscript{18}

In another study, addressing duration of relief, scientists employed sophisticated pressure- and acid-monitoring equipment to show that 20 mL of alginate kept the esophagus in the nonacidic range almost three times longer than placebo and slashed food reflux incidence in half.\textsuperscript{15}

And in 2014, another comparison with a placebo was reported. This randomized, double-blind, clinical study on 110 GERD patients found that seven consecutive days of treatment with an alginate-containing formulation substantially decreased reflux and dyspeptic symptoms.\textsuperscript{19}

Impressive results were also seen when alginates were experimentally compared to antacids and placebo.
Prevent GERD-Induced Cancer Of The Esophagus

Many people think of the burning of GERD merely as pain and irritation—in other words, as a mere discomfort. But rates of esophageal cancer are rapidly increasing, and GERD is a major contributor.31,32

Esophageal cancers are most common in white men over 50, in smokers, in those who are obese, and especially in people with frequent symptoms of gastroesophageal reflux.33,34

Studies show that people with recurrent symptoms of reflux have a 7.7-fold risk of esophageal cancer, while those with long-standing, severe symptoms are at an incredible 43.5-fold risk of the disease!31

Worse, the prevalence of adenocarcinoma of the esophagus has been skyrocketing relative to squamous cell carcinoma of the esophagus35,36—which used to be the more common of the two.

The significance of this is 2-fold.

First, esophageal squamous cell carcinoma is largely attributed to cigarette smoking and excess alcohol ingestion,36-38 as well as infrequent consumption of raw fruits and vegetables 39—while esophageal adenocarcinoma is known to occur more often in people with frequent symptoms of GERD.34

Second, and equally alarming, esophageal adenocarcinoma is substantially more resistant to treatment. In 2015, a Japanese medical team published a study indicating that the adenocarcinoma component of esophageal cancer is more stubbornly resistant to chemoradiotherapy than the squamous component of esophageal cancer.40

Blocking Other GERD-Related Complications

Aside from the much greater risk of a less treatable form of esophageal cancer, prolonged exposure of the esophagus to gastric reflux can cause dramatic alterations to its function. These serious complications of GERD can include peptic stricture41,42 or Barrett’s esophagus.43,44

In people with long-term GERD, healing of ulcerations can lead to the deposit of fibrous scar tissue as well as a stricture—narrowing—of the esophagus known as peptic stricture.41 Segments of the esophagus with stricture are usually thickened, stiff, and may be shortened. The prevalence of peptic stricture among patients with GERD is about 10 to 25%.42 Treatment of severe peptic stricture involves the mechanical dilation of the narrowed region by a stent or balloon combined with acid suppression therapy.45

Barrett’s esophagus is a change in the cellular makeup of the mucous membrane of the esophagus.
A normal esophagus is lined with a layer of flattened cells—squamous epithelial cells. In Barrett’s esophagus, these cells are replaced by a layer of thicker, taller cells—columnar epithelial cells, similar to those found on the inner surface of the stomach or intestines.\textsuperscript{46} The main cause of Barrett’s esophagus is thought to be an adaptation to chronic acid exposure from reflux esophagitis.\textsuperscript{43,44}

Barrett’s esophagus can increase the risk of esophageal cancer.\textsuperscript{47} In fact, the risk of a patient with Barrett’s esophagus progressing to develop esophageal adenocarcinoma increases significantly with every year that Barrett’s persists.\textsuperscript{48,49}

The optimum way to prevent these GERD-caused esophageal complications is to block the reflux of stomach contents into the esophagus in the first place—by relying on the physical barrier that alginate erects.

\textbf{Summary}

\textbf{Proton-pump inhibiting} drugs provide relief from distressing symptoms such as heartburn, regurgitation, difficulty swallowing, laryngitis, cough, and dental erosions. Yet \textit{gastroesophageal reflux} (GERD) can have a lethal effect. Those with long-standing and severe acid reflux symptoms have 43\textsuperscript{times} the risk of developing \textit{esophageal cancer}!

The reason that proton-pump inhibitors don’t provide complete relief is that \textit{GERD} is not caused by excessive stomach acid. GERD occurs when the sphincter valve between the stomach and esophagus fails to properly close—allowing undigested food/drink,
 bile, digestive enzymes, and stomach acids to reflux into the esophagus and inflict considerable damage.

The fact that GERD involves more than just stomach acid explains why it takes more than an acid-blocking drug to achieve optimal relief.

GERD is a strong risk factor for adenocarcinoma of the esophagus, which is on the rise compared to the squamous type of this cancer—and which is substantially more treatment-resistant than squamous carcinoma of the esophagus.

**Raft-forming alginate** physically blocks the backwash of stomach contents, including burning acid, into the esophagus.

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

---

**Practical Steps To Help Prevent GERD Symptoms**

There are a number of simple actions you can take to help prevent reflux symptoms before needing the natural compounds described in this article—and without having to rely on proton pump-inhibitors. These practical, preventive steps include:

- Eating more slowly,
- Having more frequent, smaller meals,
- Avoiding fried foods,
- Limiting alcohol intake,
- Replacing sodas with health-promoting drink options,
- Lowering caffeine intake,
- Taking fewer prescriptions and over-the-counter medications,
- Watching for, and limiting, foods that aggravate symptoms,
- Quitting smoking,
- Not eating within two to three hours of bedtime,
- Maintaining a healthy weight level,
- Wearing looser-fitting clothes,
- Managing stress levels,
- Supplementing with digestive enzymes such as proteases and lipases (so that food is more quickly digested and leaves your stomach sooner),
- Taking 1-2 teaspoons of apple cider vinegar with water and raw honey to reduce symptoms,
- Taking quality probiotics to support healthy gut bacteria balance,
- Helping to protect your stomach and esophagus by taking d-limonene, an extract of the peels of citrus fruit, and
- Taking zinc-carnosine, cranberries, deglycyrrhizinated licorice, and picrorhiza for gastroprotective effects.

If you are already taking proton-pump inhibiting drugs, consider:

- Blood tests (complete blood count, comprehensive metabolic panel) to detect nutrient deficiencies,
- A high-quality calcium supplement, ideally combined with vitamins K and D3, and
- A high-quality multivitamin and mineral supplement with ample zinc dosage.
- Over-the-counter antacids can be effective against stomach-acid damage, but do not provide sufficient suppression of stomach acid, especially with prolonged use. Raft-forming alginate preparations provide effective physical barrier protection against reflux symptoms.
References


Advanced Defense Against Cellular Aging

**NAD+ Cell Regenerator**

If you are experiencing fatigue and lack of motivation, it may be due to the age-related decline in NAD+ levels and subsequent impairment of healthy cellular metabolism. NAD+ (nicotinamide adenine dinucleotide) promotes systemic youthful functions and is found in every cell in the body. In addition, NAD+ plays an essential role in regulating genes that control aging.  

**How To Boost NAD+ Levels Within Your Cells**

Newly patented nicotinamide riboside increases cellular levels of NAD+ in the body. For the first time, aging humans have an effective and affordable method to boost the critical NAD+ enzyme for refreshed vitality.

Nicotinamide riboside represents an innovative advance to combat aging that functions via unique mechanisms not found in typical dietary supplements. It has emerged as a front-line weapon in Life Extension’s ongoing war against premature aging.

The name of this new nicotinamide riboside formulation is NAD+ Cell Regenerator™.

**Multiple Benefits Of Increasing NAD+ Cellular Levels**

Nicotinamide riboside has been documented to help replenish cellular NAD+ and in the process:

- Promote sirtuin (SIRT1 and SIRT3) gene activation,
- Enhance growth and efficiency of mitochondria—supporting energy levels and physical performance,
- Favorably modulate metabolism,
- Contribute to neuronal health—supporting cognitive function during aging,
- Promote insulin activity—supporting healthy blood sugar in those within the normal range.

**References**


Life Extension® NAD+ Cell Regenerator™ contains the patented ingredient NIAGEN®, the first commercially available form of nicotinamide riboside.

The suggested daily dose of one NAD+ Cell Regenerator™ vegetarian capsule provides:

- **NIAGEN® Nicotinamide Riboside** 100 mg

**Advanced NAD+ Technology At A Low Price**

A bottle of 30 vegetarian capsules of NAD+ Cell Regenerator™ retails for $34. If a Life Extension member buys four bottles, the price is reduced to $19.50 per bottle. The suggested dose is just one small capsule daily.

NIAGEN® is a registered trademark of ChromaDex, Inc. Patents see: www.ChromaDexPatents.com. Non-GMO.
As we get older, our eyes become vulnerable to a variety of insults that can cause irritation and dry eye. With just a few drops of the proper eye lubricant, eye irritation stemming from dryness may be alleviated.

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

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

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

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

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

To order Brite Eyes III, call 1-800-544-4440 or visit www.LifeExtension.com
Immediate Relief
For **Gastric Distress**

Nearly 60% of adult Americans suffer some form of gastroesophageal upset—and find little relief in commercial remedies.

Fortunately, a unique compound known as **raft-forming alginate** produces a temporary physical barrier between the stomach and the esophagus, helping to protect the delicate esophageal tissue from harsh stomach acids.

A unique blend of ingredients in **Life Extension® Esophageal Guardian Natural Berry Flavor**, including **alginic acid** and **potassium bicarbonate**, produces both a gel and bubbles to form a safe, protective floating foam layer that sits above the contents of the stomach.

Two other ingredients in the formulation—**calcium carbonate** and **magnesium carbonate**—react with the stomach acid to neutralize it.

Clinical studies show this temporary foam barrier provides maximum support for delicate esophageal tissues.

This barrier develops in **under a minute**, yet relief lasts up to **four hours**!

The suggested dose of two **Esophageal Guardian Natural Berry Flavor** chewable tablets provides:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alginic Acid</td>
<td>1,000 mg</td>
</tr>
<tr>
<td>Calcium (as calcium carbonate)</td>
<td>80 mg</td>
</tr>
<tr>
<td>Magnesium (as magnesium carbonate)</td>
<td>40 mg</td>
</tr>
<tr>
<td>Potassium (as potassium bicarbonate)</td>
<td>40 mg</td>
</tr>
<tr>
<td>Strawberry extract (fruit)</td>
<td>416 mg</td>
</tr>
<tr>
<td>Ellagic acid (from pomegranate extract [fruit])</td>
<td>35 mg</td>
</tr>
</tbody>
</table>

**References**

**To order Esophageal Guardian Natural Berry Flavor**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://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.
Ultra Natural Prostate formula provides the latest scientifically-validated botanical extracts shown to promote healthy prostate function.

No other prostate protection formula provides such a broad array of nutrients to support the multiple factors involved in the health of the aging prostate gland. Here are the ingredients in the Ultra Natural Prostate formula:

- **Standardized lignans** convert to enterolactone in the intestine, which is then absorbed into the bloodstream to provide support for prostate cells against excess estrogen levels.1-3
- **AprèsFlex®** supports normal inhibition of 5-lipoxygenase or 5-LOX, an enzyme that is associated with undesirable cell division changes.4,5
- **Stinging and Dwarf nettle root extracts** help support prostate cells against excess estrogen levels.6,7
- **Saw Palmetto CO2 extract** helps inhibit dihydrotestosterone (DHT) activity in the prostate, helps support normal urinary flow, and helps regulate inflammatory reactions in the prostate.8,9
- **Pygeum (Pygeum africanum) extract** helps support prostaglandin production in the prostate and supports healthy urination patterns.10,11
- **Beta-sitosterol** enhances the protective effects of other botanical extracts and helps improve quality of life.12,13
- **Graminex® Flower Pollen Extract™** has been shown to help relax the smooth muscles of the urethra and help regulate inflammatory reactions.14,15
- **Boron** has been shown to slow elevation of prostate-specific antigen (PSA).16,17
- **Lycopene** supports efficient cellular communication, helps maintain healthy DNA, regulates hormonal metabolism, and promotes healthy prostate size and structure.18-20
- **Phospholipids** enhance absorption of active compounds.21,22

The suggested daily dose of two softgels of Ultra Natural Prostate provides:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saw Palmetto CO2 extract</td>
<td>320 mg</td>
</tr>
<tr>
<td>Pygeum extract</td>
<td>70 mg</td>
</tr>
<tr>
<td>Pumpkin seed oil</td>
<td>200 mg</td>
</tr>
<tr>
<td>AprèsFlex® Indian frankincense extract</td>
<td>100 mg</td>
</tr>
<tr>
<td>Proprietary Enterolactone Precursors Blend</td>
<td>20.15 mg</td>
</tr>
<tr>
<td>Lycopene from natural tomato extract</td>
<td>10 mg</td>
</tr>
<tr>
<td>Boron (as Albion® bororganic glycerine)</td>
<td>3 mg</td>
</tr>
</tbody>
</table>

A bottle of 60 softgels of Ultra Natural Prostate retails for $38. If a member buys four bottles, the price is reduced to $26.25 per bottle. If a member buys 12 bottles, the price is $24.

**References**

13. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/ncm0228911/
Massachusetts General Hospital consistently ranks as one of the world’s top medical facilities. It conducts the largest hospital-based research program in the United States. Case reports from Massachusetts General Hospital are routinely published in the prestigious New England Journal of Medicine.

Doctors at Massachusetts General Hospital observed that prescription sales of testosterone increased by 500% in the United States between the years 1993 and 2000 and continue to surge. This prompted these doctors to study the effects of testosterone and estrogen on body composition, strength, and sexual function in men.

The results of this study published in the New England Journal of Medicine confirm Life Extension’s long-standing position that restoring testosterone blood levels to youthful range reduces body fat, increases lean muscle, improves strength, and enhances sexual function.

This study also helped corroborate the adverse impact when estrogen levels are out of range in men.

What troubles us, however, is the medieval manner in which this study at Massachusetts General Hospital was designed, why the doctors overdosed study subjects on an estrogen-suppressing drug, and why the media treated certain findings as a discovery when they’re not new.

The men in this study who were overdosed on the estrogen-suppressing drug had their estrogen drop to dangerously low levels. This led the study doctors to proclaim that men need estrogen and testosterone.

We fear this study will cause physicians to avoid appropriately prescribing estrogen-suppressing drugs, which will result in tragedies as estrogen overload is a serious condition in many aging men (as is estrogen deficit).

“Authorities” are often viewed as reliable sources of expert information. This editorial exposes errors committed by mainstream doctors who attempted to study the effects of aggressive testosterone and estrogen modulation in males. These medical “authorities” appear to have made little effort in identifying clinically validated methods of optimizing hormone status in aging men.
**Aging** is accompanied by an imbalance of hormones required to sustain life.

As a man’s testosterone declines, his risk of dying greatly increases.7-9

Heart disease,10-13 osteoporosis,14,15 and muscle wasting16,17 are strongly linked to testosterone deficiency, as are chronic inflammatory18-20 and neurodegenerative disorders.21-25 Doctors are often surprised to learn that men with low testosterone show an increased incidence of prostate cancer.26-30

Long before life prematurely ends, testosterone deficit can manifest in the form of psychological disturbances such as depression,23,31,32 reduced sexual desire,33-35 and a loss of sense of well-being.32,36

**Life Extension®** has long urged male members to have their blood tested for testosterone and to restore levels to youthful ranges if they are low.

---

**Estrogen Balance Critical To Aging Men**

When **Life Extension®** started offering comprehensive blood test panels back in 1996, men did not understand why we were checking their estrogen levels. Back in those days, estrogen was viewed as a hormone of importance only to women.

We tested estrogen blood levels in men based on published data indicating that when estrogen levels are unbalanced, the risk of degenerative disease in aging men skyrockets.37-40 Of concern to us 18 years ago were reports showing that excess estrogen contributes to the development of atherosclerosis.41,42 Human clinical studies conducted more than a decade later confirmed our suspicions. Men with even slightly elevated estrogen levels doubled their risk of stroke and had far higher incidences of coronary artery disease.43-45

Our early observations also revealed that men presenting with benign prostate enlargement or prostate cancer had higher blood estrogen levels (and often low testosterone).46-48 Subsequent clinical and laboratory studies helped confirm our early observations.49,53

Insufficient estrogen, on the other hand, predisposes men to ailments such as osteoporosis and bone fracture.44,55

The fact that 99% of men today have no idea what their blood estrogen levels are helps explain the epidemic of age-related disease that is bankrupting this nation’s medical system.

---

**Higher Mortality In Men With Unbalanced Estrogen**

Conventional doctors tend to ignore hard science even after it appears in their own medical journals.

A study published in the **Journal of the American Medical Association (JAMA)** measured blood estradiol (a dominant estrogen) in 501 men with chronic heart failure. Compared to men in the balanced estrogen quintile, men in the lowest estradiol quintile were 317% more likely to die during a three-year follow-up, while men in the highest estradiol quintile were 133% more likely to die.56

The men in the balanced quintile—with the fewest deaths—had serum estradiol levels between 21.80 and 30.11 pg/mL. This is virtually the ideal range that **Life Extension®** has long recommended aging men strive for.

The men in the highest quintile—who suffered 133% increased death rates had serum estradiol levels above 37.39 pg/mL. The lowest estradiol group that suffered
a 317% increased death rate had serum estradiol levels under 12.90 pg/mL.

The dramatic increase in mortality in men with unbalanced estrogen (estradiol levels either too high or too low) is nothing short of astounding. It uncovered a gaping hole in conventional medical practice that is easily correctable.

Massachusetts General Hospital Doctors Overlooked These Studies

The study I just described revealing the dangers of estrogen imbalance was published in the May 13, 2009, issue of the *Journal of the American Medical Association*. This JAMA study corroborated previous studies validating the critical importance for aging men to maintain their estradiol blood levels in optimal ranges.

Yet doctors at Massachusetts General Hospital seemed oblivious to this JAMA study when they overdosed their study subjects on the estrogen-suppressing drug “anastrozole.” The brand name of this drug is Arimidex®.

Recall that when estradiol levels drop below 12.90 pg/mL, death rates increased 317% in heart-failure patients. Also recall that optimal estradiol blood levels are between 20-30 pg/mL.

