How Carnosine Delays Aging

Will Magnesium Become the Next Vitamin D?

Activate Multiple Longevity Pathways

Protect Brain Cells Against Daily Stress

Boost Your Cellular Magnesium Levels

PLUS—
Slow Telomere Shortening
Calorie Control Update
Taurine and Aging Brains
When conventional B vitamins are ingested, they must be enzymatically converted in the body to metabolically active forms.

BioActive Complete B-Complex provides enzymatically active forms of meaningful potencies of each B vitamin. This includes the pyridoxal 5’-phosphate form of vitamin B6 (the metabolically active form, shown to protect lipids and proteins against glycation reactions) and the most biologically active form of folate called 5-methyltetrahydrofolate (5-MTHF), which is up to 7 times more bioavailable than folic acid.¹

To order BioActive Complete B-Complex, call 1-800-544-4440 or visit www.LifeExtension.com

BioActive Complete B-Complex
Item #01945 • 60 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$12</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$8 each</td>
</tr>
</tbody>
</table>

Non-GMO

Reference
**REPORTS**

**24 HOW CARNOSINE DELAYS AGING**
Chronic exposure to glucose damages tissues throughout the body via the glycation process. New human studies demonstrate how carnosine can lower blood sugar/insulin levels and protect our proteins against premature aging.

**36 TAURINE AND BRAIN HEALTH**
Taurine is a low-cost amino acid whose concentrations in the brain decline with age. Taurine protects against environmental toxins, reduces brain inflammation, and stimulates neuron formation.

**54 ACTIVATE THREE PATHWAYS OF LONGEVITY**
A nutrient found in blueberries called pterostilbene activates anti-aging molecular pathways similar to calorie restriction. Studies show it helps prevent the buildup of cellular waste products.

**64 CURCUMIN REVERSES STRESS-INDUCED CELL DAMAGE**
Chronic stress damages the brain’s delicate structures. Curcumin has been shown to reverse some of these harmful changes. In addition, curcumin can reduce symptoms of stress and depression.

**74 CALORIE RESTRICTION UPDATE: HIGH-NORMAL BLOOD SUGAR SHRINKS BRAIN**
Blood sugar levels in the high-normal range can result in significant brain shrinkage in areas involved with memory. Learn to control glucose naturally, without medication, and protect your brain function through the online course, *The CR Way® to Great Glucose Control*.

**DEPARTMENTS**

**7 IS MAGNESIUM THE NEXT VITAMIN D?**
Pancreatic cancer kills 40,000 Americans each year. In a landmark study, increased magnesium intake was associated with a significant reduction in pancreatic cancer incidence. Magnesium is rapidly becoming “the new vitamin D.” We say this because magnesium protects against a host of degenerative diseases, costs very little, and is increasingly recognized as a nutrient that all aging individuals should include in their supplement program.

**17 IN THE NEWS**
Coffee protects telomeres; migraines linked to nutritional deficiencies; omega-3 shortens hospital stays; zinc lowers glucose; aspirin fights cancer; hypertriglyceridemia is a bone-fracture risk; laser treats prostate cancer; CT risks underestimated.

**83 RESEARCH UPDATE: PREVENT TELOMERE SHORTENING**
Scientists have discovered that shorter telomeres lead to a higher mortality rate. New studies demonstrate that longer telomeres can be promoted by maintaining adequate intake of specific nutrients.

**89 AUTHOR INTERVIEW: THE DNA RESTART**
Sharon Moalem, MD, PhD, reveals in his new book, *The DNA Restart*, how to lose weight, inhibit disease, and reverse aging by following a lifestyle that caters to each person’s unique genetic heritage.

**95 WELLNESS PROFILE: PAUL MASON**
Paul Mason’s mission is to educate the world about widespread magnesium deficiency and that higher magnesium intake is urgently needed.
• Personal Consultation with Life Extension
• Blood Testing and Analysis
• The Most Complete Line of Life Extension Supplements

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. Mail subscriptions or address changes to: LE Publications, Inc., P.O. Box 407198, Fort Lauderdale, FL 33340-7198, USA. Or phone us toll-free at: 1-800-841-5433.

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.

Customer care is available to take your calls 24 hours a day, 7 days a week.

Visit the Life Extension Nutrition Center Store
• The Most Complete Line of Life Extension Supplements
• Blood Testing and Analysis
• Personal Consultation with Life Extension Product/Wellness Specialist

Life Extension (ISSN 1524-198X) Vol. 22, No. 12 ©2016 is published monthly except bi-monthly in April by LE Publications, Inc. at 3600 West Commercial Blvd., Fort Lauderdale, FL 33309-3328. LE Publications, Inc. All rights reserved. Published 13 times a year. Subscription rate: $40 per year in the United States. US $47 in Canada. US $60 in other countries. Mail subscriptions or address changes to: LE Publications, Inc., P.O. Box 407198, Fort Lauderdale, FL 33340-7198, USA. Or phone us toll-free at: 1-800-841-5433.

Canada Subscriptions: Publications mail agreement number 40028967. Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill, ON L4B 4R6. You will be sent your first issue within six weeks after LE Publications, Inc. receives your subscription fee. Periodicals Postage paid at Fort Lauderdale, FL and at additional mailing offices. POSTMASTER: Send address changes to Life Extension, P.O. Box 407198, Ft. Lauderdale, Florida 33340-7198, USA. Printed in USA. The articles in this magazine are intended for informational purposes only. They are not intended to replace the attention or advice of a physician or other health-care professional. 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.
ZINC ACETATE LOZENGES

FOR WINTER SEASON SUPPORT

Zinc stimulates the activity of about 300 enzymes and fortifies the immune system. Taking the best zinc lozenge is important for maintaining the body's natural defense system during the cold season—and throughout the year.

Enhanced Zinc Lozenges is a special "ionic formula" that delivers on the original promise of seasonal immune support and comes in natural peppermint flavor.

Zinc Lozenges
Item #01961 • 30 vegetarian lozenges

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$12</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$6 each</td>
</tr>
</tbody>
</table>

To order Enhanced Zinc Lozenges, call 1-800-544-4440 or visit www.LifeExtension.com

Non-GMO

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.
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. Bezek, 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 microsurgical research and training lab at Southern Baptist Hospital in New Orleans, LA, and currently practices in Sun Valley, ID.

William Davis, MD, is a preventive cardiologist and author of Wheat Belly: Lose the Wheat, Lose the Weight and Find Your Path Back to Health. He is also medical director of the online heart disease prevention and reversal program, Track Your Plaque (www.trackyourplaque.com).

Martin Dayton, MD, DO, practices at the Sunny Isles Medical Center in North Miami Beach, FL. His focus is on nutrition, aging, chelation therapy, holistic medicine, and oxidative medicine.

John DeLuca, MD, DC, is a 2005 graduate of St. George’s University School of Medicine. He completed his internal medicine residency at Monmouth Medical Center in Long Branch, NJ, in 2008 and is board-certified by the American Board of Internal Medicine. Dr. DeLuca is a Diplomate of the American Academy of Anti-Aging Medicine and has obtained certifications in hyperbaric medicine, pain management, nutrition, strength and conditioning, and manipulation under anesthesia.

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. Frattellone, MD, RH, is the founder and executive medical director of Frattellone 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 Benememta Universidad Autonoma De Puebla, Mexico, as a professor of cellular hemapoetic studies.

Gary Goldfaden, MD, is a clinical dermatologist and a lifetime member of the American Academy of Dermatology. He is the founder of Academy Dermatology of Hollywood, FL, and COSMESIS Skin Care.

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

Garry F. Gordon, MD, DO, is a Payson, AZ-based researcher of alternative approaches to medical problems that are unresponsive to traditional therapies. He is president of the International College of Advanced Longevity Medicine.

Richard Heifetz, MD, is a board-certified anesthesiologist in Santa Rosa, CA, specializing in the delivery of anesthesia for office-based plastic/cosmetic surgery, chelation therapy, and pain management.

Roberto Marassi, 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, of Montepetrolone Medical Center, Milan, Italy, is a gastroenterologist and nutrigenomics expert with extensive international university experience. He is also a consulting professor at the WHO-affiliated Center for Biotech & Traditional Medicine, University of Milano, Italy and the Rome, res. professor, Human Nutrition Dept, TWU, USA. He is the author of over 130 papers and 400 congress lectures.

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

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

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, an internist and a board-certified anti-aging physician, practices integrative medicine from a human ecology perspective with emphasis on personalized brain health, biomarkers, genomics and total health optimization. He serves as the Medical Director of Integrative Longevity Institute of Virginia, a 501(c)3 Non-Profit Medical Research Institute. He also collaborates on education and research for Hampton Roads Hyperbaric Therapy.

Ross Pelton, RPh, PhD, CCN, is director of nutrition and anti-aging research for Intradermic, 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 staff of Pacific Alliance Medical Center, Los Angeles, and other area hospitals.

Michael R. Rose, MD, a board-certified ophthalmologist with the Rose Eye Medical Group in Los Angeles, CA, is on the staff 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. He is 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.
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 anti-cancer 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.

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.

Frank Eichhorn, 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 works 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 hypothermia, 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), FRCPed., 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 bioidal estrogens and DHEA in daily medical practice. He has authored or co-authored 14 books, selling over 1.5 million copies.

Xiaoxi Wei, PhD, is a chemist expert in supramolecular assembly and development of synthetic transmembrane nanoropes with distinguished selectivity via biomimetic nanoscience. She has expertise in ion channel function and characterization. She founded XTherma Inc., a company developing a radical new highway towards nontoxic, hyper-effective antifreeze agents to fight unwanted ice formation in regenerative medicine and reduce mechanical icing.
Save $$$ on your supplements with Premier

There may be no better consumer value than our Premier Rewards program. For $49.95, you get

- DOUBLE REWARDS
- FREE SHIPPING
- INSTANT BONUS

- 4% BACK
- $50 BONUS
- UNLIMITED
- PAYS FOR ITSELF

Valuable Rewards Dollars

When combined with huge discounts available with our VIP AutoShip program, you can obtain the most advanced nutrient formulas at prices substantially below retail.

To enroll in this money-saving program, just call us (24 hours) at 1-855-813-9005 or log on to LifeExtension.com/YourPremier

Join Premier Today!
Just $49.95 | $59.95 for international customers

Mention code YRX626A
Will Magnesium Become the Next Vitamin D?

Vitamin D has emerged as a nutrient with astonishing value in disease prevention. Its low cost enables virtually everyone to supplement with enough potency to obtain broad-spectrum benefits.

Magnesium has similar attributes since it provides robust health effects, costs very little, and most Americans don’t get enough.

The best way to summarize vitamin D is that people who are deficient suffer more degenerative illness and premature death. The same holds true for magnesium.

Scientists recognize magnesium mostly as it relates to protection against cardiovascular disorders. Higher magnesium intake is associated with reduced risks of sudden cardiac death,1-3 stroke,4-6 type II diabetes,7-9 asthma,10 metabolic syndrome,11,12 heart disease,13,14 hypertension,15-19 and osteoporosis.20,21

What few publications discuss are findings showing cancer risk reductions in those who ingest higher amounts of magnesium primarily in dietary supplements. Other studies show colon cancer risk reductions in response to higher magnesium intake.

The totality of evidence supporting magnesium’s systemic benefits may soon transform this mineral into the next vitamin D as far as widespread public use is concerned.

This is great news for Americans, who face a phalanx of degenerative disorders that magnesium has been shown to protect against. It’s regrettable that it has taken so long for this realization to manifest.
Before the sun sets today, about 145 Americans will learn they have pancreatic cancer. It will likely be the worst day of their lives.

There are no “good” treatment options. The newly diagnosed cancer patient faces a litany of “bad” choices that are unlikely to be curative, but will inflict horrific side effects.

In recognition of lack of curative therapies, Life Extension Foundation is funding clinical studies aimed at identifying better treatments for this malignancy that kills more than 40,000 Americans every year.

Until a treatment breakthrough emerges, the best way to avoid becoming a casualty of pancreatic cancer is to not develop it in the first place.

Diabetics at Higher Risk for Pancreatic Cancer

A high percentage of pancreatic cancer patients also have type II diabetes. Research has shown that about 80% of pancreatic cancer patients had diabetes or glucose intolerance upon their cancer diagnosis.

These findings support current research showing elevated cancer risks in people with higher blood glucose levels. In response to excess glucose, more insulin is secreted, which in turn fuels growth of malignant cells.

An interesting finding we reported several years ago showed that type II diabetics that used the drug metformin had a 62% lower pancreatic cancer risk compared to those who had not taken the drug.

One of metformin’s properties is to improve insulin sensitivity by activating a cell-energy enzyme, AMPK.

The risk of contracting type II diabetes is lower in those with higher intakes of magnesium. A meta-analysis of human studies found that for every 100 mg increase in magnesium intake, risk of developing type II diabetes decreased by 15%.

This understanding has led researchers to investigate whether people who consume more magnesium have lower pancreatic cancer incidence.

A landmark study meticulously evaluated data from a large group of adults and found that a modest increase in assessed magnesium intake from a combination of diet and supplements resulted in profound reductions in pancreatic cancer risk.

What struck us about this study’s findings is that it did not require a large amount of additional magnesium to produce a meaningful reduction in pancreatic cancer risk.

Researchers found that pancreatic cancer risk increased by 24% for every 100 mg decrease in magnesium intake below the recommended daily allowance (RDA). For example, an individual with a daily magnesium intake of 200 mg has a 24% increased risk of pancreatic cancer compared to a person who ingests 300 mg a day. Both of these intakes (200 mg and 300 mg a day) of magnesium are considered deficient even by government standards.
This study, published in late 2015, evaluated data from the **VItamins And Lifestyle** (VITAL) trial involving more than 66,000 men and women aged 50-76 years who were followed for an eight-year period. The subjects were divided into the following three groups based upon their magnesium intake:

1. **Optimal Intake** - Defined as ingesting greater or equal to **100%** of the government RDA for magnesium (420 mg a day for males and 320 mg a day for females)

2. **Sub-optimal Intake** - Daily intake of **75%** to **99%** of the government RDA for magnesium

3. **Deficient Intake** - Less than **75%** of the government RDA for magnesium (less than 315 mg a day for males and less than 240 mg a day for females)

Those who ingested **75%-99%** of the government's RDA for magnesium (sub-optimal intake) had a **42%** greater risk of pancreatic cancer incidence compared to those whose intake of magnesium was equal to or greater than the government's (optimal intake) RDA.

When analyzing those who met or exceeded the government's RDA for total magnesium intake, only those who took dietary supplements containing magnesium were able to consistently achieve the benefits.

This led the authors to state that to gain the benefit of magnesium intake… dietary magnesium intake alone may not be sufficient.”

What’s striking about these findings is that the amount of added magnesium needed to meet the government’s RDA was exceedingly small. For most people, taking one magnesium capsule a day, or obtaining it in a scientifically formulated multinutrient formula is all that is needed to produce this robust preventive effect against pancreatic cancer.

This and other studies you’re about to learn about are why we think that magnesium supplementation is destined to become as prevalent as vitamin D is today.

### Prior Studies on Magnesium and Pancreatic Cancer

Previous studies sought to establish a link between magnesium ingestion and pancreatic cancer. Ascertaining the precise amount of magnesium ingested was challenging due to variability of magnesium content of food/water.

### Urgent Need for Widespread Magnesium Supplementation

In the recent analysis, the researchers found that the beneficial relationship between magnesium intake and the incidence of pancreatic cancer disappeared in study volunteers not using supplements.

The researchers hypothesized that this lack of association was likely due to both a reduced magnesium dose and narrower range of achieved dietary magnesium intake, to which the researchers reasoned: “…to gain the benefit of magnesium intake… dietary magnesium intake alone may not be sufficient.”

Most striking was the calculation that only a few hundred extra milligrams of magnesium taken each day markedly reduced pancreatic cancer risk. This small amount is readily available with low-cost supplements.
Two initial case-control studies showed an association between higher magnesium intake and lower pancreatic cancer rates,\textsuperscript{36,37} whereas a similar case-control study found no association.\textsuperscript{38} Other studies found a reduced rate of pancreatic cancer only in heavier men, which is significant because obesity is a pancreatic cancer risk factor.\textsuperscript{39} One of these studies published in 2010 showed a reduction in pancreatic cancer in men with a body mass index (BMI) of 25 kg/m\textsuperscript{2} or more who consumed higher amounts of magnesium.\textsuperscript{40} This study showed a 33\% reduced pancreatic cancer risk in overweight men whose average daily magnesium intake was 423 mg compared to 281 mg.\textsuperscript{40} Another study showed that for each 100 mg increase in magnesium intake amongst overweight men, there was a 21\% decreased risk.\textsuperscript{39}

Once again, a relatively small amount of magnesium supplementation would have placed all these men into the higher protective category.

Since the majority of aging men are overweight, this finding has significant public health implications.\textsuperscript{41} These findings corroborate the 2015 report showing only a small increase in ingested magnesium significantly reduces pancreatic cancer risk.

Colorectal cancer is expected to be diagnosed in almost 135,000 Americans and to cause about 50,000 deaths this year.\textsuperscript{72} It is less feared than pancreatic cancer because treatments are less mutilating and cure rates far higher.

A large study evaluating Japanese men found that those with the highest dietary intake of magnesium were over 50\% less likely to contract colon cancer.\textsuperscript{22}

A study emanating from the Netherlands showed that for each extra 100 mg increase in magnesium intake, there was a 19\% reduction in colorectal adenomas (precursors to colon tumors).\textsuperscript{24} The second part of this study found
that for each additional 100 mg of magnesium, there was a 12% reduction in colorectal cancer risk. Again, we’re seeing a relatively modest increase in magnesium ingestion inducing meaningful cancer risk reductions.