By overdosing the study subjects on the estrogen-suppressing drug, doctors at Massachusetts General Hospital caused estradiol blood levels to plummet to a frighteningly low range of 1.0 to 2.8 pg/mL. This is 10 times lower than the optimal estradiol threshold.

When the arm of the study that was overdosed on the estrogen-suppressing drug developed adverse effects, the doctors at Massachusetts General Hospital proclaimed that men indeed require estrogen, as if this were a surprising discovery.

The media picked up on this misinterpreted data and undermined the value of estrogen-suppressing drugs when properly prescribed to men suffering estrogen overload.

How Much Of An Overdose?

There is no question that men require a certain amount of estrogen, as they do testosterone, to sustain life. Most estrogen in men is produced through the aromatization (conversion) of testosterone to estrogen in the body. This transformation occurs in response to the enzyme aromatase.

When men have high levels of aromatase, they convert too much testosterone into estrogen, which can cause them to be low on testosterone and high on estrogen. These men need a drug like anastrozole to inhibit the aromatase enzyme. The typical dose an aging man needs of anastrozole is 0.5 mg twice per week. In some cases, a man may need 1.0 mg of anastrozole twice a week.

In contrast, doctors at Massachusetts General Hospital gave men in the estrogen-suppressing group an outlandish dose of 7.0 mg per week of anastrozole. This anastrozole dose is seven times higher than what has been shown to safely reduce elevated estradiol to optimal ranges in most aging men.

We at Life Extension® have no idea why such a high dose of anastrozole would ever be given to men. Perhaps since it’s sold in 1 mg tablets, the physicians who designed the study thought the men should take one per day. This dose of 1 mg/day is what female breast cancer patients sometimes
The study conducted at Massachusetts General Hospital was performed in a way that raises medical ethical issues. The doctors took a group of healthy men aged 20-50 years with normal testosterone levels and initially gave them a powerful drug (Zoladex®) that drastically suppressed their testosterone.

We at Life Extension® have long been aware of the negative impact this kind of hormone depletion creates. Prostate cancer patients who undergo “androgen deprivation” suffer rapid bone loss, muscle atrophy, abdominal fat gain, and a host of other adverse changes that are not always reversible.

The long-term effect of testosterone deprivation was demonstrated later in this study at Massachusetts General Hospital when men whose testosterone was restored to the higher ranges did not fully recover sexual function lost by this intentional suppression of testosterone.

Instead of taking healthy men and depleting them of their life-sustaining hormones, the doctors could have chosen to study men over age 50 whose testosterone levels had already plummeted to ultra-low ranges. By studying younger men who were not testosterone deficient, the researchers lost an opportunity to directly apply the study outcomes to aging men who are most in need of testosterone restoration.

Another issue we have with this study was the continuous repeated use of DXA and CT body composition scans. While these scans enable precise body fat measurements, they emit huge amounts of radiation that could create cancers later in life.

The men in this study who were initially deprived of testosterone (and estrogen) may have taken to suppress estrogen production in their bodies. It is an egregiously excessive dose for men to take, as evidenced by the suppression of estradiol in these study subjects to virtually non-existent levels (1.0 to 2.8 pg/mL of blood).

The estrogen-suppressing drug (anastrozole) was given to every man in the estrogen-suppressing arm of the study, regardless of what the man’s estradiol blood level was. This meant many of these men were taking this potent drug when they did not even need it.

Unethical Use Of Testosterone-Suppressing Drug And Excess Radiation Exposure

How Men Naturally Make Estrogen

Women synthesize most of their estrogen in their ovaries and other reproductive tissues.

Since men lack this female anatomy, they need to produce estrogen through a process involving the enzyme aromatase that transforms testosterone into estradiol.

More than 80% of circulating estradiol in men is derived from the aromatization of testosterone. As serum testosterone levels decline, there can be a corresponding decline in serum estradiol levels.

Aging men sometimes have too much aromatase activity, which causes their testosterone to convert to excess estradiol. This results in depletion of vital testosterone while spiking estradiol to unsafe ranges.

Some men lack aromatase and suffer an estrogen deficit. Other men produce so little endogenous testosterone that there is not enough to convert into estrogen, which causes low levels of both free testosterone and estradiol.

Fortunately, no matter what the underlying cause, aging men can easily achieve optimal testosterone and estradiol serum levels using inexpensive blood tests.
suffered bone loss and endothelial dysfunction. The tragic impact would be an increased risk of fracture and vascular disease later in life.

The pathological effects of even short-term androgen deprivation are variable, unpredictable, and can result in barbaric consequences. Repeated exposure to radiation emitting CT and DXA scans is not something that young healthy men should undergo when it is not medically necessary.

This is why I allege at the beginning of this article that this study at Massachusetts General Hospital was designed in a "medieval" manner.

Low Estradiol And Testosterone Predict Mortality In Aging Men

To further substantiate the lethal impact of hormone deficiency, another study published in 2009 evaluated 3,014 men aged 69-80 years. Serum levels of testosterone and estradiol were measured during a mean follow-up of 4.5 years. This study showed that men with low testosterone had 65% greater all-cause mortality, while men with low estradiol suffered 54% more deaths.

Men low in estradiol and testosterone were almost twice as likely to die (a 96% increase in mortality) compared to men in the optimal ranges.

This large study of aged men corroborates prior published reports linking imbalances of testosterone and/or estradiol with greater incidences of degenerative disease and death.

Why the authorities at Massachusetts General Hospital suppressed estradiol to dangerously low levels (1.0 to 2.8 pg/mL) in their study subjects is beyond our comprehension. It undermined the clinical value of the data they acquired.

Critical Need For Men To Assess Hormone Status

Despite the shortcomings of the study conducted at Massachusetts General Hospital, we are gratified that the doctors suggest a benefit in measuring estradiol blood levels in men. Here is a quote from their concluding statement:

“Our finding that estrogens have a fundamental role in the regulation of body fat and sexual function, coupled with evidence from prior studies of the crucial role of estrogen in bone metabolism, indicates that estrogen deficiency is largely responsible for some of the key consequences of male hypogonadism and suggest that measuring estradiol might be helpful in assessing the risk of sexual dysfunction, bone loss, or fat accumulation in men with hypogonadism.”

While Life Extension® male members have had their estradiol blood levels checked since 1996, it’s refreshing that there is now an endorsement for more widespread use of this blood test published in the New England Journal of Medicine.

Encouraging Findings From Massachusetts General Hospital Study

In the study conducted at Massachusetts General Hospital, groups of men were first given varying doses of the testosterone-suppressing drug (Zoladex®) for 12 weeks. They were then given various doses of topical testosterone cream for 16 weeks. One group received testosterone cream only, while the other group received testosterone cream plus the estrogen-suppressing drug (anastrozole).

The doctors used some sophisticated techniques to measure parameters such as belly fat, strength, lean muscle, and sexual function. As mentioned earlier, DXA and CT scans were performed to determine lean mass as well as subcutaneous belly fat and visceral fat. Validated methods were used to determine sexual function, physical function,
vitality, strength, and overall health status of the men enrolled in the study.

In men given the proper dose of testosterone cream, significant anti-aging effects were clearly evident.

In the group of men whose blood levels of total testosterone increased to 805 ng/dL, and whose estradiol levels rose nearest the optimal ranges (20-30 pg/mL), there were significant reductions in belly fat with improvements in lean muscle, strength, and sexual function. The total testosterone blood level (805 ng/dL) in men who attained these benefits falls squarely within the optimal range that Life Extension® has advocated since 1996.

These benefits did not occur in the group of men given testosterone plus 7 mg/week of anastrozole. These men in fact suffered a decrease in lean muscle and increased belly fat. Compared to the men who achieved optimal testosterone and estradiol blood levels, the study subjects who were overdosed on anastrozole experienced decreased sexual function and strength.

Another important finding from this study was that the only group that achieved a significant decrease in body fat was men who achieved total testosterone blood levels averaging 805 ng/dL. In fact, men who received a placebo or low-dose testosterone showed a substantial increase in subcutaneous belly fat compared to those who achieved optimal serum total testosterone levels.

Life Extension® has long recommended that aging men maintain total testosterone at an optimal range of 700-900 ng/mL. This Massachusetts General Hospital study helps confirm that the greatest benefits occur when total testosterone and estradiol levels are in ranges that can easily be achieved and monitored utilizing comprehensive blood tests.

Misinterpretation Of The Massachusetts General Hospital Study

The doctors who conducted the study at Massachusetts General Hospital extolled their findings about the adverse effects seen in men prescribed the absurdly high dose of anastrozole.

They noted the increased percentage of abdominal fat as well as decreased sexual desire and erectile function seen in their estrogen-deficient study subjects. These doctors extrapolated that since abdominal fat mass is associated with diabetes and metabolic syndrome, that the marked increase in visceral fat seen in men prescribed high-dose anastrozole could portend increases in cardiovascular disease.

The problem is that estradiol was artificially suppressed down

Symptoms Of Low Testosterone

Substantial quality-of-life improvements occur in most men who properly restore their testosterone to youthful ranges. Common symptoms in men with low testosterone are:

- Sexual problems such as decreased desire, erectile dysfunction, difficulty achieving orgasm, and reduced intensity of orgasm
- Low energy and increased fatigue
- Loss of motivation
- Depressed mood
- Loss of sense of well-being and vigor

When low testosterone is corrected, men report improvements in some or all of the above symptoms. It is interesting to note that these symptoms of low testosterone are analogous to what one would expect with normal aging.
to levels not seen in the real world. Thus it is not surprising that these men with virtually no estrogen suffered unwanted side effects.

The doctors who performed this study concluded that men need sufficient levels of estrogen, as well as testosterone, to stay healthy. The media made it appear as if a major discovery had occurred, i.e. a newly found role for estrogen in males. This is not a new finding!

Scientists long ago identified men’s biological requirements for estrogen, and published studies of aging men clearly demonstrate the lethal impact when estradiol levels are too high or too low.33,69

The implication from this study’s findings was that doctors should use caution when prescribing estrogen-suppressing drugs to their male patients. Nowhere do they mention that the study subjects were grossly overdosed on anastrozole to the point that estradiol levels dropped to virtually nonexistent levels.

In today’s sound bite environment, practicing physicians will be even less likely to prescribe the proper dose of anastrozole (1 mg a week) to men whose estradiol levels are over 30 pg/mL. At Life Extension®, we sometimes see aging men with estradiol levels over 60 pg/mL. These men are in urgent need of aromatase-inhibition using the proper dose of anastrozole, yet their doctors might erroneously refuse to prescribe it because they will recall the misinterpretation of this study emanating from esteemed Massachusetts General Hospital.

On a positive note, doctors at Massachusetts General Hospital stated in their concluding remarks that some of the deleterious effects of aging may be related to changes in testosterone and estrogen levels that “may be preventable with appropriate replacement.” At least the medical authorities are recognizing that aging men do indeed require testosterone and estrogen.

Our Early Battles With Medical “Authorities”

When Life Extension® first recommended that aging men restore their testosterone to youthful levels, a firestorm of criticism erupted.

The medical establishment proclaimed that by interfering with the natural decline in testosterone secretion, men risked all kinds of terrible fates. When Life Extension® members asked their doctors for testosterone prescriptions, they ran into objections such as, “I don’t prescribe steroids,” “testosterone causes heart attacks,” and “testosterone causes prostate cancer.”

We countered these criticisms with hundreds of scientific citations showing that testosterone deficiency is an underlying cause of many age-related diseases. We also demonstrated that none of the paranoid fears about natural testosterone had ever been substantiated.

Low Testosterone Increases Prostate Cancer Risk

Fear of prostate cancer was the leading reason why aging men historically shied away from restoring their testosterone.

To dispel this concern, Life Extension® analyzed every published study in the 1990s and found there was no basis for asserting that testosterone causes prostate cancer.86-91

Our observations from the thousands of blood tests we perform each year for members corroborate this. What we found is that men with low testosterone appear to be more likely to contract prostate cancer.
One reason these hormone blood tests are not normally prescribed is their high retail cost, and the fact that insurance companies may not routinely pay for them.

As a member of the Life Extension Foundation®, you don’t have to be victimized by conventional medical ignorance, high prices, or insurance company indifference.

**Take Charge Of Your Health**

An all-inclusive blood test panel that includes total testosterone, free testosterone, estradiol, and PSA can be very expensive at commercial labs. Life Extension® members obtain these tests at a huge discount.

If your blood test result reveals imbalanced testosterone and/or estradiol, you are in a position to initiate immediate corrective action. Not only can restoring youthful hormone balance save your life, but men (and women) often experience an enhancement in their quality of life after their hormones are adjusted to optimal ranges.

A description of the Male and Female Blood Test Panels can be found on the page to the right. As you’ll readily see, these panels contain many important tests (such as 25-hydroxyvitamin D, homocysteine, C-reactive protein, and DHEA) that mainstream doctors seldom check for.

When you order these tests, a requisition form is sent listing blood drawing stations in your local area. Appointments are usually not necessary, meaning you can have your blood drawn at your convenience. Results are mailed (or emailed) to you usually within five days.
Unlike commercial blood tests that evaluate only a few disease risk factors, Life Extension’s Male and Female Blood Test Panels measure a wide range of blood markers that predispose people to age-related diseases. Just look at the huge number of parameters included in the Male and Female Blood Test Panels.

---

### MALE PANEL

**METABOLIC PROFILE**
- Glucose
- Hemoglobin A1c
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio

**LIPID PROFILE**
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

**CARDIAC MARKERS**
- C-Reactive Protein (high sensitivity)
- Homocysteine

**HORMONES**
- Free and Total Testosterone
- DHEA-S
- Estradiol (an estrogen)
- TSH (thyroid function)
- Vitamin D (25-hydroxyvitamin D)

**COMPLETE BLOOD COUNT (CBC)**
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

**CANCER MARKER**
- PSA (Prostate Specific Antigen)

---

### FEMALE PANEL

**METABOLIC PROFILE**
- Glucose
- Hemoglobin A1c
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio

**LIPID PROFILE**
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

**CARDIAC MARKERS**
- C-Reactive Protein (high sensitivity)
- Homocysteine

**HORMONES**
- Progesterone
- Estradiol (an estrogen)
- Free and Total Testosterone
- DHEA-S
- TSH (thyroid function)
- Vitamin D (25-hydroxyvitamin D)

**COMPLETE BLOOD COUNT (CBC)**
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

---

Non-member retail price: $400

Member Price: $199

To obtain these comprehensive Male and Female Panels at these low prices, call 1-800-208-3444 to order your requisition forms.

Then—at your convenience—you can visit one of the blood-drawing facilities provided by LabCorp in your area.

Blood testing services are available only in the continental United States and Anchorage, AK. Not available in Maryland. Restrictions apply for residents of MA, NY, NJ, RI, and PA.
How To Safely Restore Youthful Testosterone Balance

Since most doctors still don’t know how to properly prescribe testosterone, the following recipe makes it simple:

1. Have your blood tested for free testosterone, total testosterone, estradiol, and prostate-specific antigen (PSA), along with complete blood counts and blood chemistries. These blood tests are all included in the comprehensive Male Panel Blood Test that most members have performed annually.

2. If your blood test results reveal free testosterone below 20-25 pg/mL (or total testosterone below 700 ng/mL), find a doctor with experience in prescribing natural testosterone cream. Life Extension® maintains lists of doctors who have knowledge about male hormone restoration. To locate a doctor in your area, log on to lef.org/doctors

3. To obtain natural testosterone cream at the lowest price, ask your doctor to write a prescription for compounded natural testosterone cream. An example of how a doctor can write a prescription for a two-month supply of natural testosterone cream appears above. The exact dose you need is based on your blood test results, body mass, and later may be based on your rate of absorption and internal metabolism. Your doctor will determine what dose of testosterone cream is most appropriate for you.

4. If your estradiol level is over 30 pg/mL, your doctor may also prescribe a very low-dose aromatase-inhibiting drug such as 0.5 mg of Arimidex® twice per week. This will usually bring estradiol into the optimal range of 20-30 pg/mL.

5. Within 45 days, have your blood re-tested to verify proper testosterone dosing and rule out prostate cancer. These blood tests also enable you to guard against excess red blood cell production and excess conversion of testosterone to estradiol, as well as to ensure that liver enzymes are in normal ranges.

Life Extension® members have the advantage of requesting their blood to be drawn ahead of time so their doctor can properly prescribe them testosterone during their first visit. To order the Male Panel that includes all these blood tests and a lot more at a new lower price, call 1-800-208-3444.

Compounded testosterone cream can be obtained for as little as $40 for a 60-day supply. There are also non-prescription methods that restore free testosterone to youthful ranges in some men. To inquire about these, call a Life Extension® Health Advisor at 1-800-226-2370.


AMPK is an enzyme that serves as the body’s “master regulating switch.” It inhibits multiple degenerative factors by revitalize aging cells. Found in every cell, AMPK promotes longevity factors that have been shown to extend life span in numerous organisms. Increasing AMPK signaling “turns off” many damaging effects of aging, thus enabling cells to return to their youthful vitality.

Life Extension® scientists have compiled years of research to create AMPK Activator, a specialized dual-extract formulation that supports AMPK activation for health optimization. This natural formula supports AMPK enzymatic activities required to safely support a more youthful cellular environment.

**Importance Of AMPK**

Greater AMPK (adenosine monophosphate-activated protein kinase) activation has been shown to help target damaging factors of aging. Studies show increased AMPK activity supports reduced fat storage, new mitochondria production, and the promotion of healthy blood glucose and lipids already within normal range.

**Gynostemma Pentaphyllum**

An extract of the plant *Gynostemma pentaphyllum* was traditionally used in Asian medicine to promote longevity and scientists now know why — *G. pentaphyllum* promotes AMPK activation! In one of many studies showing a wide variety of benefits, researchers documented a 1-inch reduction in abdominal circumference in overweight individuals who took 450 mg daily of *G. pentaphyllum* extract for 12 weeks.