Magnesium plays essential roles in regulating genome stability,73,74 cell signaling,75,76 insulin sensitivity,77 systemic inflammation,78-81 and DNA maintenance and repair.73,74 It is therefore not surprising that low intake of magnesium is associated with increased risk of certain cancers.

**Food Sources of Magnesium Are Not Reliable**

A website for medical professionals lists magnesium-rich foods as "Leafy vegetables, nuts, legumes, whole grains, fruits and fish."82

While these fit into the “healthy food” category, one cannot reliably expect to obtain consistent and sufficient amounts of magnesium by ingesting them.

Magnesium content in vegetables has seen huge declines since pre-1950 levels.83-87 Typical grain refining processes for bread and pasta remove 80%-95% of total magnesium.83

There needs to be sufficient soil concentration of magnesium for plants to absorb it in the first place. In some instances, soils have too much potassium which competes for absorption of magnesium into the plant.

There are certain bottled waters that naturally contain high amounts of magnesium, but these are rare on the commercial marketplace.88

**Urgent Need for Magnesium Supplementation**

*Life Extension* first advocated for higher-dose magnesium supplementation in 1981. Back in those days, calcium supplements were very popular, but few of them contained enough magnesium. Overlooked was the vital role that magnesium played in overall health including maintaining bone density.20,21,89

Most people today associate magnesium as a mineral that reduces cardiovascular risk. A wealth of published scientific data supports this.

With accumulating data showing that magnesium can slash risks of common cancers, we think the use of magnesium supplements will soon rise to the level of “must have” nutrients like vitamin D.

Similar to vitamin D, magnesium costs so little that it is readily affordable by almost everyone, which has huge implications in improving public health.

This month’s issue contains an article that pays tribute to an early pioneer who advocated for higher magnesium ingestion. We also provide an update of the latest findings demonstrating the vital importance of obtaining sufficient magnesium to diminish risk of degenerative illness.

For longer life,

William Faloon
References


Your body is under constant attack from toxins that cause cellular DNA damage and accelerate normal aging processes.

Each 725 mg capsule of Mega Green Tea Extract is standardized to 98% polyphenols that provide 326 mg of EGCG to:

- Protect against DNA damage and oxidative stress¹
- Support healthy blood sugar levels²
- Enhance heart health³
- Boost brain function⁴
- Support strong bones⁵
- Maintain healthy cholesterol levels already within normal range⁶

Each cost-effective bottle lasts over three months!

References

Note: EGCG is the acronym for epigallocatechin gallate, which is the polyphenol in green tea that has demonstrated the most robust health benefits.

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

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.
The new Extend-Release Magnesium provides an immediate release of magnesium citrate to the stomach and a slow 6-hour release of magnesium oxide for optimal intestinal absorption.

According to data from the National Health and Nutrition Examination Survey of 2005-2006, most Americans fail to consume the estimated average requirement of magnesium from food alone.*

Each capsule of the new Extend-Release Magnesium supplies 250 mg of elemental magnesium designed for sustainable absorption into your bloodstream over a 6-hour period.

Those taking a multi-nutrient supplement that provides at least 100 mg of elemental magnesium may need only one Extend-Release Magnesium capsule daily.


Non-GMO

ZümXR® is a registered trademark and protected by patents.

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

To order Extend-Release Magnesium, 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 supplementing with saffron showed an improvement in vision as measured by them seeing an average of two additional lines on the eye chart commonly used by doctors to test vision.\(^1\)

**MacuGuard\textsuperscript{®} Ocular Support** provides lutein, trans-zeaxanthin, and meso-zeaxanthin to help maintain structural integrity of the macula.\(^2\)\(^4\)

Alpha-carotene has been added based on new evidence that it helps support the macular pigment.\(^2\)

This formula also includes the optimal dose of saffron along with cyanidin-3-glucoside to support healthy vision.\(^3\)\(^5\)

Just one daily softgel of the new **MacuGuard\textsuperscript{®} Ocular Support** formula provides:

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saffron</td>
<td>20 mg</td>
</tr>
<tr>
<td>Alpha-carotene</td>
<td>1.24 mg</td>
</tr>
<tr>
<td>Lutein</td>
<td>10 mg</td>
</tr>
<tr>
<td>Trans-Zeaxanthin/Meso-zeaxanthin</td>
<td>4 mg</td>
</tr>
<tr>
<td>Cyanidin-3-glucoside</td>
<td>2.2 mg</td>
</tr>
</tbody>
</table>

**MacuGuard\textsuperscript{®} Ocular Support**

<table>
<thead>
<tr>
<th>Item #01992</th>
<th>60 softgels</th>
<th>Non-GMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Price</td>
<td>$25</td>
<td></td>
</tr>
<tr>
<td>Your Price</td>
<td>$18.75</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$25</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$17.50 each</td>
</tr>
</tbody>
</table>

Each bottle lasts for two months.

**MacuGuard\textsuperscript{®} Ocular Support** is also available with Astaxanthin. Retail price is $44. If you buy four bottles, the price is reduced to $30 per bottle. Item #01993).

Many people already obtain astaxanthin by taking Astaxanthin with Phospholipids (Item #01923), Super Omega-3 Plus EPA/DHA with Sesame Lignans, Olive Extract, Krill & Astaxanthin (Item #01988), and Krill Healthy Joint Formula (Item #01600).

Avoid use during pregnancy.

**References**
Coffee Drinkers Have Longer Telomeres

An article in the Journal of Nutrition reveals that women who drink more coffee have longer white blood cell telomeres—protective caps at the ends of chromosomes whose length is considered a biomarker of aging.* Shorter telomeres have been associated with an increased risk of cardiovascular disease and other age-related conditions.

The study included participants in the Nurses’ Health Study, which enrolled 121,700 female nurses beginning in 1976. The investigation was limited to 4,780 women with available data concerning coffee and caffeine intake and white blood cell telomere measurement.

In comparison with subjects who reported no coffee intake, women who consumed two cups of coffee per day had a 29% higher chance of having average telomere length that was above the median of the group. For those who drank three cups or more daily, the odds were 36% higher.

Editor’s Note: When decaffeinated and regular coffee were separately examined, only regular coffee’s effects were found to be significant. However, analysis of the association between caffeine from all dietary sources and telomere length suggests that compounds other than caffeine may be responsible for the association.


Omega-3 Related to Shorter Hospital Stays

Researchers have found that cardiac patients who ingested omega-3 supplements before undergoing surgery had shortened hospital stays and fewer postoperative heart arrhythmias compared with patients who received placebos.*

The meta-analysis, published in Clinical Nutrition, was based on a total of 1,038 subjects in 11 randomized controlled trials.

The researchers concluded that the reduced hospital stays for the omega-3 group—up to 2.4 days shorter—appeared to be due to a reduction in postoperative atrial fibrillation, a rapid and irregular heartbeat.

Study co-author Dr. Pascal L. Langlois said, “Omega-3s are well known for their benefits on cardiovascular health, including a reduced risk of arrhythmias and reduced mortality in patients with recent myocardial infarction or cardiac failure. Furthermore, they exhibit interesting anti-inflammatory properties and modulate the immune system.”

Editor’s Note: Besides lending support to an already large body of research supporting the cardiac benefits of omega-3, this study suggests a concurrent reduction in overall healthcare costs and hospital utilization.

* Clin Nutr. 2016 May 27.
Insufficient Vitamin D Levels and Aggressive Prostate Cancer

The *Journal of Clinical Oncology* published findings from Northwestern University of an association between insufficient serum vitamin D levels and aggressive prostate cancer.*

The researchers utilized data from a larger study involving 1,760 subjects in the Chicago area, 190 of whom had undergone radical prostatectomies. Blood samples collected prior to surgery were analyzed for serum 25-hydroxyvitamin D.

Eighty-seven men had indications of aggressive disease at the time of their surgeries. Having an insufficient vitamin D level of less than 30 ng/mL was associated with a 2.64 times greater adjusted risk of adverse pathology compared with higher levels of the vitamin.

The findings could aid in deciding when patients would be appropriate candidates for active surveillance (aka watchful waiting), an option for those with nonaggressive disease.

*J Clin Oncol. 2016 Feb 22.*

Zinc Linked with Better Glucose Handling in Prediabetics

A trial reported in *Diabetes Research and Clinical Practice* found that supplementing with zinc improved the ability of prediabetic men and women to handle glucose.*

The trial included 55 prediabetic patients residing in Bangladesh, one of the most zinc-deficient regions in the world. Subjects received 30 mg of zinc sulfate or a placebo daily for six months. Fasting glucose, pancreatic beta cell function, insulin sensitivity and resistance, serum zinc, and lipids were measured at the beginning and end of the study.

At the end of the treatment period, participants who received zinc had lower fasting glucose compared to the placebo group as well as in comparison with levels measured in their own group at the beginning of the study. Beta cell function, insulin sensitivity and insulin resistance also improved among those who received zinc.

Calorie Restriction Shown to Benefit the Non-Obese

The *JAMA Network Journals* reported on May 2, 2016, that a new study from the Pennington Biomedical Research Center in Baton Rouge, Louisiana, found that calorie restriction in non-obese adults is linked to a number of health benefits.*

The team, led by Corby K. Martin, PhD, focused on a variety of negative health effects that had been thought to be related to calorie restriction. The clinical trial looked at 218 subjects, about 30% men and 70% women. All participants had a body mass index of 22 to 28. About two-thirds of the subjects had their caloric intake restricted by 25% for two years, while the remainder ate as they liked. The results showed that the calorie-restricted group lost significant weight—16.7 pounds on average. More interestingly, compared with the control group, the calorie-restricted group had improved sleep after one year, as well as reduced tension, improved mood, increased energy and improved sex drive.

**Editor’s Note:** The study’s authors conclude that “calorie restriction among primarily overweight and obese persons has been found to improve QOL (quality of life), sleep and sexual function, and the results of the present study indicate that two years of CR (calorie restriction) is unlikely to negatively affect these factors in healthy adults; rather, CR is likely to provide some improvement.”

*JAMA Intern Med. 2016 May.*

---

**Study Demonstrates Cancer-Fighting Properties of Aspirin**

In a new study published in *eLife*, scientists from the Gladstone Institutes identified a new mechanism by which aspirin could fight inflammation and cancer.†

The researchers discovered that salicylic acid, a major compound in aspirin, and diflunisal, an analgesic that’s derived from salicylic acid, suppress two key proteins, p300 and CREB-binding protein. These epigenetic regulators are in charge of controlling levels of proteins that prompt inflammation or are instrumental in cell growth, both of which are related to the promotion of cancer.

The study could have significant clinical implications, as it represents the first solid evidence that CREB-binding protein and p300 can be targeted by drugs.

“Salicylic acid is one of the oldest drugs on the planet, dating back to the Egyptians and the Greeks, but we’re still discovering new things about it,” said senior author Eric Verdin, MD.

**Editor’s Note:** Study coauthor Stephen D. Nimer, MD, stated, “We have conducted a clinical trial of salicylic acid in patients with hematologic cancers and found it to be safe. Thus, this collaborative effort to develop novel epigenetic therapies is an important step in our journey to find more effective treatment for leukemia patients.”

*eLife. 2016 May 31.*

---

**High Triglycerides Tied to Fracture Risk**

A new study suggests that as women with elevated levels of triglycerides approach menopause, they may have an increased risk of bone fractures.*

The study, published in the *Journal of Clinical Endocrinology and Metabolism*, followed over 2,000 premenopausal women who had never had any broken bones. After nearly 15 years, researchers found that women with high triglycerides suffered fractures more than twice as often as others. And an increase of 50 mg/dL in blood triglycerides found during an annual exam was associated with a 31% increased risk of fractures within the next two to five years.

Levels of triglycerides increase as women go through menopause, but researchers aren’t sure if the rise in blood fats has a detrimental effect on bone strength. If so, it could explain the higher risk of fractures.

“This study suggests that women entering midlife should take action to lower elevated triglycerides,” said senior study author Dr. Jennifer Lee.

**Editor’s Note:** Naila Khalil, a community health researcher at Wright State University in Dayton, Ohio, suggests women can lower their risk of fractures by exercising regularly and getting adequate amounts of vitamin D and calcium.

*J Clin Endocrinol Metab. 2016 Jun 13.*

---

*IN THE NEWS*

Ashwagandha Associated with Improved Sexual Function in Females

An article in *BioMed Research International* reveals the outcome of a study that found improvements in sexual function among women who...
New Laser Treatment for Prostate Cancer

Options for treating prostate cancer may soon expand to include a laser technique, based on a recent study published in the Journal of Neurology.*

Researchers at the University of California, Los Angeles, have discovered that a laser-powered tool can safely treat tumors in patients with intermediate-risk prostate cancer. The process, called focal laser ablation, involves the insertion of a laser fiber into cancerous tissue, guided by magnetic resonance imaging. Laser-generated heat destroys the tumor.

No serious adverse effects in urinary or sexual function were found for a period of six months following the procedure.

A follow-up study presented at a meeting of the American Urology Association demonstrated the potential for the new technique to be performed in clinics using a device called the Artemis, which performs real-time imaging using a fusion of both magnetic resonance imaging and ultrasound. The Artemis has previously been used just for biopsies rather than treatment.

Editor’s Note: “Our feeling was that if you can see prostate cancer using the fusion MRI and can put a needle in the spot to biopsy it, why not stick a laser fiber in the tumor the same way and kill it,” said study senior author Dr. Leonard Marks. “What we are doing with prostate cancer now is like using a sledgehammer to kill a flea.”


Soy Isoflavones May Lower Insulin, LDL

An article in the Journal of Clinical Endocrinology & Metabolism reveals a potential benefit of soy isoflavones for women with polycystic ovary syndrome—a disorder characterized by mildly elevated male hormones and insulin which is associated with weight gain, infertility, and a greater risk of diabetes and coronary heart disease.*

For 12 weeks in a randomized trial, 70 women aged 18 to 40 years with polycystic ovary syndrome were assigned to consume 50 mg per day of a soy isoflavone supplement or a placebo. Blood samples collected at the beginning and end of the study were analyzed for levels of hormones, lipids, and biomarkers of inflammation and insulin resistance.

At the end of the trial, participants who received soy isoflavones had lower insulin and markers of insulin resistance, free androgens, and serum triglycerides in comparison with those who received a placebo.

Editor’s Note: Participants also experienced an increase in plasma glutathione and a decrease in malondialdehyde, a marker of oxidative stress.


Doctors Misunderstand Cancer Risk of CT Scans

Many doctors and healthcare professionals aren’t fully aware of the cancer risk of CT scans for patients, according to a new study published in the Journal of Medical Imaging and Radiation Sciences.*

Researchers from the University of Saskatchewan surveyed medical professionals and found that 73% of doctors, 97% of radiologists, and 76% of technologists knew that a single abdominal-pelvic CT increases cancer risk. But while 48% of doctors, 78% of radiologists and 63% of technologists either accurately estimated or overestimated how the dose from a CT scan compares to the amount of radiation from a chest X-ray, many underestimated it. The radiation exposure from one CT scan is equal to about 100 to 250 chest X-rays.

The survey also found that, while ultrasounds don’t use ionizing radiation, 11% of physicians think that they do.

Editor’s Note: Lead researcher Dr. David Leswick observed that, although the risk from radiation exposure as used in medical imaging procedures is small, “it is real, as evidenced from atomic bomb survivors and nuclear industry workers showing significantly increased risk of malignancy after exposure to doses in the range of diagnostic CT.” The risk of a fatal malignancy may be as high as one in 1,000 for an exposure that is the approximate dose of an abdominal-pelvic CT.

*JMIRS. 2016, June 22.
To order either of the Rich Rewards® Antioxidant Coffees call 1-800-544-4440 or visit www.LifeExtension.com

Rich Rewards® Breakfast Blend
Item #01609 • 12 oz bag

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bag $13</td>
<td>$9.75</td>
</tr>
</tbody>
</table>

Rich Rewards® Decaffeinated Roast
Item #01610 • 12 oz bag

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bag $14</td>
<td>$10.50</td>
</tr>
</tbody>
</table>

Rich Rewards® Polyphenol-Retained Coffee

Most of a coffee bean’s polyphenol content is destroyed during the roasting process. Among the most beneficial of these polyphenols is chlorogenic acid, a potent inhibitor of the glucose-6-phosphatase enzyme that stimulates excess gluconeogenesis.

A Patented Organic Roast
Life Extension’s Rich Rewards® Breakfast Blend and Decaffeinated Roast are made using a patented, 100% natural process called HealthyRoast®. Rich Rewards® consists of 100% USDA certified organic arabica coffee beans.

Savory Taste Without Stomach Upset
The HealthyRoast® process also preserves special, naturally occurring compounds in coffee that soothe your stomach.

Tasty Decaf
With Rich Rewards® Decaffeinated Roast, you can limit your caffeine intake without compromising on flavor. The caffeine is removed through a chemical-free water process. It delivers the full flavor, aroma, and body of the arabica bean. Rich Rewards® Breakfast Blend contains up to 87% more chlorogenic acid than conventional caffeinated coffees. Rich Rewards® Decaffeinated Roast contains up to 187% more chlorogenic acid than conventional decaffeinated coffees.