**Trans-Tiliroside**

Trans-tiliroside, extracted from plants such as rose hips, also boosts AMPK activation, but triggers different downstream metabolic benefits than *G. pentaphyllum*. Among its many benefits, a low equivalent dose of 56 mg daily trans-tiliroside has been shown by researchers in preclinical studies to promote healthy blood glucose levels and body weight already within normal range.

**References**


Non-GMO

ActivAMP® is a registered trademark of Gencor.

To order AMPK Activator, 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.
Over 6,000 studies have been published on resveratrol, a compound shown to favorably alter genes that help slow the aging process. In fact, resveratrol triggers some of the same beneficial youthful gene expression activated by calorie restriction.1

The all-new Optimized Resveratrol with NAD+ Cell Regenerator now contains NIAGEN® nicotinamide riboside, a novel nutrient shown to support mitochondrial health and promote longevity pathways. This new formula provides 100 mg of NIAGEN® nicotinamide riboside—an amount equivalent to almost 667 cups of milk!2

The updated Optimized Resveratrol with NAD+ Cell Regenerator also contains specific compounds in berries, such as pterostilbene and fisetin, which researchers say work in synergy with resveratrol to “turn on” the body’s own longevity genes.

Just one capsule of Optimized Resveratrol with NAD+ Cell Regenerator supplies:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans-Resveratrol</td>
<td>250 mg</td>
</tr>
<tr>
<td>NIAGEN® Nicotinamide Riboside</td>
<td>100 mg</td>
</tr>
<tr>
<td>Grape-Berry Actives</td>
<td>40 mg</td>
</tr>
<tr>
<td>Quercetin</td>
<td>60 mg</td>
</tr>
<tr>
<td>Trans-Pterostilbene (from pTeroPure®)</td>
<td>0.5 mg</td>
</tr>
<tr>
<td>Fisetin</td>
<td>10 mg</td>
</tr>
</tbody>
</table>

A bottle of 30 Optimized Resveratrol with NAD+ Cell Regenerator vegetarian capsules retails for $42 (Item # 01930). If a member buys four bottle, the price is reduced to $27 per bottle. The suggested dose is one capsule daily of this “optimized” resveratrol formula.

Non-GMO

NIAGEN® and pTeroPure® are registered trademarks of ChromaDex, Inc. Patents see: www.ChromaDexPatents.com.

To order Optimized Resveratrol with NAD+ Cell Regenerator, call 1-800-544-4440 or visit www.LifeExtension.com

References

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

Although more than 25 years have passed since Beth Daly almost died from a sudden, mysterious, debilitating illness brought on by toxic environmental chemicals, her six months of suffering while bedridden are as vivid to her today as when they first occurred.

Failed by a medical system unable to identify either the source of her condition or any effective treatment, Beth finally began her long recovery thanks to her husband Richard's fortunate discovery of activated charcoal in a health food store. Beth’s multiple symptoms included heart palpitations, night sweats, nausea, vomiting, low-grade fever, mental confusion, and hot and cold flashes that occurred within moments of each other. “I felt every part of me was trying to get rid of a poison,” she recalls, adding that at the time, neither she nor her husband knew what that poison was or how to eliminate it.

Finally, after several months of using over-the-counter activated charcoal, a seemingly miraculous antitoxin brought home by her husband, Beth’s symptoms began to disappear.

To this day, Beth continues to rely on activated charcoal whenever she feels it’s needed and at 62, describes her health as “excellent.” Richard, a long-time Life Extension® member, credits his scientific background and lifelong interest in holistic health for his timely discovery and is grateful that he and their four young children did not lose a wife and mother at such an early age.
A Healthy Beginning
And Early Life

Growing up in Indiana, Beth benefitted from her mother’s vegetable garden, which provided much of their food. “We had fresh vegetables in the summer,” she recalls, “and canned vegetables in the winter.” Beth also remembers one neighbor providing home-grown grapes and apples, while another sold them fresh eggs. “I feel like I got a very healthy start in life,” she says.

Enrolling at Indiana University, Beth met Richard, a student of chemistry, physics, and computer science. They soon married and started a business manufacturing optical products, which continues to this day.

Richard’s keen, early interest in nutrition soon began to influence Beth, and they both became devoted to organic food, supplements, and keeping abreast of the latest findings through state-of-the-art literature, including Life Extension® magazine. “Rich started taking supplements in his mid-20s,” Beth says, “and I eventually started reading articles about health and vitamins and taking them, too.”

The Health Crisis

Their life-altering incident occurred around 1989 when, as residents of Florida with four young children, Beth and Richard were taking a day trip to Orlando. Several things happened that day, but it was only much later, in retrospect, that they put together the evidence to finally identify several factors they now believe caused Beth’s prolonged illness.

The first was driving past a state truck on the side of the road that was spraying chemicals, which were shooting up in the air. Not long after, the family stopped at a restaurant. Beth’s daughter ordered a chicken sandwich, which she said didn’t taste right. Beth thought it tasted okay, and ate it. A little later, while waiting in the car for her husband, Beth smelled something bad and began to feel sick.

“By the time Rich returned to the car, I knew I was ill,” she explains. “We thought if we went to a mall and I walked around for a while, I would feel better, but I only began to feel worse and even had to lie down on a bench.” By the time they returned to their car, Beth was extremely ill, so they rushed to the nearest emergency room.

Sitting in the crowded waiting room with their children, Beth and Richard soon decided to leave because they didn’t want their children exposed to the seriously ill people surrounding them.

Beth Daly’s Supplements

- Activated Charcoal (as needed)
- AMPK Activator
- ArthroMax® Advanced with UC-II® & Après Flex®
- Astaxanthin with Phospholipids
- Blueberry Extract with Pomegranate
- Boron
- Coconut Oil
- Complete B-Complex
- CoQ10
- Grape Seed Extract
- Immune Senescence Protection Formula™
- Lactoferrin
- Mega Green Tea Extract (decaffeinated)
- Milk Thistle
- Mitochondrial Energy Optimizer with BioPQQ®
- NAD + Cell Regenerator™
- Neuro-Mag™ Magnesium L-Threonate
- No Flush Niacin
- Optimized Saffron with Satiereal®
- Probiotics
- Pycnogenol®
- Pyridoxamine
- Skin Restoring Phytoceramides with Lipowheat®
- Super Bio-Curcumin®
- Super CLA Blend with Sesame Lignans
- Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract
- Vitamins D & K with Sea-Iodine™
- Zeaxanthin
A Timely Discovery

A few months after the onset of Beth’s illness, Richard was in a health food store at lunch time and decided to walk around while waiting to be served. With his background in chemistry, when he saw a bottle of activated charcoal he thought it could draw out the toxins that he and Beth now believed were causing her symptoms. He bought the product and Beth began to take the charcoal pills—two at a time. She only took the pills every few days, since she didn’t want to deplete any essential nutrients in her body. “I slowly began to feel better,” Beth recalls, “and now I’m certain that Rich saved my life.

“Before that, I was not able to function,” she continues. “I was in bed, my meals were brought to me, and my husband had to take over care of the children and household, and even wash my hair, since my arms were aching all the time. I was pretty much unable to do anything. I felt so ill I honestly thought I was going to die.”
activated charcoal would work, he was convinced that Beth’s severe illness had been caused by environmental toxins and that the charcoal might well be able to remove these poisons from her body.

Today, Beth takes the charcoal whenever she experiences any of the symptoms she once had and says she typically feels better within a few hours. “I take charcoal when I feel symptoms coming on,” she explains, “and I take it before they become more serious.”

Over the years, Beth has also observed that her symptoms can resurface after encountering numerous substances, including pesticides, herbicides, glue, bleach, formaldehyde, cleaning products, ink, perfume, air freshener, exhaust fumes, smoke, and musty environments.

“After I saw the charcoal, I immediately thought it would help her,” says Richard. “I believe Beth’s problems occur because her liver doesn’t detoxify some chemicals and it’s nice to know that I figured out what would help her.”

**Life Today**

Many years later, the Dalys established a website, www.AnecdotalEvidence.com to tell their story and provide a forum for others who have also found natural, alternative methods to deal with various health problems, especially after traditional medicine has failed. Although Beth has never received a definitive medical diagnosis for her disorder or any scientific proof that her symptoms and prolonged illness were due to environmental toxins, the Dalys strongly believe in the importance of anecdotal evidence, which Richard calls “the precursor to scientific evidence.” In this case, at least, there are very strong reasons to believe that Beth’s condition came about due to exposure to such powerful toxins and was helped through the amazing properties of activated charcoal that removed them from her body and restored her health.

Beth’s traumatic experience set her on the road to taking better care of her health. Today, she and her husband eat about 90% organic food, which they obtain at an all-organic store and café close to their home. They also take many supplements, most of which come from Life Extension®. Beth walks two miles, three or four times a week and hopes to live long enough that technology will advance enough to enable her to live even longer.

The Dalys are both devoted to Life Extension® and say they’re grateful for the magazine, the high quality supplements, the diagnostic tests, and the research into increasing longevity. It is their greatest hope that their story will help others.

“One thing we like to do is talk to people about health and vitamins,” Beth explains, “and sometimes we run across someone who has had problems with the environment and has become ill, and we always mention activated charcoal or other supplements that we think could help.

“I feel that the real benefit for me is that vitamins can help prevent diseases that may not have symptoms until they become a major problem or are too advanced to have a good outcome.”

For more information about anecdotal evidence regarding alternative health and healing, please visit www.AnecdotalEvidence.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.
All brains decline with age, but numerous studies show that the proper nutrients can promote more youthful cognition and enhanced memory.

Only Cognitex® combines 11 essential ingredients in one cost-effective formula.

Sold separately, these components sell for a small fortune in Europe, where they are commonly prescribed for optimal brain health. The following is a sample of what you’ll find in each softgel:

- **Alpha-Glyceryl Phosphoryl Choline**: boosts levels of acetylcholine, which enables brain cells to communicate.
- **Gastrodin**: a brain shield that supports healthy levels of blood flow.
- **Grape Seed Extract**: boosts brain oxygen flow.
- **Vinpocetine**: increases circulation and brain cell conductivity.
- **Phosphatidylserine**: encourages improved concentration.
- **Pregnenolone**: a vital hormone that promotes mental energy.

Cognitex® with Pregnenolone & Brain Shield® is the most advanced neuro-enhancing formula on the market.

The retail price for 90 softgels of Cognitex® with Pregnenolone & Brain Shield® is $62. If a member buys four bottles, the price is reduced to $39.75 per bottle. If eight bottles are purchased, the price is reduced to $37.50.

Cognitex® is also available without pregnenolone at a slightly lower cost. Item # 01896

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

Non-GMO

Sharp-PS® is a registered trademark of Enzymotec Ltd. Leucoselect™ is a registered trademark of Indena S.p.A. Perluxan® is used with permission. Sensoril™ is protected under US Patents Nos. 6,153,198 and 6,713,092 and is a registered trademark of Natreon, Inc.
SWIVEL offers a $50 discount for WOMEN.

**WHY A DISCOUNT FOR WOMEN?**

SWIVEL would like to reach out to those women who share a serious interest in the science of extending life at any level.

Our detailed flyer is being sent to relevant organizations. It is our hope that one or two from each will say, “Yes, that’s me.” All women receive a $50 discount. The regular price has been reduced to just $450 - $400 for women. A 3 day pass is available at half price.

**WHAT ARE THESE LEVELS OF LIFE EXTENSION?**

1) **Squaring the Curve.** The standard path is to be born, enjoy a vigorous, healthy period and then start to deteriorate until death. Those seeking to square the curve wish to take advantage of evidence based medical and technological science to stay healthy and vigorous right up until the end. It’s called “Health Extension.” This is the **largest level**.

2) **Extend the Maximum Lifespan.** Currently, the maximum human life-span is about 120 years. Some individuals are going further and looking to evidence based science and technology to extend this period to 150 years or 200 years or..... Their goals vary. This is the **next largest level**.

3) **Indefinite Lifespan.** The smallest group seeks an indefinite life-span. Some call themselves immortalists. They also look to evidence based science to conquer all diseases of aging. Some have made arrangements to be cryo-preserved should they deanimate (legal death) before mankind conquers death.

**PROGRAM**

Our program will run from 10 am to 6 pm each day and will break for a healthy buffet lunch from 1pm - 2 pm. This is Vegas and we know that you just might be up late. Unstructured events alone do not actually lead to everyone getting to meet those with whom they might have a shared interest. Therefore, several getting acquainted exercises, introductions and breakout groups have been designed to maximize your chance of meeting the “right” date, friends and colleagues. Evenings are unstructured. We will provide announcements for those who wish to organize specific evening events. “Everyone who wants to........meet here...... at .....pm.”

**SWIVEL**

a device joining two parts so that one, or both, can pivot freely

Come look around.

**WHY A FULL 8 DAYS?**

SWIVEL’s goal is very specific. We want to reach those individuals who identify with maximizing their healthy life-span at any level and then help them to meet each other. Community support follows.

SWIVEL wants more than brief introductions. We want **enough time** for you to ask YOUR questions in a **no pressure environment**. We want YOU to have **enough time** to actually get to know each other - **enough time** to decide if you wish to spend **more time** getting to know someone. **We want to be effective.**

For those unable to take 8 days, we do offer a 3 day pass for half price.

Healthy life-span enthusiasts **generally want to find a like-minded partner.**

**WHY VEGAS?**

Easy to reach. Lodging to fit every budget.

**LODGING**

Our event site, The Orleans, is offering these attractive rates for single or double occupancy until 6-24-15. Resort Fee = $12.99. Taxes = 12%.

Sunday through Thursday ................. $41
Friday and Saturday ...................... $95
Search “Vegas lodging” for additional sites as low as $29.

To request your Registration Form, along with more detailed information, please e-mail us at: SWIVELclub@aol.com
By Astrid Derfler Kessler

Doctored:
The Disillusionment Of An American Physician

An Interview With
Sandeep Jauhar

A book by acclaimed author and physician Dr. Sandeep Jauhar reveals the realities of the modern health care system in *Doctored: The Disillusionment of an American Physician*. This memoir, a follow-up to his previous publication titled *Intern*, reveals the troubling truths about the state of today’s medicine that Dr. Jauhar encountered after accepting a position at a large teaching hospital in New York. Some of the realities he was forced to face included pressure to meet bottom lines at the expense of patient care, ordering expensive tests and exams for profit purposes only, the obvious cronyism that came into play when referring patients to specialists, and how overwhelming paperwork led to too little time to spend with patients.

Filled with anecdotes about his patients and their experiences, as well as personal stories regarding his own family, career, and choices, *Doctored* tells the story of an American physician who is not afraid to challenge the status quo in his search for a better system for everyone.
LE: In the opening chapter of your book, you write that you are struggling with your chosen profession.

SJ: I have become the kind of doctor I never thought I’d be—impatient, occasionally indifferent, and at times dismissive or paternalistic.

Most of us went into medicine for intellectual stimulation or the desire to develop relationships with patients, not to maximize income. There is a palpable sense of grieving. The job for many has become just that—a job. Something fundamental is lost when physicians start thinking of medicine as a business.

LE: Please provide an example of how generating income superseded patient care.

SJ: Because insurers had been slashing reimbursement rates, my colleagues and I were told we had to increase our relative value unit collections—or the currency of medical payment. Some physicians responded by upcoding—claiming greater complexity in patient encounters than was in fact the case—and fraud investigations at some centers were under way.

Since I wasn’t going to upcode, what the department’s directive meant for me on a practical level was that I had to see more patients. I reduced time in my schedule earmarked for new patients from 60 minutes to 40 and for established patients from 30 to 20. With administrative tasks, conferences, teaching, chart reviews, and letters and phone calls … gobbling up my day, I began to rush through visits, hurrying patients along in subtle and not so subtle ways. I stopped small talk. I interrupted histories after a few seconds to get patients to the point. I even urged patients to breathe faster when I was listening to their lungs.

LE: Do you feel you compromised your patients and yourself?

SJ: You can often do a passable job, but it’s impossible to appreciate the subtleties of patient care when you are rushing. Racing through patient encounters, you practice with an ever-present fear that you will miss something, hurt someone, and open yourself up to legal, not to mention moral, liability.

LE: What was your solution to coping with this kind of rushing and quick turnaround?

SJ: To cope with the anxiety, you start to call in “experts” for problems that perhaps you could have handled yourself if you had more time to think through the case. Apart from the perverse incentives of our fee-for-service system, a major driver of overconsultation is the uncertainty engendered by the hurried pace of contemporary medicine. Some doctors call consults just to cover their [behind].

LE: Health care costs are at an all-time high. Doesn’t this kind of care you’re describing actually end up costing more in the long run?

SJ: The Institute of Medicine estimated that wasteful health care spending—spending that doesn’t improve health outcomes—costs $750 billion in the US every year. Excessive paperwork and administrative costs account for some of this waste, but unnecessary or inefficiently delivered services, especially in hospitals, account for the lion’s share.

LE: You have numerous examples of this waste and how it backfires and typically costs more.
SJ: The more pressure put on doctors to cut costs by working harder and faster, with shorter hospital stays and quicker patient turnover, the more uncertainty doctors feel and therefore the more likely they are to utilize CT scans, MRIs, expert consultations, and so on. There is no more wasteful entity in medicine than a rushed or incompetent doctor.

LE: How does it affect a patient?
SJ: The consequences for patients are troubling. Too many consultations leads to sloppiness and disorganization. With bulky care teams, there’s diffusion of responsibility. Who’s in charge? Who is spearheading treatment? Nowhere is this more evident than in the hospital discharge process.

LE: And as you point out in the book, this leads to patients being pushed out of the hospital too quickly, only to return shortly.

SJ: Hasty readmission is an indicator of an inefficient, if not dysfunctional, health care system.

A study in the New England Journal of Medicine (2009) found that one in five Medicare patients discharged from the hospital was readmitted within a month. One in three was readmitted in three months. Readmissions are costly. In 2004, the expense to Medicare for unplanned readmission was $17.4 billion—17% of its total hospital budget.