Comparison of Conventional Coffee to Life Extension’s Rich Rewards® Blend

<table>
<thead>
<tr>
<th>Chlorogenic Acid</th>
<th>Chlorogenic Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional Coffee</td>
<td>Rich Rewards® Coffee Blend</td>
</tr>
<tr>
<td>(Caffeinated)</td>
<td>(Caffeinated)</td>
</tr>
<tr>
<td>92 mg</td>
<td>172 mg</td>
</tr>
<tr>
<td>Conventional Coffee</td>
<td>Rich Rewards® Coffee Blend</td>
</tr>
<tr>
<td>(Decaffeinated)</td>
<td>(Decaffeinated)</td>
</tr>
<tr>
<td>46 mg</td>
<td>132 mg</td>
</tr>
</tbody>
</table>

* US Patent 6,723,368.
Find the Formula That’s Right for You!

A simple, cost-effective blood test can help you identify your individual vitamin D needs. Life Extension®’s huge selection of vitamin D supplements allows you to customize your dosage.

To order Vitamin D supplements, call 1-800-544-4440 or visit www.LifeExtension.com

<table>
<thead>
<tr>
<th>Vitamin D3 • 1,000 IU</th>
<th>Item #01751 • 250 softgels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal for smaller individuals who also obtain 2,000-3,000 IUs in a multi-formula</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td><strong>Your Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$12.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$8.44 each</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin D3 • 5,000 IU</th>
<th>Item #01713 • 60 softgels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal for most people who take a multi-formula that contains 2,000-3,000 IUs of vitamin D</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td><strong>Your Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$10.00</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$6.50 each</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin D3 • 5,000 IU With Sea Iodine™</th>
<th>Item #01758 • 60 capsules</th>
</tr>
</thead>
<tbody>
<tr>
<td>With 1,000 mcg iodine, this is ideal for those who may be iodine-deficient due to a salt-restricted diet</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td><strong>Your Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$14.00</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$9.38 each</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin D3 • 7,000 IU</th>
<th>Item #01718 • 60 softgels</th>
</tr>
</thead>
<tbody>
<tr>
<td>For individuals who need higher levels, including those who weigh over 180 pounds</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td><strong>Your Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$14.00</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$9.45 each</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vitamin D3 • 2,000 IU (Natural Mint Flavor)</th>
<th>Item #01732 • 1 ounce</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great for traveling or for those who have trouble swallowing a softgel or capsule (Also available without mint. Item #00864)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td><strong>Your Price</strong></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$28.00</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$18.75 each</td>
</tr>
</tbody>
</table>

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

* If you have a thyroid condition or are taking anti-thyroid medications, do not use without consulting your health care 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.
IT’S SO PURE... IT’LL TOUCH YOUR HEART

Highly Purified Fish Oil From Wild-Caught Alaska Pollock For A Strong Healthy Heart.

Item #01982 • 120 softgels

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-bottle</td>
<td>$32.00</td>
<td>$24.00</td>
</tr>
<tr>
<td>4-bottle</td>
<td></td>
<td>$21.00</td>
</tr>
</tbody>
</table>

NON-GMO

Call 1-800-544-4440 toll-free • www.LifeExtension.com

AlaskOmega® is a registered trademark of Organic Technologies. IFOS™ certification mark is a registered trademark of Nutraceutics Diagnostics, Inc. These products have been tested to the quality and purity standards of the IFOS™ program conducted at Nutraceutics Diagnostics, Inc. For a complete list of ingredients, dosage and use, important cautions and references, go to 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.
In year 2000, Life Extension® became the first organization to introduce the concept of high-dose carnosine supplementation. Before then, carnosine was available only in low doses (50 mg) that did not provide any benefit because enzymes in the blood rapidly degrade it.

There was compelling evidence 16 years ago to recommend 1,000 mg a day of supplemental carnosine. What’s transpired since then is nothing short of a major scientific advance. New human studies are demonstrating broad-spectrum properties of carnosine that exceed our original expectations.

For cost-conscious consumers, the price of carnosine has come down as more efficient ways have been discovered to produce it.

This article reveals new findings demonstrating the longevity potential when higher carnosine doses are utilized. This is especially important for those with less-than-optimal blood glucose levels, which happens to be most aging humans.
NEW STUDIES VALIDATE AGE-DELAYING EFFECTS OF CARnosine

**Carnosine Protects Tissues**

Even at blood sugar levels considered “normal,” glycation tissue damage occurs throughout the body.\(^1\)

**Glycation** creates structure/function changes to blood vessels, skin, nerves, heart muscle and the brain. This leads to premature aging.\(^2,4\)

It is especially important to protect the body against even temporary glucose elevations such as those following meals. High **after-meal** glucose levels are strongly correlated with heart disease and other systemic risks.\(^5\)

Elevated blood glucose leads to reduced levels of **carnosine** in muscle tissue, especially prominent in those with type II diabetes.\(^6\) A human study evaluated the impact of carnosine supplementation on a group of obese adults at risk for developing diabetes and cardiovascular disease.\(^7\) Subjects were randomly assigned to receive very high-dose carnosine, 2,000 mg/day, or a placebo, for 12 weeks.

In order to determine the effects of carnosine, researchers used models that quantify insulin resistance and insulin secretion (beta-cell function).\(^8,9\)

After 12 weeks, both groups saw increases in insulin resistance and insulin secretion, but the increases were smaller in the carnosine group. **Insulin resistance** in the **placebo** group increased 3.8-fold more than the **carnosine** group.

In order to overcome cellular **insulin resistance**, the pancreas responds by secreting lots of **insulin**. Numerous studies show excess insulin is highly undesirable, especially as it relates to **cancer**. In this study, placebo recipients increased insulin secretion by 36%, whereas the increase in carnosine recipients was only 3%.

Importantly, among subjects with impaired glucose tolerance (that is, those with “prediabetes,” or “borderline high” blood sugar), carnosine supplementation decreased blood **glucose** to nondiabetic levels two hours after a glucose tolerance test, while unsupplemented subjects remained significantly higher, at more than 160 mg/dL.

This study strongly supports the concept that **carnosine** supplementation can play a major role in preventing the development of type II diabetes and its multiple negative consequences.

These findings would hardly be surprising to scientists who have studied carnosine’s antidiabetic effects for years, and are familiar with its abilities to protect tissues from **glycation**.

**Carnosine Confers Systemic Protection**

Animal studies show that carnosine supplementation delays diabetes-induced deterioration of heart, liver, and kidney functions, lowering blood sugar and lipid levels, and reducing lipid oxidation.\(^10\) Carnosine also reduces levels of pro-inflammatory cytokines\(^10\) and glycation-indicative tissue damage in diabetic animals.\(^11\)

Laboratory studies show that carnosine, added to kidney cells in culture, can prevent the glucose-induced deposition of extracellular material that slows the kidney’s filtering and cleansing functions. This is a common cause of kidney failure in diabetics.\(^12\)

In the eye, carnosine supplementation delayed progression of cataracts, the clouding of the lens that can lead to blindness in diabetics, after just four weeks of supplementation.\(^11\) Similarly, supplementation with carnosine prevented the blood vessel damage that leads to another cause of glucose-induced blindness, diabetic retinopathy.\(^13\)

Elevated blood glucose damages cells in the immune system and in those involved in healing tissues, leading to delayed wound healing and even amputation in severe cases. But carnosine supplementation enhanced wound healing in diabetic rats through protection of cells against glucose-induced damage.\(^14\)

The impact of glycation is felt throughout the body, and is not restricted to just those with diabetes. Carnosine supplementation may protect tissues most vulnerable to glucose-induced damage, including the heart and the brain.
What You Need to Know

Carnosine Protects the Cardiovascular System

Carnosine has been found to prevent early oxidation of fats in the bloodstream, and reduces the resultant tissue damage and inflammatory responses in animal studies. A human study has now validated those findings in living patients.

Basing their work on the high levels of carnosine found in healthy heart muscle and on studies in people showing that carnosine improves exercise performance, researchers studied 50 patients with stable congestive heart failure. The goal was to determine if carnosine could improve exercise performance and quality of life in such patients.

Congestive heart failure results when an ailing heart cannot pump sufficient blood to meet the metabolic needs of tissues in the body. It can limit mobility and physical functioning, and severely impairs quality of life for its victims.

In the study, subjects were randomly assigned to receive standard congestive heart failure medical therapy alone, or with added carnosine, 500 mg/day over a 6-month period.

Whole-Body Protection with Carnosine

- Tying together type II diabetes, cardiovascular disease, and age-related brain dysfunction is our bodies’ chronic exposure to even mildly elevated glucose levels.
- Through the abnormal chemical reaction called glycation, glucose binds to protein molecules, impairing their function and triggering low-grade inflammation.
- These factors, in turn, predispose us to further glucose intolerance (and hence, type II diabetes), blood vessel damage (and hence, cardiovascular disease), and, eventually, brain cell destruction arising from both glycation and diseased blood vessels in the brain (hence, neurodegenerative diseases and stroke).
- Carnosine, composed of two amino acids, can intervene in this destructive cycle at its source, by both preventing sugar elevations, and protecting tissues against the resulting glycation.
- Human studies show that carnosine lowers blood sugar and insulin levels in people at risk for diabetes, enhances heart muscle function and life quality in congestive heart failure, and improves cognitive function.
- Animal and basic lab studies illustrate how carnosine achieves these results primarily through blocking oxidative and glycation-induced tissue damage.
- Carnosine is an outstanding means of providing comprehensive protection against glycation and its ill effects.
Carnosine is a **dipeptide**, a molecule composed of two amino acids, beta alanine and L-histidine, that is found naturally in human brain, nerve, muscle, and other energy-consuming tissues.\(^2,3,5\)

One of carnosine’s most important metabolic roles is to react with a variety of toxic molecules, including free radicals and those that develop following chronic exposure to high glucose levels.\(^3,3,5,6\)

For example, carnosine inhibits the deleterious reaction of glucose molecules to proteins (**glycosylation**), and prevents proteins from forming stiff **cross-linked** bonds that interfere with their function.\(^3,5,6\)

As a result, carnosine is capable of strongly opposing formation of the so-called **advanced glycation end products**, aptly called “AGEs,” that add to the glucose-induced protein damage seen throughout the bodies of diabetic patients.\(^3,3,5\)

But carnosine’s antiglycation actions don’t stop there.

---

**How Carnosine Works**

Studies show that carnosine can even protect cells and tissue against those toxic metabolic byproducts, including advanced glycation end products.\(^6\) One remarkable result of this in brain cells is the prevention of toxicity caused by **beta amyloid**, the “Alzheimer’s protein” that leads to brain cell destruction and, ultimately, dementia and death.\(^2,8\)

And, most recently, modulation of complex cellular regulators of aging and metabolism, of protein synthesis and breakdown, and of scavenging free radicals and products of glycation, have been added to carnosine’s antiaging repertoire of effects.\(^3,7,3,8\)

Historically, carnosine was among the earliest molecules shown to fight aging at the cellular level.\(^3,5-3,7\)

In fact, because of its multiple effects throughout the body, carnosine has been referred to as a “Drug against aging.”\(^3,6\) This is supported by the observation that carnosine, in lab studies, slows the shortening of **telomeres**, the strands of DNA at the ends of chromosomes that gradually shorten as aging proceeds.\(^3,9\)

---

Compared with the patients not taking carnosine, the supplemented group significantly improved their physical condition in a number of ways. Patients saw improvement in their quality-of-life scores, their 6-minute walking distance, their peak exercise workload, and their ability to deliver oxygen for use in their tissues during exercise.\(^1,6\)

Patients with congestive heart failure are among the most challenging to medically manage, and have a uniformly poor prognosis without complicated medication regimens. The finding that naturally-occurring carnosine has these dramatic effects in this population is an important milestone in our understanding of the disorder, and offers great hope for the future.

Numerous animal and basic science studies offer further insights into how carnosine benefits the heart and blood vessels.

Research has shown that carnosine inhibits formation of **advanced glycation end products (AGEs)**, the sugar-protein complexes that damage tissues and impair function. Carnosine also inhibits formation of **advanced lipoxidation end products**, while also rapidly neutralizing them when they form.\(^1,5,7,1,8\)

This is important, because advanced lipoxidation end products are oxygen-damaged fat molecules that can trigger inflammation and lay the foundation for the atherosclerotic plaques that damage blood vessels and impede blood flow, eventually resulting in a heart attack or stroke.\(^1,8,1,9\)

Studies show that carnosine inhibits formation of the lipid-filled inflammatory cells called “foam cells” that play a large role in the formation of atherosclerotic plaque.\(^2,0\) Furthermore, in an animal study, carnosine significantly prevented the development of the lipid abnormalities, high blood pressure, and kidney damage associated with cardiovascular diseases, and also preserved kidney function and prevented microscopic kidney damage related to hypertension.\(^1,7\)

Remarkably, carnosine not only lowers plasma triglycerides, but it also promotes the removal of damaged fats from atherosclerotic lesions and stabilizes those lesions against catastrophic rupture, which suggests that it might be useful in treating patients with known atherosclerosis.\(^1,8,2,1\)
Carnosine Supplementation Protects Brain Tissue

Brain cells are highly vulnerable to glycation-induced damage and to blood-flow impairments caused by atherosclerosis.

Carnosine helps prevent both of those problems. Scientists have now confirmed that carnosine supplementation has meaningful effects in the brain, especially in prevention of age-related disorders such as cognitive impairment and memory loss.

In a study of 51 adults 65 and older, subjects received a placebo or a carnosine-rich diet for 13 weeks. Compared with the placebo group, subjects receiving the carnosine-rich diet performed significantly better by the end of the study on a variety of cognitive function and physical fitness scores. Intriguingly, supplemented subjects also lost weight.

Carnosine supplementation has now shown promising results in a variety of brain disorders. For example, 12 weeks of carnosine supplementation (given as 500 mg, 1,000 mg, and 1,500 mg, increasing at 4 week intervals) lessened cognitive dysfunction in veterans suffering fatigue and pain from Gulf War Illness, a disorder thought to be related to toxic chemicals during that war.

A preliminary study of schizophrenic patients also showed that carnosine, 2,000 mg/day, could improve executive (decision-making) function, helping subjects perform faster and with improved strategy on tests of executive function.

A Japanese study of “chicken essence,” a traditional remedy for fatigue, rich in carnosine, found that supplementation, when administered to healthy men, improved cognitive performance following mental fatigue induced by a stressful task.

These studies clearly demonstrate that carnosine provides direct benefit for the brain. Lab and animal studies suggest how.

Healthy aging brains undergo changes in signaling molecules (neurotransmitters) and their receptors that impede normal thinking and information processing. Carnosine supplementation can restore normal production and breakdown of the important neurotransmitter serotonin, which may in turn explain its ability to prevent age-induced cognitive decline.

Neurodegenerative diseases such as Alzheimer’s and Parkinson’s can result from protein glycation and oxidative stress that leads to the accumulation of toxic abnormal proteins. Carnosine treatment prevented the damage to tiny brain vessels induced by a chemical used to model Parkinson’s disease in animals, and restored brain cells’ ability to utilize energy.

Stroke is another age-related threat to brain function and cognition. While there are few effective therapeutic options for treatment, carnosine may provide protection in the event of a stroke.

Studies show that carnosine protects brain tissue against the abrupt loss, followed by abrupt restoration, of oxygen-rich blood that occurs during a stroke and can induce widespread brain damage and death. Similar protection was seen against hemorrhagic stroke, another threat to older adults’ memory and cognitive function. Indeed, a collective analysis of multiple animal studies of ischemic stroke concluded that carnosine, either before or after the onset of a stroke, has robust effectiveness.

Such studies make a strong case for maintaining ample carnosine blood levels in anyone at elevated risk for stroke.
Summary

Every adult, diabetic or not, suffers continuous, low-grade tissue damage from chronic exposure to the glucose that is needed to fuel our cells.

As a result, protein and fat in our body becomes damaged, dysfunctional, and, in fact, toxic, leading to increased inflammation. This leads to increased risks for type II diabetes, cardiovascular disease, and brain damage from stroke and neurodegenerative diseases.

That means that protecting against glucose-induced damage requires more than keeping blood sugar levels down.

Carnosine is coming to the forefront as a supplement capable of reducing risk for blood sugar damage and its consequences—renal failure, neuropathy, cardiovascular disease, and loss of brain function.

Human studies now demonstrate that carnosine can lower blood sugar and insulin levels even in non-diabetic adults, and thereby forestall blood vessel and heart muscle damage, while also preventing cognitive decline.

Rarely can a nutrient produce so many good results, but that’s precisely what carnosine represents. It belongs in any thoughtful approach to a healthier aging process.

People taking 500 mg of carnosine twice a day along with certain B-vitamins are likely to obtain optimal anti-glycation benefits.

References


Beneficial bacteria called \textit{S. salivarius} K12 sustain throat health. Each \textit{FLORASSIST}® \textit{Throat Health} lozenge has \textbf{2 billion} colony-forming units of \textit{S. salivarius} K12 that:

- Maintain a balanced inflammatory response
- Help provide probiotic balance for throat health
- Maintain overall good health

\textbf{Support THROAT HEALTH with a Great-Tasting PROBIOTIC LOZENGE}

Naturally flavored with spearmint and cherry!

To order \textit{FLORASSIST}® \textit{Throat Health}, call \textbf{1-800-544-4440} or visit \textbf{www.LifeExtension.com}

\textit{FLORASSIST}® \textit{Throat Health}

\begin{tabular}{l|l|l}
\textbf{Retail Price} & \textbf{Your Price} \\
\hline
1 bottle & $20 & $15 \\
4 bottles & & $13.50 each \\
\end{tabular}

Contains milk. BLIS K12® is the registered trademark of BLIS Technologies Limited.

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.
Glycation damages our body’s proteins. The result is accelerated aging ranging from wrinkled skin to internal structural damage.