LE: What can be done to reduce hospital readmission rates?
SJ: There are many things doctors can do... They could ensure discharged patients get timely follow-up appointments. [Half of all discharged patients readmitted in 30 days had not seen a doctor after discharge, according to a New England Journal of Medicine study.] They could do a better job of ensuring that patients obtained their medications and understood how to take them.

Doctors can also do a better job of educating patients about which symptoms and signs presage worsening of their disease—shortness of breath and leg swelling in congestive heart failure, for example—so they could quickly see their primary physician rather than go to the ER. We know patients with a clear understanding of discharge instructions are 30% less likely to return to the hospital. But research shows inconsistency at best in achieving these goals.

LE: The government wants to get more involved in curbing health care costs and has come up with incentives and fines. How do you respond to this initiative?
SJ: Congress and the Obama administration are doling out penalties on hospitals with high readmission rates [which] could forfeit up to 3% of Medicare payments in 2015. But these incentives are misdirected. Hospitals don’t hospitalize patients; doctors do. And doctors currently stand to gain little from lowering readmission. In fact, they will lose revenue.

As is so often the case in our health care system, doctors’ incentives don’t serve a broader social goal. This virtually guarantees that proposed reforms like cutting readmissions, reducing unnecessary testing, and adopting computerized medical records will fail.

LE: What about rewarding hospitals that reduce patient turnaround?
SJ: The agency that runs Medicare is considering giving bonuses to hospitals that lower readmissions below average. Though I think it’s a good idea, I believe some of this money should be shared with doctors. Current law prohibits hospitals from paying doctors for reducing hospital services even if the goal is to provide more efficient care.

In an interview with U.S. News and World Report, Dr. Jauhar summed up his feelings on his chosen career choice. “I’m not disillusioned with being a doctor,” he said. “I’m disillusioned with our medical system and the way it’s structured and how dysfunctional it is and how difficult it makes it for doctors to provide good care and do what they were trained to do.

“I would tell perspective medical students: It’s a great profession still because it’s a profession where you undeniably do good things for people and in most cases, you earn a healthy income, and you get to think about really cool things about science and about humanity, so it’s a great profession, but it’s a profession that has been adulterated by a very dysfunctional system, so go into it with your eyes open. Focus on the good things [like] conversations with patients, which really mean a lot. They don’t pay the bills, necessarily—but they’re very rewarding.”

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

Dr. Sandeep Jauhar is a cardiologist and the director of the Heart Failure Program at Long Island Jewish Medical Center. Jauhar was a PhD student in physics at Berkeley when a girlfriend’s incurable illness made him yearn for a profession where he could affect people’s lives directly. But he soon came to realize that his new chosen profession often had little regard for patients’ concerns. Dr. Jauhar’s first book, titled Intern: A Doctor’s Initiation, detailed his 80-hour workweek and the exhaustion, mental pressure, and moral conundrums he faced in his first year of medical residency. Dr. Jauhar also writes regularly for The New York Times.

To order a copy of Doctored: The Disillusionment of an American Physician by Dr. Sandeep Jauhar, call 1-800-544-4440 or visit www.LifeExtension.com

Item #33875
Retail Price: $26
Member Price: $19.50
Studies show that blueberries delay the aging process through a variety of mechanisms, including maintaining healthy DNA structure and favorably modulating genes associated with aging.\(^1\)\(^2\)

Chockfull of anthocyanins, the blueberry provides health-boosting benefits shown to:

- Enhance heart health\(^4\)
- Maintain brain function\(^4\)\(^5\)
- Sustain healthy blood sugar levels already within normal range\(^6\)
- Support smooth firm skin\(^7\)
- Maintain a healthy weight\(^8\) and stable cholesterol levels already within normal range\(^9\)

Blueberry extract is even more potent than the whole berry or juice, providing greater metabolic support throughout the entire body and without the excess sugar of raw fruit.\(^10\) Life Extension’s Blueberry Extract Capsules consists of only concentrated extracts from wild blueberries, which possess up to 10 times the nutritional capacity of cultivated berries.

### Blueberry Extract Capsules

<table>
<thead>
<tr>
<th>Item #01214 • 60 vegetarian capsules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Retail Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
</tr>
<tr>
<td>4 bottles</td>
</tr>
</tbody>
</table>

**References**


Non-GMO

AuroraBlue\(^*\) is a registered trademark of Denali BioTechnologies, Inc.

To order Blueberry Extract Capsules, 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.
For the past 35 years, the Life Extension Foundation® has stated that the most important step one can take to prevent disease cannot be found in a bottle of pills. The true cornerstone of any preventive health care program is annual blood screening. Proactive blood screening can help you greatly reduce your risk of disorders such as heart and kidney disease, stroke, liver conditions, anemia, and diabetes. Plus it’s particularly valuable in helping you prevent and treat symptoms associated with hormone imbalance, such as fatigue, memory impairment, bone loss, weight gain, and depression. Blood testing remains one of the most important things you can do for yourself and your loved ones. More than any other measure, annual blood testing holds tremendous potential to protect both yourself and your loved ones.

**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.)
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 mailed, emailed, or faxed 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.

---

### LIFE EXTENSION’S SUGGESTIONS FOR ANNUAL SCREENING (Member Prices*)

#### MEN’S ANNUAL BLOOD TESTING

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC/Chemistry Profile (description on next page) <strong>(LC122410)</strong></td>
<td><strong>$175</strong></td>
<td><strong>$83.75</strong></td>
</tr>
<tr>
<td>PSA (prostate-specific antigen)</td>
<td><strong>$68.42</strong></td>
<td><strong>$39.87</strong></td>
</tr>
<tr>
<td>Homocysteine</td>
<td><strong>$85.97</strong></td>
<td><strong>$42.48</strong></td>
</tr>
<tr>
<td>C-Reactive Protein (high-sensitivity)</td>
<td><strong>$237.86</strong></td>
<td><strong>$124.43</strong></td>
</tr>
<tr>
<td>Free Testosterone</td>
<td><strong>$38.12</strong></td>
<td><strong>$24.44</strong></td>
</tr>
<tr>
<td>Total Testosterone</td>
<td><strong>$46.87</strong></td>
<td><strong>$27.77</strong></td>
</tr>
<tr>
<td>TSH for thyroid function</td>
<td><strong>$32.67</strong></td>
<td><strong>$19.60</strong></td>
</tr>
<tr>
<td>Vitamin D (25-hydroxyvitamin D)</td>
<td><strong>$59.92</strong></td>
<td><strong>$36.55</strong></td>
</tr>
<tr>
<td>Hemoglobin A1c</td>
<td><strong>$21.52</strong></td>
<td><strong>$13.41</strong></td>
</tr>
<tr>
<td><strong>MALE LIFE EXTENSION PANEL (LC322582)</strong></td>
<td><strong>$400</strong></td>
<td><strong>$199</strong></td>
</tr>
</tbody>
</table>

#### WOMEN’S ANNUAL BLOOD TESTING

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC/Chemistry Profile (description on next page) <strong>(LC122435)</strong></td>
<td><strong>$400</strong></td>
<td><strong>$199</strong></td>
</tr>
<tr>
<td>DHEA-S</td>
<td><strong>$46.25</strong></td>
<td><strong>$27.77</strong></td>
</tr>
<tr>
<td>Estradiol</td>
<td><strong>$23.97</strong></td>
<td><strong>$14.38</strong></td>
</tr>
<tr>
<td>Homocysteine</td>
<td><strong>$58.87</strong></td>
<td><strong>$35.32</strong></td>
</tr>
<tr>
<td>C-Reactive Protein (high-sensitivity)</td>
<td><strong>$244.97</strong></td>
<td><strong>$146.98</strong></td>
</tr>
<tr>
<td>Progesterone</td>
<td><strong>$21.72</strong></td>
<td><strong>$13.03</strong></td>
</tr>
<tr>
<td>Free Testosterone</td>
<td><strong>$38.87</strong></td>
<td><strong>$23.33</strong></td>
</tr>
<tr>
<td>Total Testosterone</td>
<td><strong>$46.12</strong></td>
<td><strong>$27.77</strong></td>
</tr>
<tr>
<td>TSH for thyroid function</td>
<td><strong>$32.47</strong></td>
<td><strong>$19.60</strong></td>
</tr>
<tr>
<td>Vitamin D (25-hydroxyvitamin D)</td>
<td><strong>$59.92</strong></td>
<td><strong>$36.55</strong></td>
</tr>
<tr>
<td>Estradiol</td>
<td><strong>$23.97</strong></td>
<td><strong>$14.38</strong></td>
</tr>
<tr>
<td>Hemoglobin A1c</td>
<td><strong>$21.52</strong></td>
<td><strong>$13.41</strong></td>
</tr>
<tr>
<td><strong>FEMALE LIFE EXTENSION PANEL (LC322535)</strong></td>
<td><strong>$400</strong></td>
<td><strong>$199</strong></td>
</tr>
</tbody>
</table>

#### SUGGESTED ADDITIONS TO ANNUAL BLOOD TESTING

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$39.87</strong></td>
<td><strong>$24.42</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
<tr>
<td><strong>Advanced Oxidized LDL Panel (LC100035)</strong></td>
<td><strong>$380</strong></td>
<td><strong>$213.75</strong></td>
</tr>
</tbody>
</table>

---

* For non-member pricing call 1-800-208-3444.
** This test is packaged as a kit, requiring a finger stick performed at home.
### OTHER POPULAR PANELS

<table>
<thead>
<tr>
<th>Panel Description</th>
<th>Non-Member Retail Price</th>
<th>Member Super-Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$47</td>
<td>$26</td>
</tr>
<tr>
<td>CBC/Chemistry Profile (LC381822)</td>
<td>$186.75</td>
<td>$149.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile (LC381822)</td>
<td>$186.75</td>
<td>$149.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$166.66</td>
<td>$135.05</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$230</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$350</td>
<td>$281.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$766.66</td>
<td>$613.33</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$29.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$265.33</td>
<td>$218.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$100</td>
<td>$50.25</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$224.25</td>
<td>$186.75</td>
</tr>
<tr>
<td>CBC/Chemistry Profile</td>
<td>$332</td>
<td>$266.66</td>
</tr>
</tbody>
</table>
Amino Acids
- Arginine/L-Ornithine Capsules
- Arginine Ornithine Powder
- Branched Chain Amino Acids
- D,L-Phenylalanine Capsules
- L-Arginine Caps
- L-Carnitine
- L-Glutamine
- L-Glutamine Powder
- L-Lysine
- L-Taurine Powder
- L-Tyrosine Powder
- Super Carnosine
- Taurine

Blood Pressure Support
- Advanced Olive Leaf Vascular Support with Celery Seed Extract
- Blood Pressure Monitor Arm Cuff
- Natural BP Management

Bone Health
- Bone Restore
- Bone Restore with Vitamin K2
- Bone Strength Formula with KoAct®
- Bone-Up
- Calcium Citrate with Vitamin D
- Dr. Strum’s Intensive Bone Formula
- Strontium Caps

Books and Media
- CR Way Edition Advanced Dietary Software

Brain Health
- Acetyl-L-Carnitine
- Acetyl-L-Carnitine Arginate
- Blast
- Brain Shield® Gastrodin
- Cognitex® Basics
- Cognitex® with Brain Shield®
- Cognitex® with Pregnenolone & Brain Shield®
- Cognizin® CDP-Choline Caps
- DMAE Bitartrate (dimethylaminomethanol)
- Ginkgo Biloba Certified Extract™
- Huperzine A
- Lecithin Granules
- Migra-Eez™
- Migra-Mag with Brain Shield®
- Neuro-Mag™ Magnesium L-Threonate
- Neuro-Mag™ Magnesium L-Threonate with Calcium and Vitamin D3
- Optimized Ashwagandha Extract
- Prevagen
- PS (Phosphatidylserine) Caps
- Super Ginkgo Extract 28/7
- Vinpocetine

Cholesterol Management
- Advanced Lipid Control
- Cho-Less™
- CHOL-Support™
- Endothelial Defense™ with Full-Spectrum Pomegranate™
- Endothelial Defense™ with GliSODin®
- Full-Spectrum Pomegranate™
- Policosanol
- Pomegranate Extract Capsules
- Red Yeast Rice
- Theaflavins Standardized Extract
- Vitamin B3 Niacin Capsules

Digestion Support
- Artichoke Leaf Extract
- Bifido GI Balance
- Carnosoothe with PicroProtect™
- Digest RC™
- Effervescent Vitamin C - Magnesium Crystals
- Enhanced Super Digestive Enzymes
- Espohageal Guardian
- Extraordinary Enzymes
- Fem Dophilus
- FlorAssist®

Ginger Force
- Gutsy Chewy Digestive Tablets
- Organic Golden Flax Seed
- Pancreatin
- Regimint
- Specially-Coated Bromelain
- Theracal Probiotics
- TruFiber™
- WellBetXP PX+ plus Mulberry

Energy Management
- Adrenal Energy Formula
- Asian Energy Boost
- D-Riboce Powder
- D-Riboce Tablets
- Forskolin
- Mitochondrial Basics with BioPQQ®
- Mitochondrial Energy Optimizer with BioPQQ®
- NAD+ Cell Regenerator™
- Peak ATP® with GlycoCam®
- PQQ Caps with BioPQQ®
- Rhodiola Extract
- RibofGen™ French Oak Wood Extract

Eye Health
- Astaxanthin with Phospholipids
- Brite Eyes III
- Certified European Bilberry Extract
- Eye Pressure Support with Mirtogenol®
- MacuGuard® Ocular Support
- MacuGuard® Ocular Support with Astaxanthin

Food
- Rich Rewards® Breakfast Blend
- Rich Rewards® Breakfast Blend Natural Mocha Flavor
- Rich Rewards® Breakfast Blend Natural Vanilla Flavor
- Rich Rewards® Breakfast Blend Whole Bean Coffee
- Rich Rewards® Cruciferous Vegetable Soup
- Rich Rewards® Decaf Roast
- Stevia Extract

Glucose Management
- CinSulin® with InSea2® and Crominex® 3+ CoffeeGenic® Green Coffee Extract
- Mega Benfotiamine
- Natural Glucose Absorption Control
- Super Alpha-Lipoic Acid w/ Biotin
- Super R-Lipoic Acid
- Tru Sugar Shield™

Heart Health
- Aspirin (Enteric Coated)
- Cardio Peak™ with Standardized Hawthorn and Arjuna
- Fibrinogen Resist™ with Nattokinase
- FlorAssist® Heart Health Probiotic
- Mega EPA/DHA
- Mega GLA with Sesame Lignans
- Optimized Carnitine with Glicocarn®
- PROVINAL® Purified Omega-7
- Super Omega with Krill, Astaxanthin & Olive Fruit Extract
- Super Omega-3 EPA/DHA with Sesame Lignans & Olive Fruit Extract
- Super Ubiquinol CoQ10
- Super Ubiquinol CoQ10 with BioPQQ®
- Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™
- Super-Absorbable CoQ10 Ubiquinone with d-Limonene

Hormone Balance
- DHEA (Dehydroepiandrosterone)
- DHEA Complete
- Inner Power
- Pregnenolone
- Triple Action Cruciferous Vegetable Extract with Resveratrol
- Triple Action Cruciferous Vegetable Extract

Immune Support
- AHCC
- Echinacea Extract
- Enhanced Zinc Lozenges
- 26 Hyperimmune Egg
- Immune Modulator with Tinofend®
- Immune Protect with PARACTIN®
- Immune Senescence Protection Formula™
- Kyolic® Garlic Formula 102
- Kyolic® Garlic Formula 105
- Kyolic® Reserve
- Lactoferrin (apolactoferrin) Caps
- NK Cell Activator™
- Optimized Garlic
- Optimized Quercetin
- Peony Immune
- ProBoost Thymic Protein A
- Reishi Extract Mushroom Complex
- Standardized Cistanche
- Zinc Lozenges

Inflammation Management
- 5-LOX Inhibitor with AprèsFlex®
- Advanced Bio-Curcumin® with Ginger & Turmerones
- Black Cumin Seed Oil with Bio-Curcumin®
- Black Cumin Seed Oil
- Boswellia
- Cytokine Suppress™ with EGCG
- Nervia®
- Serraflozyme
- Super Bio-Curcumin®
- Zyflamend® Whole Body

Joint Support
- Arthro-Immune Joint Support
- Arthromax® Advanced with UC-II® & AprèsFlex®
- ArthroMax® with Theaflavins & AprèsFlex®
- Bio-Collagen with Patented UC-II®
- Fast-Acting Joint Formula
- Glucosamine/Oldroadrin Capsules
- Krill Healthy Joint Formula
- MSM (Methylsulfonylmethane)

Kidney & Bladder Support
- Cran-max® Cranberry Whole Fruit Concentrate
- Optimized Cran-Max with Ellirose™
- Water-Soluble Pumpkin Seed Extract

Liver Health & Detoxification
- Anti-Alcohol Antioxidants with HepatoProtection Complex
- Calcium D-Glucarate
- Chlorella
- Chlorophyllin
- European Milk Thistle
- Glutathione, Cysteine & C
- HepatoPro
- Liver Efficiency Formula
- Mega L-Glutathione Capsules
- N-Acetyl-L-Cysteine
- PectaSol-C®
- Silmarin
- SODzyme® with GliSODin® & Wolfberry

Longevity & Wellness
- AMPK Activator
- AppleWise Polyphenol Extract
- Berry Complete
- Blueberry Extract
- Blueberry Extract with Pomegranate
- CR Mimetic Longevity Formula
- DNA Protection Formula
**Men's Health**

- Mega Lycopene Extract
- PalmettoGuard® Saw Palmetto with Beta-Sitosterol
- Pomi-T®
- Prenacol Natural Sex for Men®
- Super MiraForte with Standardized Lignans
- Triple Strength ProstaPollen™
- Whole Grape Extract