Super Carnosine provides the anti-glycation vitamin benfotiamine in addition to 500 mg of carnosine in each capsule. Carnosine inhibits glycation and may extend lifespan.¹²

A vegetable extract called luteolin is included to inhibit inflammatory factors that increase with normal aging.

Suggested dose is one capsule of Super Carnosine twice a day. Each bottle provides a 45-day supply.

Super Carnosine
Item #01687 • 90 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$62</td>
</tr>
<tr>
<td></td>
<td>$46.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$42 each</td>
</tr>
</tbody>
</table>

Note: Those who take the Mitochondrial Energy Optimizer with BioPQQ® are already consuming 1,000 mg of L-carnosine, along with benfotiamine, the fat-soluble form of vitamin B1.

References:

To order Super Carnosine, call 1-800-544-4440 or visit www.LifeExtension.com
L-Theanine helps control overstimulation of brain cells—promoting relaxation without diminished daytime alertness or other side effects.¹

The L-Theanine in this product:

- Inhibits excitatory stimuli at glutamate receptors in the brain²³
- Stimulates production of relaxing neurotransmitter GABA⁴
- Beneficially influences gene expression in brain areas related to memory and mood⁴
- Supports blood pressure control under stress for those within normal levels²

Non-GMO

References

Suntheanine® is a registered trademark of Taiyo International, Inc. Use of Suntheanine® is protected by U.S. Trademark Reg. No. 2548957.

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, mitochondrial decay, and loss of cellular structure/function. Mitochondrial Energy Optimizer provides the following nutrients to help neutralize these changes:

- **CARNOSINE:** As humans age, proteins in their bodies become damaged by glycation reactions. Glycation can lead to alterations of normal cell function. Carnosine is a powerful anti-glycating agent, and protects neurons against protein carbonyl species associated with normal aging.1-5

- **TAURINE:** Supports whole-body health and boosts new brain cell formation in the area of the brain connected to learning and memory.6

- **PQQ:** This micronutrient has been shown to trigger the growth of new mitochondria in aging cells!7 PQQ also activates genes involved in protecting the delicate structures within the mitochondria.8-11

- **LUTEOLIN:** Systemic inflammation is involved in most consequences of aging. Culprits behind inflammatory reactions are pro-inflammatory cytokines, such as interleukin-6 and tumor necrosis factor-alpha. Luteolin is a flavonoid that has been shown to help suppress these inflammatory cytokines.12-16

- **BENFOTIAMINE:** Benfotiamine blocks multiple destructive biochemical pathways, including AGEs’ formation pathway,17-21 which is induced by higher than desirable blood glucose levels.22-23

- **PYRIDOXAL 5’-PHOSPHATE:** Pyridoxal 5’-phosphate is the active form of vitamin B6 that has been shown to protect against both lipid and protein glycation reactions.20-21

- **R-LIPOIC ACID:** A microencapsulated Bio-Enhanced® R-lipoic acid facilitates youthful mitochondrial energy output while guarding against free radicals.28-32

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.
New discoveries are highlighting the roles that taurine plays in preserving the human mind. The importance of supporting brain taurine concentrations, which decline with aging, is rising to the forefront of cognitive science.\textsuperscript{1,2} Taurine supplementation can help to mitigate age-related losses of memory and learning functions.\textsuperscript{2}

In addition, recent studies show that this low-cost amino acid has brain-protective effects capable of preventing at least some of the cognitive changes associated with environmental toxins.
Taurine is one of the most abundant amino acids in our bodies. It plays special roles in the brain, where it meets many of the criteria for being a neurotransmitter (a molecule that transmits signals between brain cells).4,4

Scientists have recognized for a decade or more that taurine is critical for normal brain development.5,7

The basic science of taurine in the brain is rapidly emerging, demonstrating that it may prevent brain aging via the following mechanisms:

• Protects brain cells against environmental toxins including lead and organic pesticides8
• Prevents dysfunction of mitochondria within brain cells, thereby sustaining energy levels9,10
• Protects brain cells against excitotoxicity, the chemically stressful effects of overstimulated brain cells9
• Enhances the inhibitory systems driven by the “relaxing” neurotransmitter GABA, which directly opposes excitotoxic effects11
• Cooperates with other neurotransmitters to promote induction of long-term potentiation, which is the neurological process by which memories are formed and retained during learning2,12
• Reduces brain inflammatory processes that are active in production of neurodegenerative disorders such as Alzheimer’s and Parkinson’s diseases13
• Stimulates proliferation and new neuron formation to sustain learning and memory14-16
• Protects brain cells against destruction following a stroke17,18
• Attenuates damage caused by beta amyloid protein, a major contributing factor in Alzheimer’s disease10,19

Studies Reveal Taurine’s Neuroprotective Effects

Supplemental taurine has a major impact on the adult brain as well as the developing brain, with the ultimate result that the taurine-supplemented brain appears to age more slowly than it might otherwise.

Environmental toxins, long known to contribute to congenital brain defects seen in newborns, are now increasingly recognized as factors in causation of adult neurodegenerative disorders including Parkinson’s and Alzheimer’s disease.20-23

Taurine appears to play a role in protecting brain cells against a variety of environmental toxins.

A recent study showed that rats exposed to either a dangerous pesticide called CPF, lead acetate, or both toxins, showed biochemical damage leading to visible degeneration of brain tissue. When the animals were cotreated with taurine, those changes were prevented.8

These findings may have increased urgency as Americans discover just how our public infrastructure has failed to protect us against lead and other toxins in our water supplies.24

Taurine’s multiple mechanisms of action fight brain aging in other important ways, particularly by protecting the brain against internal age-accelerating forces.

For decades, scientists believed that adult brain cells could not reproduce, nor could new brain cells be generated afresh. Studies with taurine are turning that dogma on its head.
What You Need to Know

Taurine: Powerful Brain Protection

DECEMBER 2016

LIFE EXTENSION

39

Protect Aging Brains with Taurine

- Brain aging is not inevitable as new studies reveal that certain nutrients may have an age-decelerating effect.
- Taurine, an abundant amino acid in the human body, has many brain-protective properties, but taurine levels fall with advancing age.
- New studies show that taurine may play a major role in protecting the brain from exposure to toxic chemicals from water supplies and other environmental sources.
- Taurine stimulates new brain cell formation, providing a potential source for replacement of aging, damaged brain cells.
- Taurine supplementation may slow or prevent Alzheimer’s disease by effects on toxic beta amyloid proteins, and also by improving blood sugar control.
- Taurine prevents brain cell death following a stroke, helping to preserve neurological function.
- Taurine is likely to emerge as a major component of modern regimens aimed at slowing brain aging.

New brain cell growth was demonstrated in an exciting study released in 2015. Swiss scientists discovered that feeding middle-aged mice taurine could trigger rapid growth in populations of stem cells in the brain and greatly promote their subsequent differentiation into functioning adult brain cells. This effect had previously been shown in studies of cultured adult-mouse brain stem cells. And another 2015 study demonstrated that human-brain stem cells in culture underwent the same type of proliferation and specialization demonstrated in the animal studies.

Together, these studies mean that humans are likely to be able to stimulate new brain cell development, and foster rapid synaptic connections between them with taurine.

Neurodegenerative diseases rob aging adults of memory, function, and dignity. Taurine has significant favorable impact on the malformed and toxic proteins that accumulate in the aging brain, leading to Alzheimer's and Parkinson's diseases.
Taurine can prevent damage wrought on brain cells by the malformed Alzheimer’s-related protein called beta amyloid. That mechanism may have been at work in a recent mouse model study of Alzheimer’s, in which six weeks of taurine added to drinking water rescued mice from developing cognitive deficits. In this study taurine supplementation restored cognitive function to that of age-matched normal mice.

Elevated blood glucose and insulin resistance severely damage the brain. Some researchers now refer to Alzheimer’s as “type III diabetes.” In 2015, a study showed that taurine supplementation in mice could increase brain insulin receptors, an effect that might prove to be protective against the disease.

Ischemic strokes are the result of an abrupt reduction in blood flow to specific brain regions. Strokes not only cause immediate symptoms, but also contribute to accelerated brain aging over the longer term. Once again, a role for taurine supplementation is evident.

Taurine appears to protect brain cells from the oxidative stress induced during a stroke, and to slow subsequent brain cell death. Chronic cellular destruction contributes to neurological problems in stroke survivors, so preventing it is an important approach to mitigating stroke damage. A mouse study has shown that adding taurine to another emerging stroke drug improved performance on neurological tests, while the drug alone was ineffective.

Summary

Brains age for many reasons. Chronic toxin exposures, elevated blood sugar, accumulations of abnormal proteins and circulatory disruptions are known to accelerate brain aging.

Taurine is proving to have significant brain age-decelerating effects. Most recently, it has been shown to be protective against toxic exposures including lead and pesticides. It also inhibits beta amyloid formation associated with Alzheimer’s and helps regulate the brain’s control of glucose. Taurine also shows evidence of protection against the cognitive deficits induced by stroke.