**Minerals**

- Boron
- Chromium Ultra
- Copper
- Iron Protein Plus
- Magnesium (Citrato)
- Magnesium Caps
- Only Trace Minerals
- Optimized Chromium with Crominex® 3+
- Sea-Iodine™
- Se-Methyl L-Selemencysteine
- Super Selenium Complex
- Vanadyl Sulfate
- High Potency Zinc

**Miscellaneous**

- Advanced Iodine Complete
- Potassium Iodide
- Solarshield Sunglasses

**Mood & Stress Management**

- 5 HTP
- L-Theanine
- Natural Stress Relief
- Pharma GABA
- SAMe (S-Adenosyl-Methionine)

**Multivitamins**

- Children's Formula Life Extension Mix™
- Comprehensive Nutrient Packs ADVANCED
- Life Extension Mix™ Capsules without Copper
- Life Extension Mix™ Capsules
- Life Extension Mix™ Powder without Copper
- Life Extension Mix™ Powder with Extra Niacin without Copper
- Life Extension Mix™ Tablets with Extra Niacin without Copper
- Life Extension Mix™ Tablets with Extra Niacin
- Life Extension Mix™ Tablets without Copper
- Life Extension Mix™ Tablets
- One-Per-Day Tablets
- Two-Per-Day Capsules
- Two-Per-Day Tablets

**Personal Care**

- Advanced Oral Hygiene
- Anti-Aging Rejuvenating Scalp Serum
- Biosil
- Dr. Proctor's Advanced Hair Formula
- Dr. Proctor's Shampoo
- European Leg Solution featuring Certified Diosmin 95
- Face Master Platinum
- Hair Supress Formula
- Life Extension Toothpaste
- Sinus Cleanser

**Pet Care**

- Cat Mix
- Dog Mix

**Skin Care**

- Advanced Lightening Cream
- Advanced Peptide Hand Therapy
- Advanced Triple Peptide Serum
- Advanced Under Eye Serum with Stem Cells
- Amber Self MicroDermAbrasion
- Anti-Aging Mask
- Anti-Aging Rejuvenating Face Cream
- Anti-Glycation Serum with Blueberry & Pomegranate Extracts
- Antioxidant Facial Mist
- Anti-Oxidant Rejuvenating Foot Cream
- Anti-Oxidant Rejuvenating Foot Scrub
- Anti-Oxidant Rejuvenating Hand Cream
- Anti-Oxidant Rejuvenating Hand Scrub
- Anti-Redness & Adult Blemish Lotion
- Bioflavonoid Cream
- Broccoli Sprout Cream
- Collagen Boosting Peptide Serum
- Corrective Clearing Mask
- DNA Repair Cream
- Dual-Action MicroDermAbrasion
- Enhanced FernBlock® with Red Orange Complex
- Essential Plant Lids Reparative Serum
- Fine Line-Less Healing Formula
- Healing Mask
- Healing Vitamin K Cream
- Hyaluronic Facial Moisturizer
- Hyaluronic Oil-Free Facial Moisturizer
- Hydrating Anti-Oxidant Facial Mist
- Hydroderm
- Lifting & Tightening Complex
- Lycopene Cream
- Melatonin Cream
- Mild Facial Cleanser
- Neck Rejuvenating Anti-Oxidant Cream
- Pigment Correcting Cream
- Rejuvenating Serum
- Rejuvenex® Body Lotion
- Rejuvenex® Factor Firming Serum
- Renewing Eye Cream
- Resveratrol Anti-Oxidant Serum
- Skin Lightening Serum
- Skin Restoring Phytocearmides with Lipowheat®
- Skin Stem Cell Serum
- Stem Cell Cream with Alpine Rose
- Tightening & Firming Neck Cream
- Ultra Lip Plumper
- Ultra RejuveNich®
- Ultra RejuveNight®
- Ultra Wrinkle Reliever
- Under Eye Refining Serum
- Under Eye Rescue Cream
- Vitamin C Serum
- Vitamin D Lotion
- Vitamin E-ssential Cream
- Youth Serum

**Sleep**

- Bioactive Milk Peptides
- Enhanced Natural Sleep® with Melatonin
- Enhanced Natural Sleep® without Melatonin
- Fast-Acting Liquid Melatonin
- Glycine
- L-Tryptophan
- Melatonin
- Optimized Tryptophan Plus

**Sports Performance**

- Creatine Capsules
- Creatine Whey Glutamine Powder (Vanilla Flavor)

**Vitamins**

- Ascorbyl Palmitate
- Benfotiamine with Thiamine
- Beta-Carotene
- Biotin
- Buffered Vitamin C Powder
- Complete B-Complex
- Daily C+
- Fast-C® with Dihydroquercetin
- Folate & Vitamin B12
- Gamma E Tocopherol with Sesame Lignans
- Gamma E Tocopherol/Tocotrienols
- High Potency Optimized Folate
- Inositol Caps
- Liquid Emulsified Vitamin D3
- Liquid Vitamin D3
- Low Dose Vitamin K2
- Methylcobalamin
- MK-7
- Natural Vitamin E
- No Flush Niacin
- Optimized Folate (L-Methylfolate)
- Pantothenic Acid (Vitamin B-5)
- Pyridoxal 5'-Phosphate Caps
- Super Absorbable Tocotrienols
- Super Ascorbate C Capsules
- Super Ascorbate C Powder
- Super K with Advanced K2 Complex
- Tocotrienols with Sesame Lignans
- Vitamin B12
- Vitamin B6
- Vitamin C with Dihydroquercetin
- Vitamin D3 with Sea-Iodine™
- Vitamin D3
- Vitamins D and K with Sea-Iodine™

**Weight Management**

- 7-Keto® DHEA Metabolite
- Advanced Anti-Adipocyte Formula
- Advanced Natural Appetite Suppress
- CalReduce Selective Fat Binder
- DHEA Complete
- Fucixanthin-Slim™
- Garcinia HCA
- HCA Active
- Integra-Lean™
- Mediterranean Trim with Sinetrol™ XPur
- Optimized Irvingia with Phase 3™ Calorie Control Complex
- Optimized Saffron with Satiereal®
- Super Citrimax®
- Super CLA Blend with Guaran and Sesame Lignans
- Ultra Lean Control®
- Weight Management Formula

**Women's Health**

- Advanced Natural Sex for Women® 50+
- Breast Health Formula
- Calorie Control Weight Management Formula
- Femmescence MacaPause
- Natural Estrogen without Soy Isoflavones
- Natural Estrogen
- Natural Female Support
- ProgestaCare® for Women
- Super-Absorbable Soy Isoflavones
- Ultra Soy Extract
### Buyers Club Order Form

**To order call: 1.954.766.8433 or 1.800.544.4440**

<table>
<thead>
<tr>
<th>No.</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01206</td>
<td>BERRY COMPLETE - 30 veg. caps</td>
<td>$21.00</td>
<td>$15.75</td>
<td></td>
</tr>
<tr>
<td>01496</td>
<td>BERRY COMPLETE w/Acai (ENHANCED) - 60 veg. caps</td>
<td>29.00</td>
<td>21.75</td>
<td></td>
</tr>
<tr>
<td>00664</td>
<td>BETA-CAROTENE - 25,000 IU, 100 softgels</td>
<td>11.25</td>
<td>8.44</td>
<td></td>
</tr>
<tr>
<td>01622</td>
<td>BIFIDO GI BALANCE - 60 veg. caps</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
</tr>
<tr>
<td>01073</td>
<td>BILBERRY EXTRACT - 100 mg, 100 veg. caps</td>
<td>42.00</td>
<td>31.50</td>
<td></td>
</tr>
<tr>
<td>01512</td>
<td>BIDACTIVE MILK PEPTIDES - 30 caps</td>
<td>18.00</td>
<td>13.50</td>
<td></td>
</tr>
<tr>
<td>01631</td>
<td>BIOC-LAGEN w/PATENTED UC-II® - 40 mg, 60 small caps</td>
<td>36.00</td>
<td>27.00</td>
<td></td>
</tr>
<tr>
<td>01006</td>
<td>BIOSIL® - 5 mg, 30 veg. caps</td>
<td>18.96</td>
<td>15.16</td>
<td></td>
</tr>
<tr>
<td>01007</td>
<td>BIOSIL® - 1 fl oz</td>
<td>31.99</td>
<td>25.59</td>
<td></td>
</tr>
<tr>
<td>00102</td>
<td>BIOTIN - 600 mcg, 100 caps</td>
<td>7.50</td>
<td>5.63</td>
<td></td>
</tr>
<tr>
<td>01709</td>
<td>BLACK CUMIN SEED OIL - 60 softgels</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
</tr>
<tr>
<td>01710</td>
<td>BLACK CUMIN SEED OIL w/BIO-CURCUMIN® - 60 softgels</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
</tr>
<tr>
<td>01008</td>
<td>BLAST™ - 600 grams of powder</td>
<td>26.95</td>
<td>20.21</td>
<td></td>
</tr>
<tr>
<td>70000</td>
<td>BLOOD PRESSURE MONITOR w/AC ADAPTOR - MED CUFF</td>
<td>79.99</td>
<td>49.99</td>
<td></td>
</tr>
<tr>
<td>70004</td>
<td>BLOOD PRESSURE MONITOR - Digital wrist (cuff)</td>
<td>69.95</td>
<td>52.46</td>
<td></td>
</tr>
<tr>
<td>01214</td>
<td>BLUEBERRY EXTRACT - 60 veg. caps</td>
<td>22.50</td>
<td>16.88</td>
<td></td>
</tr>
<tr>
<td>01438</td>
<td>BLUEBERRY EXTRACT w/POMEGRANATE - 60 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
</tr>
<tr>
<td>01506</td>
<td>BONE FORMULA (OIL, STRUM’S INTENSIVE) - 300 caps</td>
<td>56.00</td>
<td>42.00</td>
<td></td>
</tr>
<tr>
<td>01726</td>
<td>BONE RESTORE - 120 caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
</tr>
<tr>
<td>01727</td>
<td>BONE RESTORE w/VITAMIN K2 - 120 caps</td>
<td>24.00</td>
<td>18.00</td>
<td></td>
</tr>
<tr>
<td>01725</td>
<td>BONE STRENGTH FORMULA w/KOACT™ - 120 caps</td>
<td>45.00</td>
<td>33.75</td>
<td></td>
</tr>
<tr>
<td>00031</td>
<td>BONE-UP® - 240 caps</td>
<td>28.95</td>
<td>21.71</td>
<td></td>
</tr>
<tr>
<td>01861</td>
<td>BORON - 3 mg, 100 veg. caps</td>
<td>3.95</td>
<td>2.96</td>
<td></td>
</tr>
<tr>
<td>00202</td>
<td>BOSWELLA - 100 caps</td>
<td>38.00</td>
<td>28.50</td>
<td></td>
</tr>
<tr>
<td>01802</td>
<td>BRAIN SHIELD® - GASTRODIN - 60 veg. caps</td>
<td>33.00</td>
<td>24.75</td>
<td></td>
</tr>
<tr>
<td>01253</td>
<td>BRANCHED CHAIN AMINO ACIDS - 90 veg. caps</td>
<td>19.50</td>
<td>14.63</td>
<td></td>
</tr>
<tr>
<td>01699</td>
<td>BREAST HEALTH FORMULA - 60 caps</td>
<td>34.00</td>
<td>25.50</td>
<td></td>
</tr>
<tr>
<td>00893</td>
<td>BRITE EYES III - 2 vials, 5 ml each</td>
<td>34.00</td>
<td>25.50</td>
<td></td>
</tr>
<tr>
<td>01203</td>
<td>BROMELAIN (SPECIALY-COAT) - 500 mg, 60 enteric coated tablets</td>
<td>21.00</td>
<td>15.75</td>
<td></td>
</tr>
</tbody>
</table>

**JUNE 2015**

**SUB-TOTAL OF COLUMN 1**

**SUB-TOTAL OF COLUMN 2**

**LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS**
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01835</td>
<td>COMPLETE B-COMPLEX - 60 veg. caps</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01998</td>
<td>COMPREHENSIVE NUTRIENT PACKS ADVANCED - 30 packs</td>
<td>90.00</td>
<td>67.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 boxes, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00119</td>
<td>COPPER CAPSULES - 2 mg. 100 caps</td>
<td>9.91</td>
<td>7.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00949</td>
<td>COQ10 w/LIMONENE (SUPER-ABSORBABLE) - 50 mg. 60 softgels</td>
<td>25.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00950</td>
<td>COQ10 w/LIMONENE (SUPER-ABSORBABLE) - 100 mg. 100 softgels</td>
<td>66.00</td>
<td>49.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01226</td>
<td>COQ10 (SUPER-UBIQUINOL) - 100 mg. 60 softgels</td>
<td>56.00</td>
<td>42.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01733</td>
<td>COQ10 w/BIOQOD (SUPER-UBIQUINOL) - 100 mg. 30 softgels</td>
<td>54.00</td>
<td>40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01426</td>
<td>COQ10 w/THI MITOCHONDRIAL SUPPORT™ (SUPER-UBIQUINOL) - 100 mg. 30 softgels</td>
<td>62.00</td>
<td>46.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01425</td>
<td>COQ10 w/THI MITOCHONDRIAL SUPPORT™ (SUPER-UBIQUINOL) - 50 mg. 100 softgels</td>
<td>58.00</td>
<td>43.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01427</td>
<td>COQ10 w/THI MITOCHONDRIAL SUPPORT™ (SUPER-UBIQUINOL) - 50 mg. 30 softgels</td>
<td>20.00</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 4 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00154</td>
<td>COSMESIS ADVANCED LIGHTENING CREAM - 1 oz jar</td>
<td>65.00</td>
<td>48.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00155</td>
<td>COSMESIS ADVANCED PEPTIDE HAND THERAPY - 4 oz bottle</td>
<td>46.00</td>
<td>34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00152</td>
<td>COSMESIS ADVANCED TRIPLE PEPTIDE SERUM - 1 oz bottle</td>
<td>65.00</td>
<td>48.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00140</td>
<td>COSMESIS ADVANCED UNDER EYE SERUM with STEM CELLS - 30 caps</td>
<td>49.00</td>
<td>36.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00139</td>
<td>COSMESIS AMBER SELF MICRODERMAPRASESION - 2 oz</td>
<td>49.00</td>
<td>36.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 jars, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00118</td>
<td>COSMESIS ANTI-AGING MASK - 2 oz</td>
<td>72.00</td>
<td>54.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00151</td>
<td>COSMESIS ANTI-AGING REJUVENATING FACE CREAM - 2 oz jar</td>
<td>65.00</td>
<td>48.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 jars, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00153</td>
<td>COSMESIS ANTI-AGING REJUVENATING SCALP SERUM - 2 oz bottle</td>
<td>46.00</td>
<td>34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00157</td>
<td>COSMESIS ANTI-GLYCATION PEPTIDE SERUM - 1 oz</td>
<td>53.00</td>
<td>39.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00134</td>
<td>COSMESIS ANTI-GLYCATION SERUM - 1 oz with BLUEBERRY &amp; POMEGRANATE EXTRACTS</td>
<td>33.00</td>
<td>24.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00133</td>
<td>COSMESIS ANTI-Antioxidant FACIAL MIST - 2 oz</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 bottles, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00127</td>
<td>COSMESIS ANTI-Antioxidant REJUVENATING FOOT CREAM - 2 oz</td>
<td>45.00</td>
<td>33.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buy 2 jars, price each</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 3**

**SUB-TOTAL OF COLUMN 4**

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

JUNE 2015
### Buyers Club Order Form

**JUNE 2015**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty</th>
<th>Each</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C CONTINUED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80128</td>
<td>COSMESIS ANTI-OXIDANT REJUVENATING FOOT SCRUB - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80117</td>
<td>COSMESIS ANTI-OXIDANT REJUVENATING HAND CREAM - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80121</td>
<td>COSMESIS ANTI-OXIDANT REJUVENATING HAND SCRUB - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80105</td>
<td>COSMESIS ANTI-REDNESS &amp; ADULT BLEMISH LOTION - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80147</td>
<td>COSMESIS BIOFLAVONOIDS CREAM</td>
<td>Buy 2 jars, price each</td>
<td>$65.56</td>
<td>131.12</td>
</tr>
<tr>
<td>80144</td>
<td>COSMESIS BROCCOLI SPROUT CREAM</td>
<td>Buy 2 jars, price each</td>
<td>$39.00</td>
<td>78.00</td>
</tr>
<tr>
<td>80156</td>
<td>COSMESIS COLLAGEN BOOSTING PEPTIDE SERUM - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80120</td>
<td>COSMESIS CORRECTIVE CLEARING MASK - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80141</td>
<td>COSMESIS DNA REPAIR CREAM - 1 oz jar</td>
<td>Buy 2 jars, price each</td>
<td>$42.00</td>
<td>84.00</td>
</tr>
<tr>
<td>80108</td>
<td>COSMESIS ESSENTIAL PLANT LIPIDS REPARATIVE SERUM - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80123</td>
<td>COSMESIS FACE REJUVENATING ANTI-OXIDANT CREAM - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80107</td>
<td>COSMESIS FINE LINE-LESS - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80131</td>
<td>COSMESIS HAIR SUPPRESS FORMULA - 4 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80137</td>
<td>COSMESIS HEALING FORMULA ALL-IN-ONE CREAM - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80115</td>
<td>COSMESIS HEALING MASK - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80102</td>
<td>COSMESIS HEALING VITAMIN K CREAM - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80109</td>
<td>COSMESIS HYALURONIC FACIAL MOISTURIZER - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80110</td>
<td>COSMESIS HYALURONIC OIL-FREE FACIAL MOISTURIZER - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80138</td>
<td>COSMESIS HYDRATING ANTI-OXIDANT FACE MIST - 4 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80103</td>
<td>COSMESIS LIFTING &amp; TIGHTENING COMPLEX - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80146</td>
<td>COSMESIS LYCOPENE CREAM - 1 oz jar</td>
<td>Buy 2 jars, price each</td>
<td>$25.40</td>
<td>50.80</td>
</tr>
<tr>
<td>80135</td>
<td>COSMESIS MELATONIN CREAM - 1 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80114</td>
<td>COSMESIS MILD FACIAL CLEANSER - 8 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$51.92</td>
<td>103.84</td>
</tr>
<tr>
<td>80122</td>
<td>COSMESIS NECK REJUVENATING ANTI-OXIDANT CREAM - 2 oz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80111</td>
<td>COSMESIS PIGMENT CORRECTING CREAM - 1/2 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$65.12</td>
<td>130.24</td>
</tr>
<tr>
<td>80106</td>
<td>COSMESIS REJUVENATING SERUM - 1 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$65.56</td>
<td>131.12</td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 5**  
**SUB-TOTAL OF COLUMN 6**

**To order call: 1.954.766.8433 or 1.800.544.4440**

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty</th>
<th>Each</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>80150</td>
<td>COSMESIS RENEWING EYE CREAM - 1/2 oz</td>
<td>Buy 2 jars, price each</td>
<td>$65.00</td>
<td>130.00</td>
</tr>
<tr>
<td>80142</td>
<td>COSMESIS RESVERATROL ANTI-OXIDANT SERUM - 1 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$46.00</td>
<td>92.00</td>
</tr>
<tr>
<td>80112</td>
<td>COSMESIS SKIN LIGHTENING SERUM - 1/2 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$85.00</td>
<td>170.00</td>
</tr>
<tr>
<td>80130</td>
<td>COSMESIS SKIN STEM CELL SERUM - 1 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$74.00</td>
<td>148.00</td>
</tr>
<tr>
<td>80143</td>
<td>COSMESIS STEM CELL CREAM W/ ALPINE ROSE - 1 oz jar</td>
<td>Buy 2 jars, price each</td>
<td>$66.00</td>
<td>132.00</td>
</tr>
<tr>
<td>80148</td>
<td>COSMESIS TIGHTENING &amp; FIRMING NECK CREAM - 2 oz jar</td>
<td>Buy 2 jars, price each</td>
<td>$39.00</td>
<td>78.00</td>
</tr>
<tr>
<td>80116</td>
<td>COSMESIS ULTRA LIP PLUMPING - 1/3 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$64.00</td>
<td>128.00</td>
</tr>
<tr>
<td>80101</td>
<td>COSMESIS ULTRA WRINKLE RELAXER - 1 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$79.76</td>
<td>159.52</td>
</tr>
<tr>
<td>80113</td>
<td>COSMESIS UNDER EYE REFINING SERUM - 1/2 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$74.50</td>
<td>149.00</td>
</tr>
<tr>
<td>80104</td>
<td>COSMESIS UNDER EYE RESCUE CREAM - 1/2 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$74.50</td>
<td>149.00</td>
</tr>
<tr>
<td>80129</td>
<td>COSMESIS VITAMIN C SERUM - 1 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$85.00</td>
<td>170.00</td>
</tr>
<tr>
<td>80136</td>
<td>COSMESIS VITAMIN D LOTION - 4 oz</td>
<td>Buy 2 bottles, price each</td>
<td>$36.00</td>
<td>72.00</td>
</tr>
<tr>
<td>80145</td>
<td>COSMESIS VITAMIN E ESSENTIAL CREAM</td>
<td>Buy 2 jars, price each</td>
<td>$59.00</td>
<td>118.00</td>
</tr>
<tr>
<td>80149</td>
<td>COSMESIS YOUTH SERUM</td>
<td>Buy 2 bottles, price each</td>
<td>$65.00</td>
<td>130.00</td>
</tr>
<tr>
<td>80082</td>
<td>CRAN-MAX™ - 500 mg, 60 veg. caps</td>
<td>Buy 4 bottles, price each</td>
<td>$17.50</td>
<td>35.00</td>
</tr>
<tr>
<td>01424</td>
<td>CRAN-MAX™ w/ ELLIROSE™ (OPTIMIZED)</td>
<td>Buy 4 bottles, price each</td>
<td>$18.00</td>
<td>36.00</td>
</tr>
<tr>
<td>01529</td>
<td>CREATINE CAPSULES</td>
<td>Buy 4 bottles, price each</td>
<td>$9.25</td>
<td>18.50</td>
</tr>
<tr>
<td>01746</td>
<td>CREATINE WHEY GLUTAMINE POWDER</td>
<td>Buy 4 jars, price each</td>
<td>$30.00</td>
<td>60.00</td>
</tr>
<tr>
<td>01429</td>
<td>CR MIMETIC LONGEVERTY FORMULA</td>
<td>Buy 4 bottles, price each</td>
<td>$39.00</td>
<td>78.00</td>
</tr>
<tr>
<td>036840</td>
<td>CRWAY GREAT GLUCOSE CONTROL CD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CRWAY CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00407</td>
<td>CURCUMIN®</td>
<td>Buy 2 bottles, price each</td>
<td>$30.00</td>
<td>60.00</td>
</tr>
<tr>
<td>01808</td>
<td>CURCUMIN® w/ GINGER &amp; TURMERIC (ADVANCED BIO) - 30 softgels</td>
<td>Buy 4 bottles, price each</td>
<td>$27.00</td>
<td>54.00</td>
</tr>
<tr>
<td>01804</td>
<td>CYTOKINE SUPPRESS™ w/EGCG</td>
<td>Buy 30 veg. caps</td>
<td>$30.00</td>
<td>90.00</td>
</tr>
<tr>
<td>01912</td>
<td>DAILY C+ CITRUS FLAVOR</td>
<td>Buy 30 stick packs</td>
<td>$21.00</td>
<td>63.00</td>
</tr>
<tr>
<td>00658</td>
<td>7-KETO® DHEA METABOLITE</td>
<td>Buy 25 mg, 100 caps</td>
<td>$28.00</td>
<td>56.00</td>
</tr>
<tr>
<td>01479</td>
<td>7-KETO® DHEA METABOLITE</td>
<td>Buy 2 oz, price each</td>
<td>$24.00</td>
<td>48.00</td>
</tr>
</tbody>
</table>

**D**
### Buyers Club Order Form

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01640</td>
<td>DHA (VEGETARIAN SOURCED) – 30 veg. softgels</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00607</td>
<td>DHEA - 25 mg, 100 tablets (dissolve in mouth)</td>
<td>14.00</td>
<td>10.50</td>
<td>4</td>
<td>54.00</td>
</tr>
<tr>
<td>01478</td>
<td>DHEA COMPLETE - 60 veg. caps</td>
<td>48.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00335</td>
<td>DHEA - 25 mg, 100 caps</td>
<td>18.00</td>
<td>13.50</td>
<td>4</td>
<td>62.00</td>
</tr>
<tr>
<td>00454</td>
<td>DHEA - 15 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>4</td>
<td>54.00</td>
</tr>
<tr>
<td>00882</td>
<td>DHEA - 50 mg, 60 caps</td>
<td>19.00</td>
<td>14.25</td>
<td>4</td>
<td>77.00</td>
</tr>
<tr>
<td>01689</td>
<td>DHEA - 100 mg, 60 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td>4</td>
<td>96.00</td>
</tr>
<tr>
<td>01040</td>
<td>DHA (VEGETARIAN SOURCED) - 30 veg. softgels</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01518</td>
<td>ECHINACEA EXTRACT - 250 mg, 60 veg. caps</td>
<td>$14.35</td>
<td>$10.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01498</td>
<td>ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ - 60 softgels</td>
<td>58.00</td>
<td>42.00</td>
<td>4</td>
<td>224.00</td>
</tr>
<tr>
<td>00997</td>
<td>ENDOTHELIAL DEFENSE™ w/GLUCOSIDE™ - 60 veg. caps</td>
<td>54.00</td>
<td>40.50</td>
<td>4</td>
<td>182.00</td>
</tr>
<tr>
<td>00625</td>
<td>EPA/DHA (MEGA) - 120 softgels</td>
<td>19.95</td>
<td>14.96</td>
<td>4</td>
<td>79.80</td>
</tr>
<tr>
<td>01737</td>
<td>ESOPHAGEAL GUARDIAN (Berry flavor) - 60 chewable tablets</td>
<td>36.00</td>
<td>27.00</td>
<td>4</td>
<td>144.00</td>
</tr>
<tr>
<td>01042</td>
<td>EUROPEAN LEG SOLUTION DIOSMIN 95 - 600 mg, 30 veg. tabs</td>
<td>20.00</td>
<td>15.00</td>
<td>4</td>
<td>76.00</td>
</tr>
<tr>
<td>01706</td>
<td>EXTRAORDINARY ENZYMES - 60 caps</td>
<td>26.00</td>
<td>19.50</td>
<td>4</td>
<td>106.00</td>
</tr>
<tr>
<td>01514</td>
<td>EYE PRESSURE SUPPORT w/MIRTGENOL™ - 30 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td>4</td>
<td>114.00</td>
</tr>
</tbody>
</table>

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

To order online visit: www.LifeExtension.com

---

**SUB-TOTAL OF COLUMN 7**

**SUB-TOTAL OF COLUMN 8**

**JUNE 2015**
<table>
<thead>
<tr>
<th>No.</th>
<th>G CONTINUED</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01069</td>
<td>GLYCINE - 1,000 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01091</td>
<td>GRAPE EXTRACT w/RESVERATROL (WHOLE) - 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01041</td>
<td>GRAPE SEED EXTRACT w/RESVERATROL &amp; PTEROSTILBENE - 100 mg, 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01604</td>
<td>GREEN COFFEE EXTRACT COFFEEGENIC® - 200 mg, 90 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01620</td>
<td>GREEN COFFEE EXTRACT COFFEEGENIC® - 400 mg, 90 veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00953</td>
<td>GREEN TEA EXTRACT (Mega) - lightly caffeinated - 100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00954</td>
<td>GREEN TEA EXTRACT (Mega) - decaffeinated - 100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01545</td>
<td>GUTSY CHEWY DIGESTIVE (CITRUS FLAVOR) - 8 tablets</td>
<td>11.50</td>
<td>8.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01546</td>
<td>GUTSY CHEWY DIGESTIVE (WILD BERRY FLAVOR) - 8 tablets</td>
<td>11.50</td>
<td>8.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01074</td>
<td>5 HTP - 100 mg, 60 caps</td>
<td>27.95</td>
<td>20.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01738</td>
<td>HCA (GARCINIA) - 90 veg. caps</td>
<td>17.00</td>
<td>12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02974</td>
<td>HCA ACTIVE - 90 caps (Jarrow)</td>
<td>15.00</td>
<td>11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01393</td>
<td>HEPATOPRO - 900 mg, 60 softgels</td>
<td>50.00</td>
<td>37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01527</td>
<td>HUPERZONE A - 200 mcg, 60 veg caps</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00661</td>
<td>HYDRODERM® - 1 oz</td>
<td>79.95</td>
<td>59.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01095</td>
<td>IMMUNE MODULATOR W/TINOFEND® - 60 veg. caps</td>
<td>17.00</td>
<td>12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00955</td>
<td>IMMUNE PROTECT W/PARACTIN® - 30 veg. caps</td>
<td>29.50</td>
<td>22.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01905</td>
<td>IMMUNE SENESCENCE PROTECTION FORMULATM - 60 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01049</td>
<td>INNERPOWER® - 530 grams powder</td>
<td>42.00</td>
<td>31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01674</td>
<td>INOSITOL CAPSULES - 1,000 mg, 360 veg. caps</td>
<td>62.00</td>
<td>46.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01292</td>
<td>INTEGRIS LEAN® AFRICAN MANGO IRVINGIA - 150 mg, 60 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01248</td>
<td>JODINE COMPLETE (ADVANCED) - 180 tablets</td>
<td>46.00</td>
<td>36.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01677</td>
<td>IRON PROTEIN PLUS - 300 mg, 100 caps</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01492</td>
<td>IRVINGIA W/PHASE 3™ - 120 veg. caps</td>
<td>56.00</td>
<td>42.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00556</td>
<td>JARRO-DOPHILUS EPS® - 60 veg. caps</td>
<td>22.95</td>
<td>17.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01759</td>
<td>JARRO-DOPHILUS EPS® - 30 caps</td>
<td>39.95</td>
<td>29.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01724</td>
<td>K w/ADVANCED K2 COMPLEX (SUPER) - 90 softgels</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600</td>
<td>KRILL HEALTHY JOINT FORMULA - 30 softgels</td>
<td>32.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 9**
### Buyers Club Order Form

**Life Extension Members Receive 25% Off the Retail Price of All Products**

**To order online visit: www.LifeExtension.com**

<table>
<thead>
<tr>
<th>No.</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01892</td>
<td></td>
<td></td>
<td>$28.50</td>
</tr>
<tr>
<td>01893</td>
<td></td>
<td></td>
<td>$24.00</td>
</tr>
<tr>
<td>01221</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01471</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01626</td>
<td></td>
<td></td>
<td>$44.25</td>
</tr>
<tr>
<td>01444</td>
<td></td>
<td></td>
<td>$33.50</td>
</tr>
<tr>
<td>01551</td>
<td></td>
<td></td>
<td>$16.50</td>
</tr>
<tr>
<td>01511</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
<tr>
<td>01445</td>
<td></td>
<td></td>
<td>$12.00</td>
</tr>
<tr>
<td>00987</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01121</td>
<td></td>
<td></td>
<td>$37.46</td>
</tr>
<tr>
<td>01603</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01602</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01903</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00374</td>
<td></td>
<td></td>
<td>$14.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01800</td>
<td></td>
<td></td>
<td>$19.75</td>
</tr>
<tr>
<td>01536</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>01537</td>
<td></td>
<td></td>
<td>$17.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01817</td>
<td></td>
<td></td>
<td>$33.00</td>
</tr>
<tr>
<td>01698</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01769</td>
<td></td>
<td></td>
<td>$42.00</td>
</tr>
<tr>
<td>01768</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00065</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>00451</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01534</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01904</td>
<td></td>
<td></td>
<td>$10.13</td>
</tr>
<tr>
<td>00666</td>
<td></td>
<td></td>
<td>$19.50</td>
</tr>
<tr>
<td>01807</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>00984</td>
<td></td>
<td></td>
<td>$9.86</td>
</tr>
<tr>
<td>01824</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01819</td>
<td></td>
<td></td>
<td>$33.75</td>
</tr>
<tr>
<td>01483</td>
<td></td>
<td></td>
<td>$24.75</td>
</tr>
<tr>
<td>01482</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01484</td>
<td></td>
<td></td>
<td>$25.50</td>
</tr>
<tr>
<td>01485</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 1**

**SUB-TOTAL OF COLUMN 12**

<table>
<thead>
<tr>
<th>No.</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01892</td>
<td></td>
<td></td>
<td>$28.50</td>
</tr>
<tr>
<td>01893</td>
<td></td>
<td></td>
<td>$24.00</td>
</tr>
<tr>
<td>01221</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01471</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01626</td>
<td></td>
<td></td>
<td>$44.25</td>
</tr>
<tr>
<td>01444</td>
<td></td>
<td></td>
<td>$33.50</td>
</tr>
<tr>
<td>01551</td>
<td></td>
<td></td>
<td>$16.50</td>
</tr>
<tr>
<td>01511</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
<tr>
<td>01445</td>
<td></td>
<td></td>
<td>$12.00</td>
</tr>
<tr>
<td>00987</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01121</td>
<td></td>
<td></td>
<td>$37.46</td>
</tr>
<tr>
<td>01603</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01602</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01903</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00374</td>
<td></td>
<td></td>
<td>$14.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01800</td>
<td></td>
<td></td>
<td>$19.75</td>
</tr>
<tr>
<td>01536</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>01537</td>
<td></td>
<td></td>
<td>$17.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01817</td>
<td></td>
<td></td>
<td>$33.00</td>
</tr>
<tr>
<td>01698</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01769</td>
<td></td>
<td></td>
<td>$42.00</td>
</tr>
<tr>
<td>01768</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00065</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>00451</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01534</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01904</td>
<td></td>
<td></td>
<td>$10.13</td>
</tr>
<tr>
<td>00666</td>
<td></td>
<td></td>
<td>$19.50</td>
</tr>
<tr>
<td>01807</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>00984</td>
<td></td>
<td></td>
<td>$9.86</td>
</tr>
<tr>
<td>01824</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01819</td>
<td></td>
<td></td>
<td>$33.75</td>
</tr>
<tr>
<td>01483</td>
<td></td>
<td></td>
<td>$24.75</td>
</tr>
<tr>
<td>01482</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01484</td>
<td></td>
<td></td>
<td>$25.50</td>
</tr>
<tr>
<td>01485</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 11**

**SUB-TOTAL OF COLUMN 12**

---

**Buyers Club Order Form**

<table>
<thead>
<tr>
<th>No.</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01892</td>
<td></td>
<td></td>
<td>$28.50</td>
</tr>
<tr>
<td>01893</td>
<td></td>
<td></td>
<td>$24.00</td>
</tr>
<tr>
<td>01221</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01471</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01626</td>
<td></td>
<td></td>
<td>$44.25</td>
</tr>
<tr>
<td>01444</td>
<td></td>
<td></td>
<td>$33.50</td>
</tr>
<tr>
<td>01551</td>
<td></td>
<td></td>
<td>$16.50</td>
</tr>
<tr>
<td>01511</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
<tr>
<td>01445</td>
<td></td>
<td></td>
<td>$12.00</td>
</tr>
<tr>
<td>00987</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01121</td>
<td></td>
<td></td>
<td>$37.46</td>
</tr>
<tr>
<td>01603</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01602</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01903</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00374</td>
<td></td>
<td></td>
<td>$14.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01800</td>
<td></td>
<td></td>
<td>$19.75</td>
</tr>
<tr>
<td>01536</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>01537</td>
<td></td>
<td></td>
<td>$17.25</td>
</tr>
<tr>
<td>00709</td>
<td></td>
<td></td>
<td>$22.13</td>
</tr>
<tr>
<td>01817</td>
<td></td>
<td></td>
<td>$33.00</td>
</tr>
<tr>
<td>01698</td>
<td></td>
<td></td>
<td>$30.00</td>
</tr>
<tr>
<td>01769</td>
<td></td>
<td></td>
<td>$42.00</td>
</tr>
<tr>
<td>01768</td>
<td></td>
<td></td>
<td>$31.50</td>
</tr>
<tr>
<td>00065</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>00451</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01534</td>
<td></td>
<td></td>
<td>$10.50</td>
</tr>
<tr>
<td>01904</td>
<td></td>
<td></td>
<td>$10.13</td>
</tr>
<tr>
<td>00666</td>
<td></td>
<td></td>
<td>$19.50</td>
</tr>
<tr>
<td>01807</td>
<td></td>
<td></td>
<td>$18.75</td>
</tr>
<tr>
<td>00984</td>
<td></td>
<td></td>
<td>$9.86</td>
</tr>
<tr>
<td>01824</td>
<td></td>
<td></td>
<td>$27.00</td>
</tr>
<tr>
<td>01819</td>
<td></td>
<td></td>
<td>$33.75</td>
</tr>
<tr>
<td>01483</td>
<td></td>
<td></td>
<td>$24.75</td>
</tr>
<tr>
<td>01482</td>
<td></td>
<td></td>
<td>$21.00</td>
</tr>
<tr>
<td>01484</td>
<td></td>
<td></td>
<td>$25.50</td>
</tr>
<tr>
<td>01485</td>
<td></td>
<td></td>
<td>$15.00</td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 11**

**SUB-TOTAL OF COLUMN 12**

---

**Life Extension Members Receive 25% Off the Retail Price of All Products**

**To order online visit: www.LifeExtension.com**
### Buyers Club Order Form

**To order call: 1.954.766.8433 or 1.800.544.4440**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>CONTINUED</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01619</td>
<td>OMEGA 3 EPAX-DHA W/SESAME LINSEEDS &amp; - 240 softgels OLIVE FRUIT EXTRACT (SUPER) (SMALL SOFTGEL)</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01981</td>
<td>ONCE-DAILY HEALTH BOOSTER - 60 softgels</td>
<td>$52.00</td>
<td>$39.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01901</td>
<td>ONE PER DAY - 60 tablets</td>
<td>$22.00</td>
<td>$16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01328</td>
<td>ONLY TRACE MINERALS - 90 veg. caps</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01789</td>
<td>PALMETTOGUARD® SAW PALMETTO w/BETA SITOSTEROL - 30 softgels</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01790</td>
<td>PALMETTOGUARD® SUPER SAW PALMETTO - 60 softgels NETTLE ROOT W/BETA-SITOSTEROL</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00073</td>
<td>PANCREATIN - 500 mg, 50 caps</td>
<td>$13.22</td>
<td>$9.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01323</td>
<td>PEAK ATP® WITH GLYCOCARN® - 60 veg. caps</td>
<td>$54.00</td>
<td>$40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00342</td>
<td>PECTA SOL-C® MODIFIED CITRUS PECTIN - 454 grams powder</td>
<td>$109.95</td>
<td>$82.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01080</td>
<td>PECTA SOL-C® MODIFIED CITRUS PECTIN - 270 veg. caps</td>
<td>$79.95</td>
<td>$59.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01811</td>
<td>PEGNY IMMUNE - 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00673</td>
<td>PGX™ PLUS MULBERRY (WELLBETX®) - 180 veg. caps</td>
<td>$34.00</td>
<td>$26.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00865</td>
<td>PHARMA GABA® - 60 chewable tablets</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01767</td>
<td>PHOSPHATIDYLSERINE CAPS® - 100 mg, 100 veg. caps</td>
<td>$54.00</td>
<td>$40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01436</td>
<td>POLIOCOSANOL - 10 mg, 60 veg. caps</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01423</td>
<td>POMEGRANATE (FULL-SPECTRUM) - 30 softgels</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00956</td>
<td>POMEGRANATE EXTRACT - 30 veg. caps</td>
<td>$19.50</td>
<td>$14.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01797</td>
<td>POM-T® - 60 veg. caps</td>
<td>$33.33</td>
<td>$25.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00577</td>
<td>POTASSIUM IODIDE - 1 box, 14 tablets</td>
<td>$6.95</td>
<td>$5.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01500</td>
<td>PQQ CAPS W/BIPQQ® - 10 mg, 30 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01647</td>
<td>PQQ CAPS W/BIPQQ® - 20 mg, 30 veg. caps</td>
<td>$40.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00302</td>
<td>PREGNENOLONE - 50 mg, 100 caps</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00700</td>
<td>PREGNENOLONE - 100 mg, 100 caps</td>
<td>$30.00</td>
<td>$22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>01373</strong></td>
<td>PRELOX® NATURAL SEX FOR MEN® - 60 tablets</td>
<td>$52.00</td>
<td>$39.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 13**

**SUB-TOTAL OF COLUMN 14**

---

JUNE 2015

LIFE EXTENSION MEMBERS RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS
## Buyers Club Order Form

To order online visit: www.LifeExtension.com

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01930</td>
<td>RESVERATROL W/ NAD+ CELL REGENERATOR™ (OPTIMIZED) - 30 veg. caps</td>
<td>$42.00</td>
<td>$31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01430</td>
<td>RESVERATROL w/SYNERGISTIC GRAPPE-BERRY ACTIVES (OPTIMIZED) - 250 mg, 60 veg. caps</td>
<td>$46.00</td>
<td>$34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00889</td>
<td>RHODIOLA EXTRACT - 250 mg, 60 veg. caps</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01900</td>
<td>RIBOGEN™ FRENCH OAK WOOD EXTRACT - 200 mg, 30 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00972</td>
<td>(D) RIBOSE POWDER - 150 grams</td>
<td>$27.50</td>
<td>$20.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01473</td>
<td>(D) RIBOSE TABLETS - 100 veg. tabs</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01609</td>
<td>RICH REWARDS® BREAKFAST GROUND COFFEE - 12 oz. bag</td>
<td>$13.00</td>
<td>$9.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01730</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - 12 oz. bag</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01729</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE - Natural Mocha</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01612</td>
<td>RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE - 12 oz. bag</td>
<td>$13.00</td>
<td>$9.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01610</td>
<td>RICH REWARDS® DECAF-EFFERENTED ROAST GROUND COFFEE - 12 oz. bag</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01530</td>
<td>RICH REWARDS® CRUCIFEROUS VEGETABLE SOUP - 32 oz. bottle</td>
<td>$11.95</td>
<td>$8.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01208</td>
<td>R-LIPOIC ACID (SUPER) - 240 mg, 60 veg. caps</td>
<td>$49.00</td>
<td>$36.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00070</td>
<td>RNA CAPSULES - 500 mg, 100 caps</td>
<td>$17.95</td>
<td>$13.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01432</td>
<td>SAFFRON w/SATIEREAL® (OPTIMIZED) - 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00358</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 200 mg, 20 enteric coated tablets</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00557</td>
<td>SAME (S-ADENOSYL-METHIONINE) - 400 mg, 20 enteric coated tablets</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01740</td>
<td>SEA-IODINE™ - 1,000 mcg, 60 veg. caps</td>
<td>$8.00</td>
<td>$6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00046</td>
<td>SELENIUM - 2 oz dropper bottle</td>
<td>$11.95</td>
<td>$8.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01679</td>
<td>SE-BETAIN L-SELENOCYSTEINE - 200 mcg, 100 veg. caps</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00318</td>
<td>SERIFLAVZYME™ - 100 tablets</td>
<td>$18.00</td>
<td>$13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01684</td>
<td>SILMARIN - 100 mg, 50 veg. caps</td>
<td>$9.25</td>
<td>$6.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01249</td>
<td>SINGUS CLEANSER - 4 oz. bottle</td>
<td>$25.00</td>
<td>$18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01596</td>
<td>SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT® - 30 veg. liquid caps</td>
<td>$25.00</td>
<td>$18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00961</td>
<td>SO DEZYMIE™ w/GLIDOSIDE AND WOLFBERRY - 90 veg. caps</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00657</td>
<td>SOLARSHIELD SUNGLASSES - 1 pair smoke color</td>
<td>$12.99</td>
<td>$9.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01097</td>
<td>SOY EXTRACT (ULTRA) - 150 veg. caps</td>
<td>$87.00</td>
<td>$65.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00432</td>
<td>STEVIA® EXTRACT (BETTER) - 100 packets, 1 gram each</td>
<td>$9.95</td>
<td>$7.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 15**

<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00438</td>
<td>STEVIA® ORGANIC LIQUID EXTRACT (BETTER) - 2 oz liquid</td>
<td>$11.00</td>
<td>$8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01476</td>
<td>STRONTIUM - 750 mg, 90 veg. caps</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01649</td>
<td>SUPER ABSORBABLE SOY ISOFLAVONES - 60 veg. caps</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01778</td>
<td>SUPER SELENIUM COMPLEX - 200 mcg, 100 veg. caps</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01723</td>
<td>TART CHERRY EXTRACT w/STANDARDIZED CHERRYPURE® - 60 veg. caps</td>
<td>$22.00</td>
<td>$16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00199</td>
<td>TAURINE - 1,000 mg, 50 caps</td>
<td>$8.95</td>
<td>$6.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00133</td>
<td>L-TAUINE POWDER - 30 grams</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01304</td>
<td>THEAFLAVIN STANDARDIZED EXTRACT - 30 veg. caps</td>
<td>$18.00</td>
<td>$13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01683</td>
<td>(L) THEANINE - 100 mg, 60 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00668</td>
<td>THYROID FORMULA™ (METABOLIC ADVANTAGE) - 100 caps</td>
<td>$21.95</td>
<td>$16.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00349</td>
<td>TMG POWDER - 50 grams</td>
<td>$14.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01659</td>
<td>TMG - 500 mg, 60 veg. liquid caps</td>
<td>$13.00</td>
<td>$9.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00781</td>
<td>TOCOTRIENOLS WITH SESAME LIGNANS - 60 softgels</td>
<td>$38.00</td>
<td>$28.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01400</td>
<td>TOCOTRIENOLS (SUPER-ABSORBABLE) - 60 softgels</td>
<td>$30.00</td>
<td>$22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00128</td>
<td>TOOTHPASTE - 4 oz (Mint)</td>
<td>$9.50</td>
<td>$7.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01468</td>
<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT - 60 veg. caps</td>
<td>$24.00</td>
<td>$18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01469</td>
<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT W/RESVERATROL - 60 veg. caps</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01803</td>
<td>TRI SUGAR SHIELD™ - 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00386</td>
<td>TRUFIBER® - 180 grams</td>
<td>$32.95</td>
<td>$24.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00389</td>
<td>TRUFLORA PROBIOTICS - 32 veg. caps</td>
<td>$42.95</td>
<td>$32.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01722</td>
<td>L-TRYPTOPHAN - 500 mg, 90 veg. caps</td>
<td>$33.00</td>
<td>$24.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01721</td>
<td>TRYPTOPHAN PLUS (OPTIMIZED) - 90 veg. caps</td>
<td>$32.00</td>
<td>$24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01916</td>
<td>TWO-PER-DAY - 60 tablets</td>
<td>$10.50</td>
<td>$7.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01915</td>
<td>TWO-PER-DAY - 120 tablets</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01914</td>
<td>TWO-PER-DAY - 120 capsules</td>
<td>$22.00</td>
<td>$16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00326</td>
<td>L-TYROSINE - 500 mg, 100 tablets</td>
<td>$12.98</td>
<td>$9.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 16**

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

JUNE 2015
### Buyers Club Order Form

<table>
<thead>
<tr>
<th>No.</th>
<th>Retail Each</th>
<th>Member Each</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00213</td>
<td>VANADYL SULFATE - 7.5 mg, 100 veg. tablets</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
</tr>
<tr>
<td>00048</td>
<td>ZINC HIGH POTENCY - 50 mg, 90 veg. caps</td>
<td>$7.95</td>
<td>$5.96</td>
<td></td>
</tr>
<tr>
<td>01561</td>
<td>ZINC GLUCONATE/OXIDE LOZENGES - 18.75 mg, 60 veg. lozenges</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
</tr>
<tr>
<td>01961</td>
<td>ZINC ACETATE LOZENGES (ENHANCED) - 18.75 mg, 30 veg. lozenges</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
</tr>
<tr>
<td>00372</td>
<td>ZINC B3 NIACIN - 500 mg, 100 caps</td>
<td>$10.50</td>
<td>$7.88</td>
<td></td>
</tr>
<tr>
<td>00361</td>
<td>VITAMIN B6 - 250 mg, 100 veg. caps</td>
<td>$12.50</td>
<td>$9.38</td>
<td></td>
</tr>
<tr>
<td>01634</td>
<td>ZINC C w/DIHYDROQUERCETIN - 1,000 mg, 60 veg. tablets</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>ZINC B12 - 500 mcg, 100 lozenges</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>VANADYL SULFATE - 7.5 mg, 100 veg. tablets</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>ZINC GLUCONATE/OXIDE LOZENGES - 18.75 mg, 60 veg. lozenges</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
</tr>
<tr>
<td>01961</td>
<td>ZINC ACETATE LOZENGES (ENHANCED) - 18.75 mg, 30 veg. lozenges</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>VITAMIN B3 NIACIN - 500 mg, 100 caps</td>
<td>$7.65</td>
<td>$5.74</td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>ZINC GLUCONATE/OXIDE LOZENGES - 18.75 mg, 60 veg. lozenges</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
</tr>
<tr>
<td>01961</td>
<td>ZINC ACETATE LOZENGES (ENHANCED) - 18.75 mg, 30 veg. lozenges</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
</tr>
<tr>
<td>00361</td>
<td>VITAMIN B6 - 250 mg, 100 veg. caps</td>
<td>$12.50</td>
<td>$9.38</td>
<td></td>
</tr>
<tr>
<td>01634</td>
<td>ZINC C w/DIHYDROQUERCETIN - 1,000 mg, 60 veg. tablets</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>ZINC B12 - 500 mcg, 100 lozenges</td>
<td>$10.00</td>
<td>$7.50</td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>VANADYL SULFATE - 7.5 mg, 100 veg. tablets</td>
<td>$15.00</td>
<td>$11.25</td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>ZINC GLUCONATE/OXIDE LOZENGES - 18.75 mg, 60 veg. lozenges</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
</tr>
<tr>
<td>01961</td>
<td>ZINC ACETATE LOZENGES (ENHANCED) - 18.75 mg, 30 veg. lozenges</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>VITAMIN B3 NIACIN - 500 mg, 100 caps</td>
<td>$10.50</td>
<td>$7.88</td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>ZINC GLUCONATE/OXIDE LOZENGES - 18.75 mg, 60 veg. lozenges</td>
<td>$9.00</td>
<td>$6.75</td>
<td></td>
</tr>
<tr>
<td>01961</td>
<td>ZINC ACETATE LOZENGES (ENHANCED) - 18.75 mg, 30 veg. lozenges</td>
<td>$12.00</td>
<td>$9.00</td>
<td></td>
</tr>
</tbody>
</table>

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

---

**GIVE THE LIFE-ENHANCING BENEFITS OF LIFE EXTENSION WITH A GIFT OF $10, $25, $50 OR $100**

To order a Life Extension Gift Card for someone special, call 1-800-544-4440

---

**GIVE THE GIFT of HEALTH with a LIFE EXTENSION GIFT CARD!**

---
### Buyers Club Order Form

**Life Extension Foundation® Buyers Club, Inc.**  
P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198  
Or Call Toll Free 1-800-544-4440 • Fax: 866-728-1050

**ORDER ONLINE AT:** www.LifeExtension.com

---

**ORDER SUBTOTALS**

<table>
<thead>
<tr>
<th>Sub-Total Column</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

**ORDER TOTALS**

- **Sub-Total A** (Sub-total of Columns 1 through 18)
- **Postage And Handling** (Any size order, contiguous U.S.) $5.50
- **C.O.D.s** (Add $7 for C.O.D. orders)
- **Shipping**
  - UPS OVERNIGHT add $16, UPS 2nd DAY AIR add $7. For Puerto Rico, U.S. Virgin Islands, Alaska & Hawaii, add $7. CANADA UPS EXPRESS Flat rate $17.50, UK Flat rate $25 USD. All other international air will be added.
- **GRAND TOTAL** (Must be in U.S. dollars)

---

**BILL TO ADDRESS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS</td>
<td></td>
</tr>
<tr>
<td>CITY/STATE/ZIP-POSTAL CODE</td>
<td>COUNTRY</td>
</tr>
<tr>
<td>PHONE</td>
<td>FAX</td>
</tr>
<tr>
<td>VISA/MASTERCARD/AMEX/DISCOVER #</td>
<td></td>
</tr>
<tr>
<td>EXP. DATE</td>
<td></td>
</tr>
<tr>
<td>SIGNATURE</td>
<td></td>
</tr>
</tbody>
</table>

**SHIP TO ADDRESS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS</td>
<td></td>
</tr>
<tr>
<td>CITY/STATE/ZIP-POSTAL CODE</td>
<td>COUNTRY</td>
</tr>
<tr>
<td>PHONE</td>
<td>FAX</td>
</tr>
<tr>
<td>SIGNATURE</td>
<td></td>
</tr>
</tbody>
</table>

**NOT A MEMBER? JOIN TODAY!**

- I want to join the Life Extension Foundation®.
  Enclosed is $75 for annual membership. (Canadians add $7.00, all others outside the U.S. add $35.00). Send me: Disease Prevention & Treatment Protocol Book

- CHECK HERE FOR C.O.D. ORDERS
- CHECK HERE FOR UPS BLUE LABEL (2ND DAY)
- CHECK HERE FOR UPS RED LABEL (OVERNIGHT)

**Prices subject to change without notice. Please notify the Life Extension Foundation® of any address change.**
**LIFE EXTENSION MEDIA**

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Author(s)</th>
<th>Year</th>
<th>Retail</th>
<th>Member Price</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>33878</td>
<td>TESTOSTERONE REPLACEMENT THERAPY</td>
<td>Dr. John Crisler</td>
<td>2015</td>
<td>$19.99</td>
<td>$14.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33877</td>
<td>THE TRUTH ABOUT MEN AND SEX</td>
<td>Abraham Morgentaler, MD FACS</td>
<td>2015</td>
<td>$16.99</td>
<td>$12.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33876</td>
<td>TOX-SICK</td>
<td>Suzanne Somers</td>
<td>2015</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33875</td>
<td>DOCTORED THE DISILLUSSION OF AN AMERICAN PHYSICIAN</td>
<td>Sandeep Jauhar</td>
<td>2015</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33874</td>
<td>MISSING MICROBES</td>
<td>Martin J. Blaser, MD</td>
<td>2014</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33873</td>
<td>EATING ON THE WILD SIDE</td>
<td>Jo Robinson</td>
<td>2014</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33872</td>
<td>GET SERIOUS</td>
<td>Brett Osborn, MD</td>
<td>2014</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33868</td>
<td>TOXIN TOXITY: GETTING HARMFUL CHEMICAL OUT OF OUR BODIES AND OUR WORLD</td>
<td>Bruce Lourie and Rick Smith</td>
<td>2014</td>
<td>$25.99</td>
<td>$19.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33871</td>
<td>DOCTORED RESULTS: THE SUPPRESSION OF LAETRILE AT LAETRILE-KETTNERING INSTITUTE</td>
<td>Ralph W. Moss, PhD</td>
<td>2014</td>
<td>$19.95</td>
<td>$14.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33867</td>
<td>THE COMPLETE MEDITERRANEAN DIET</td>
<td>Michael Ozner, MD</td>
<td>2014</td>
<td>$19.95</td>
<td>$14.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33869</td>
<td>UNLEASH THE POWER OF THE FEMALE BRAIN</td>
<td>Daniel Amen, MD</td>
<td>2014</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33870</td>
<td>MAGNIFICENT MAGNESIUM</td>
<td>Dennis Goodman, MD</td>
<td>2014</td>
<td>$14.95</td>
<td>$11.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33866</td>
<td>HEART, AN AMERICAN MEDICAL ODYSSEY</td>
<td>Dick Cheney, Jonathan Reiner, MD</td>
<td>2014</td>
<td>$28.00</td>
<td>$21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33864</td>
<td>THE SUPPLEMENT PYRAMID</td>
<td>Michael A. Smith, MD</td>
<td>2014</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33865</td>
<td>THE RESTORATION OF THE HUMAN BODY (IN 7 PARTS)</td>
<td>Sergey A. Dzugan, MD, PhD</td>
<td>2014</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33862</td>
<td>TOO YOUNG FOR THIS</td>
<td>Suzanne Somers, MD</td>
<td>2013</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33835</td>
<td>PHARMACORE</td>
<td>William Faloon, MD</td>
<td>2011</td>
<td>$24.00</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33958</td>
<td>THE VITAMIN D SOLUTION</td>
<td>Michael F. Holick, PhD, MD (paperback)</td>
<td>2013</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33861</td>
<td>THE SOUTH BEACH DIET GLUTEN SOLUTION</td>
<td>Dr. Arthur Agatston</td>
<td>2013</td>
<td>$25.99</td>
<td>$19.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33859</td>
<td>THE BLOOD SUGAR SOLUTION</td>
<td>Mark Hyman, MD</td>
<td>2013</td>
<td>$27.99</td>
<td>$20.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33855</td>
<td>POWER FOODS FOR THE BRAIN</td>
<td>Neil D. Barnard, MD</td>
<td>2013</td>
<td>$26.99</td>
<td>$20.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33854</td>
<td>THE GREAT CHOLESTEROL MYTH</td>
<td>Jonny Bowden, PhD, CNS and Stephen Sinatra, MD</td>
<td>2012</td>
<td>$19.99</td>
<td>$14.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33852</td>
<td>THE MAGIC OF CHOLESTEROL NUMBERS</td>
<td>Sergey Dzugan, MD</td>
<td>2012</td>
<td>$29.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33848</td>
<td>YOUR BEST INVESTMENT SECRETS TO A HEALTHY BODY AND MIND</td>
<td>Edwin Lee, MD</td>
<td>2012</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33847</td>
<td>THE FATIGUE SOLUTION</td>
<td>Eva Cynar, MD</td>
<td>2012</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33844</td>
<td>ABUNDANCE: THE FUTURE IS BETTER THAN YOU THINK</td>
<td>Steven Koller and Peter Diamandis</td>
<td>2012</td>
<td>$26.99</td>
<td>$20.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33843</td>
<td>BOMBSHELL</td>
<td>Suzanne Somers, MD</td>
<td>2012</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33845</td>
<td>DRUG MUGGERS</td>
<td>R.P. Susy Cohen, MD</td>
<td>2012</td>
<td>$21.99</td>
<td>$16.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33842</td>
<td>HEART ATTACK PROOF</td>
<td>Michael Ozner, MD</td>
<td>2012</td>
<td>$21.99</td>
<td>$16.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33838</td>
<td>YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY</td>
<td>Gary Goldlauden, MD</td>
<td>2012</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33833</td>
<td>THE LIFE PLAN</td>
<td>Jeffry L. S. Life, MD, PhD</td>
<td>2011</td>
<td>$26.00</td>
<td>$19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33822</td>
<td>BREAKTHROUGH: EIGHT STEPS TO WELLNESS</td>
<td>Suzanne Somers, MD (paperback)</td>
<td>2010</td>
<td>$15.00</td>
<td>$10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33816</td>
<td>FDA, FAILURE, DECEPTION, ABUSE</td>
<td>Life Extension Foundation</td>
<td>2010</td>
<td>$20.00</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33815</td>
<td>KNOCKOUT</td>
<td>Suzanne Somers, MD</td>
<td>2009</td>
<td>$25.99</td>
<td>$19.49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33812</td>
<td>LIFE OVER CANCER</td>
<td>Keith Block, MD (hardcover)</td>
<td>2009</td>
<td>$25.00</td>
<td>$18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33809</td>
<td>TESTOSTERONE FOR LIFE</td>
<td>Abraham Morgentaler, MD</td>
<td>2008</td>
<td>$16.95</td>
<td>$11.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33806</td>
<td>LIFE EXTENSION REVOLUTION</td>
<td>Philip Lee Miller, MD (paperback)</td>
<td>2008</td>
<td>$16.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33805</td>
<td>MIAMI MEDITERRANEAN DIET WITH 300 RECIPES</td>
<td>Michael D. Ozner, MD, M.D, FACC, FAHA (hardcover)</td>
<td>2008</td>
<td>$24.95</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33906</td>
<td>THE MIGRAINE CURE</td>
<td>Sergey Dzugan, MD, PhD</td>
<td>2006</td>
<td>$24.00</td>
<td>$18.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33870</td>
<td>A PRIMER ON PROSTATE CANCER (2nd edition)</td>
<td>Stephen B. Strum, MD, and Donna Pogliano</td>
<td>2005</td>
<td>$28.95</td>
<td>$22.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33808</td>
<td>THE CR WAY</td>
<td>Paul McGlothin and Meredith Avinill</td>
<td>2004</td>
<td>$15.95</td>
<td>$12.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33828</td>
<td>THE SEXY YEARS</td>
<td>Suzanne Somers, MD (paperback)</td>
<td>2003</td>
<td>$15.00</td>
<td>$12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33803</td>
<td>WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT DIABETES</td>
<td>Steven V. Joyal, MD</td>
<td>2003</td>
<td>$14.99</td>
<td>$10.49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE MAIL TO:** Life Extension Foundation Buyers Club, Inc., P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198. Or Call Toll Free 1-800-544-4440 • Fax: 866-728-1050. Other International Shipping Restrictions May Apply. Please visit www.LifeExtension.com/vitamins-supplements/shipping/shipping-information.htm

**LIFE EXTENSION FOUNDATION® MEMBERS ONLY**

**NOT A MEMBER? JOIN TODAY!**

- I want to join the Life Extension Foundation®.
- Enclosed is $75 for annual membership. (Canadians add $70, all others outside the U.S. add $35.00). Send me: Disease Prevention 4. Treatment Protocol Book

**NAME**

**E-MAIL**

**ADDRESS**

**CITY/STATE/ZIP-POSTAL CODE**

**COUNTRY**

**PHONE**

**FAX**

**VISA/MASTERCARD/AMEX/DISCOVER #**

**EXP. DATE**

**SIGNATURE**

**COD**

**UPS RED LABEL**

**UPS BLUE LABEL**

**Shipping only $5.50 U.S. • $17.50 Canada • $12.50 Hawaii, Alaska, U.S. Virgin Islands, Puerto Rico • UK Flat rate $25 USD**

(Add $7 for C.O.D. • Add $16.00 for UPS overnight • Add $7.00 for UPS 2nd day air • International air mail costs will be added.)

**TOTAL**

To order call: 1.954.766.8433 or 1.800.544.4440

**To order online visit:** www.LifeExtension.com
FREE Gift to New Members

This 2014 edition of Disease Prevention and Treatment provides 1,400 pages of information about therapies that are documented in the scientific literature, but are not routinely used in clinical medical practice. Gaining access to this knowledge enables one with a medical disorder to take advantage of these advanced modalities immediately, rather than waiting years for conventional medicine to catch on.

To order a copy of Disease Prevention and Treatment, visit www.LifeExtension.com

HOW TO JOIN

THE LIFE EXTENSION FOUNDATION®

As a member of the Life Extension Foundation®, you have the opportunity to participate in a great scientific endeavor. We are the world’s premier organization dedicated to stopping and reversing aging.

Our 35-year track record shows that we have been five to 10 years ahead of conventional and alternative medicine in making new life-saving therapies available to our members.

When you join the Life Extension Foundation®, we update you on the latest published medical research by sending you FREE books. Our most impressive publication is the 1,400-page Disease Prevention and Treatment protocol book that contains novel therapies to treat 130 common diseases of aging. Disease Prevention and Treatment is the only book that combines conventional and alternative therapies in order to implement a treatment regimen for fighting the multiple processes involved in degenerative disease.

Each month, Life Extension Foundation® members receive a magazine packed with the latest medical findings from around the world. Members also can call a toll-free phone number to talk to our knowledgeable health advisors about their health issues.

If your number one priority is good health and a long life, please join our not-for-profit organization.

Four Easy Ways to Join
1. Call toll-free 1-800-544-4440
2. Go to www.LifeExtension.com
3. Fax back to 1-866-728-1050
4. Mail to: Life Extension Foundation®
   PO Box 407198 • Ft. Lauderdale, FL 33340-7198

MEMBERSHIP APPLICATION

I want to contribute to your research efforts to extend the healthy human life span. Enclosed is my first year’s membership donation of $75 to join the most elite group of longevity enthusiasts in the world. (Canadians add $7, all others outside the U.S. add $35)

Item code: MEMB1. Call for multiple year membership rates.

Name

Address

City ST ZIP

Email Phone

☑ Check enclosed (payable to Life Extension Foundation®)

☑ Charge my cc:

Card # Exp.

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

JUNE 2015
There’s Garcinia Cambogia, and then there’s HCActive™

HCActive™ is a patented Garcinia cambogia extract supplying HCA (Hydroxycitric Acid) stabilized with potassium and magnesium. The unique manufacturing and quality control processes used to produce HCActive yield HCA that is up to 5X more bioavailable* than other forms of HCA. It also is more concentrated — HCActive delivers 70% HCA.

Most HCA products are stabilized by a potassium-calcium salt, significantly reducing the amount of HCA absorbed because calcium interferes with potassium absorption. The synergistic combination of potassium and magnesium creates HCActive, the uniquely effective Garcinia cambogia product. Potassium has a great affinity for cellular uptake and magnesium makes it easier for potassium to enter cells, bringing the HCA of HCActive along with it. HCActive is also greater than 99% pure!

5X More Bioavailable than Regular HCA

HCActive reduces appetite, supports weight loss, inhibits the conversion of carbohydrates to fat, and promotes a more sustained feeling of satiety.*

Jarrow Formulas® HCActive™, 90 capsules. Item # 29754 - Retail $30.00 - Member price $22.50
To order, call 800.544.4440 or visit www.LifeExtension.com
This supplement should be taken in conjunction with a healthy diet and regular exercise program. Results may vary.

For more information visit us at www.Jarrow.com

HCActive™ is protected by nine US Patents 6,207,714; 6,441,041; 6,447,807; 6,476,071; 6,482,858; 7,015,250; 7,189,416; 8,394,856; 8,367,864.

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

At Master Supplements, we believe that you deserve the best; and that you need to follow your gut to get it. We have been raising the standard of digestive health for over 10 years and are dedicated to getting our powerful products into the hands of everyone who needs them.

WHAT SETS US APART?

- **Maximum Economic Value!** Two capsules a week on maintenance dose.
- Full transparency with lab tests published online by lot number.
- **Patented Prebiotic Stimulation** to power up probiotic strains.
- Deep delivery and natural acid proof protection.

Call **Life Extension®** now to order any of these fine Master Supplement products to feel the benefits for yourself.

**800-544-4440**

---

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.
Vitamin C is essential for life because the human body cannot synthesize it.

During stressful events, plasma and white blood cell vitamin C levels decrease.

Numerous studies have demonstrated that vitamin C supplementation supports healthy immune function, including cell mediated immunity and neutrophil function. Vitamin C promotes the body’s natural protection against oxidative damage to lipids, proteins, and DNA.

Life Extension introduces daily C+, a citrus-flavored, effervescent drink mix that provides a blend of 1,000 mg of vitamin C and other essential vitamins and minerals in individualized packets—ideal to take “on the go” to support your immune system and general health.

With each delicious sip, you obtain 18 different nutrients—including vitamin C, B vitamins, and electrolytes:

- 1,000 mg of vitamin C combined with vitamin D3, zinc, quercetin, and other nutrients to support your immune system.
- Seven B vitamins, including B1, B2, B3, B6, and B12, that boost energy naturally—no caffeine, no crash.
- Bioactive forms of riboflavin, vitamin B6, and vitamin B12.
- Electrolytes to replenish those lost through perspiration, especially during workouts.

New daily C+ has just 15 calories per packet. It is sugar-free, sodium-free, and naturally sweetened with stevia and monk fruit extract. Adults can take one packet up to two times daily mixed in 4-8 ounces of cold water, according to taste.

To order Life Extension® daily C+, call 1-800-544-4440 or visit www.LifeExtension.com

References
Critical Importance of Mitochondria

Mitochondria provide the power your body requires for a healthy life span. As mitochondria levels decline, cells lose their ability to sustain function and support life processes.\(^7\)\(^6\)

PQQ is a natural compound that uniquely supports *mitochondrial biogenesis*—the generation of new mitochondria in aging cells.\(^6\) PQQ stands for pyrroloquinoline quinone and is available as a standalone dietary supplement as well as in combination with ubiquinol CoQ\(^{10}\) and Mitochondrial Energy Optimizer.

PQQ protects and augments delicate mitochondrial structures to promote youthful cellular function.

Vital Protection for the Aging Heart and Brain

A growing body of research indicates that PQQ’s unique nutritional profile supports heart health and cognitive function—alone and in combination with CoQ\(^{10}\).\(^3\)\(^0\) This comes as no surprise, given how much energy these vital organs need.

When taken in combination with CoQ\(^{10}\), just 20 mg per day of PQQ has been shown to promote memory, attention, and cognition in maturing individuals.\(^1\)

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

A Potent Weapon in the Battle Against Aging

A bottle containing 30 20 mg vegetarian capsules of PQQ Caps retails for $40. If a member buys four bottles, the price is reduced to $24 per bottle. (Item #01647)

The recommended daily dose for PQQ is 20 mg.

Those taking Mitochondrial Energy Optimizer, Mitochondrial Basics, or Super Ubiquinol with PQQ may 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, the price is reduced to only $13.50 per bottle. (Item #01500)

Non-GMO

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

References

Non-GMO

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

CoQ10 and PQQ in One Capsule

There is a version of Super Ubiquinol CoQ10 that contains 10 mg of PQQ in each 100 mg ubiquinol capsule. This formula also contains *shilajit*, which has been shown to double levels of coenzyme Q10 in mitochondria.

The retail price for 30 softgel caps is $54. If a member buys four, then price is reduced to $33 each. When 10 bottles are bought, the price goes down to $30 per bottle.

Non-GMO

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.
34 NEW BLOOD TEST FOR OXIDIZED LDL CHOLESTEROL
Blood tests for oxidized LDL, a known vascular risk, were previously available only at sophisticated research labs. Life Extension® members can now access these lifesaving tests at an affordable cost.

7 PROTECT AGAINST SUDDEN CARDIAC ARREST
A 2014 study reveals that low testosterone or high levels of estrogen sharply increase risk of cardiac arrest in men. Find out the dangers of failing to test testosterone and estrogen blood levels in aging men.

54 PROTECT SKIN AGAINST GLYCATION DAMAGE
Glycation is a major cause of accelerated skin aging, disrupting collagen metabolism and leading to wrinkles and sagging. Five topical nutrients block the detrimental effects of glycation and promote dermal regeneration.

26 MEDITERRANEAN TRIM
Fat cells in obese individuals have a decreased function of a fat-removing enzyme called hormone-sensitive lipase. Clinical studies show that a blend of Mediterranean citrus fruits and South American seed extracts restores this vital enzyme and can produce reductions of body fat as much as 15.6%.

46 MALE MENOPAUSE
Dr. Abraham Morgentaler, associate clinical professor at Harvard Medical School, discusses the quality-of-life benefits of testosterone supplementation for maturing men and how testosterone treatment does not cause prostate cancer.

64 GUARD AGAINST DEADLY EFFECTS OF ACID REFLUX
Blocking stomach acid with drugs like Nexium® provides only partial protection from acid reflux. A safer approach is the use of a raft-forming alginate that blocks the backflow of stomach contents, preventing discomfort and potentially reducing risk of esophageal cancer.