And, in exciting news, taurine treatment enhanced formation of new brain cells.

Taurine is an ultra-low cost dietary supplement.

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

References


PROSTATE HEALTH
The best way to keep You in the picture.

Why let prostate health issues come between you and a healthy, happy life? We created Ultra Natural Prostate to help you maintain prostate health, so you can focus on what’s important. With over a dozen natural ingredients, this supplement promotes healthy prostate function, supports easier urination, inhibits inflammatory factors, and encourages natural division of prostate cells. Ultra Natural Prostate. The most comprehensive prostate health supplement.

Call 1-800-544-4440 toll-free • 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.
Taurine, a free amino acid, is “one of the most essential substances in the body.” But as we age, taurine levels decline.

Research has found that taurine can promote new cell formation in the area of the brain associated with learning and memory.

Taurine also enhances neurites, tiny projections that help brain cells communicate with each other.

Past research has also shown the ability of taurine to maintain and support:

- Cardiovascular health
- Insulin sensitivity
- Modulation of the immune system
- Regulation of the central nervous system
- Liver function
- Eye health
- Hearing function

References
The medical community does not yet understand the life-sustaining properties of magnesium.

In today’s world of high drug prices, it’s hard for physicians to conceive how an inexpensive mineral can provide such diverse health benefits.

Volumes of studies show that those with higher magnesium intake have sharply lower rates of hypertension\(^1\) and heart disease,\(^2\) fewer strokes,\(^3\) better blood sugar control,\(^4\) lower rates of kidney disease,\(^5\) less risk of cognitive decline,\(^6\) healthier bones and teeth,\(^7\) and even lower risk of migraine headache.\(^8\)

As if this weren’t enough, magnesium has also been linked to longevity.\(^9\)

The majority of Americans do not obtain enough magnesium from dietary sources.\(^{10}\) The result is an epidemic deficiency of a nutrient vital to protecting against degenerative aging.
Magnesium and Longevity

Magnesium is the fourth most abundant mineral in the human body. More than 300 enzymes require magnesium in order to function properly.11

Magnesium is crucial for converting chemical energy from food into useful energy for our bodies, and it has unique functions in regulating blood sugar, blood vessel health, heart function, and brain electrical activity. About half of our total body stores of magnesium are found in bone, which contributes to its strength and integrity.7,11

In fact, virtually every system in the body requires magnesium for its function.

Despite this fact, most of us are not getting enough magnesium to support good health. When humans got their water the old-fashioned way, from natural springs and wells, it was easy to get enough of this naturally-occurring mineral. But today’s world of municipal water supplies and bottled, purified water has left us woefully deficient.

Of people over age 70, 80% of men and 70% of women fail to get the estimated average requirement (350 mg/day for men and 265 mg/day for women) of magnesium from their diets.12,13 Compounding the problem, magnesium levels decline with age, and low magnesium levels are commonly seen in age-related disorders.6,14

To make matters still worse, many common drugs are known to deplete the body of magnesium, further contributing to low levels.15 Of these, the proton-pump inhibitors (PPIs)—drugs used by millions for heartburn relief—are the most notorious and widespread.16,17

Americans’ low magnesium intake—coupled with declining magnesium status with age—represent major obstacles to optimal health and longevity.11

In fact, the risk of death from any cause is significantly higher in people 65 and older who have lower levels of magnesium intake or low blood levels of magnesium.18,19 Basic lab studies show that low magnesium levels accelerate the aging process at the cellular level, increasing the number of senescent cells incapable of further replication or participation in healing.9,20

The good news is that ample magnesium intake and blood levels have been associated with reduced mortality. In one study, higher magnesium blood levels appeared to predict better outcomes among hospitalized patients who were critically ill. While 55% of those who had low blood levels when they were admitted died, that figure was only 35% in those with normal levels.21 (Optimal levels may have conferred greater-life-protective effects.)

Magnesium has been long-neglected by mainstream physicians, much like higher-dose vitamin D. Like vitamin D, however, magnesium is suddenly coming into its own as a result of a multitude of recent studies showing its ability to promote cardiovascular health,2 lower stroke risk,3 regulate blood sugar levels,4 help prevent osteoporosis,7 and more.8
What You Need to Know

The Benefits of Magnesium

- Magnesium is the fourth most common mineral in our bodies.
- Although it has been overlooked for years, magnesium is now emerging as a multi-targeted nutrient with myriad functions throughout the body.
- Magnesium is particularly important in electrically active cells, such as those in the brain, heart, muscles, and artery linings.
- 70% to 80% of Americans fail to meet the estimated average requirements of magnesium from their diet, leaving them vulnerable to disorders linked to its deficiency.
- Studies now show that ample magnesium intake is protective against a host of age-related disorders, including cardiovascular disease and stroke, diabetes, osteoporosis, and more.
- For reliable, consistent daily intake of magnesium, look for a supplement that offers both immediate and extended release.

Magnesium Promotes Cardiovascular Health

One of magnesium's most critical benefits is its ability to protect against the number one killer of Americans: cardiovascular disease. Studies show that people with the highest dietary intake of magnesium are 37% less likely to die from a sudden cardiac death.22 Even better, compared to those with the lowest intake, those with the highest intake were found to be 34% less likely to die from any cause at all.23

Magnesium has numerous mechanisms of action that explain its ability to protect against cardiac deaths. The cardioprotective actions include magnesium's role in maintaining heartbeats and preventing arrhythmias, and in protecting blood vessels against the accumulation of calcium. This can help lower the risk of atherosclerosis, which is a well-known predictor of heart disease, stroke, and death.22,24,25

Studies show that for each 50 mg increase in daily magnesium intake, calcification of the heart's main arteries decreased by 22%, and calcification of the aorta—the body's main artery—fell by 12%. As a result, those with the highest magnesium intake were 58% less likely to have any calcification of the coronary arteries and 34% less likely to have any calcification of the abdominal aorta.26

On the other hand, low dietary intakes and blood levels of magnesium are associated with elevated risk for cardiovascular diseases in general, and of arterial calcification specifically.2,25,27,28 One study showed that those with the lowest levels of serum magnesium were 2.1 times more likely to have coronary artery calcification.29

These studies showing the dangers of low magnesium levels—and the incredible benefits of obtaining adequate magnesium levels—make it clear that magnesium is an essential component of cardiovascular health.
Magnesium Lowers Stroke Risk

There are numerous factors that can lead to a stroke. For example, strokes can occur when blood pressure is too high, weakening cerebral arteries in a way that can induce bleeding in the brain (hemorrhagic stroke). More common strokes occur when artery linings are damaged, setting up conditions for an artery-blocking clot (ischemic stroke). They also commonly occur when a heart arrhythmia or artificial heart valve creates a blood clot that travels into a cerebral artery and blocks vital blood flow (ischemic stroke).³⁰,³¹

Maintaining consistent magnesium levels may help to prevent all of these processes.

In one study, men with the highest magnesium intake had significantly lower blood pressure and total cholesterol, and were 41% less likely to have a stroke than those with the lowest magnesium intake.³

And according to a 24-year-long study of nearly 43,000 men, subjects with the highest supplemental magnesium intake had a 26% lower stroke risk than those with the lowest intake.³²

Studies in women have also shown the dangers of having low blood levels of this mineral. In one of these studies, women with the lowest blood levels of magnesium were found to be 34% more likely to have an ischemic stroke than those with higher levels.³³

And in another study, low blood magnesium levels were associated with an approximate 50% greater likelihood of developing atrial fibrillation (a type of irregular heartbeat that can cause a blood clot that can lead to a stroke) compared to those with higher levels.³⁴

Magnesium is so critical for helping maintain a regular heartbeat that hospitals use intravenous magnesium to prevent atrial fibrillation following heart bypass surgery.³⁵

Magnesium Improves Blood Sugar Control

Aging and obesity induce insulin resistance, which elevates blood sugar levels. High, or even “borderline high,” blood sugar inflicts glycation damage to proteins throughout the body that prevents them from functioning properly. Controlling blood sugar—even in nondiabetic people—is a critical approach to preventing age-related diseases.

Magnesium supplementation improves the body’s response to insulin, which takes sugar out of the bloodstream.

A comprehensive review of 21 smaller clinical trials showed that magnesium supplementation led to significant improvements in insulin resistance.⁴ For example, after just four months, those supplementing with magnesium had an average of 13 mg/dL lower blood sugar levels compared with placebo recipients. The longer the subjects took the magnesium, the greater the improvements in insulin resistance. The effects were greatest in those subjects whose magnesium levels were lowest at the beginning of the study.

Importantly, these improvements were seen in both diabetic and nondiabetic patients. This is critical because nondiabetics with borderline elevated blood sugar are at increased risk for developing diabetes. This study showed that magnesium is effective both for treating and for preventing diabetes.

Magnesium Supplements Vary

There is no single “optimal” form of magnesium for supplementation. Instead, it is important to consider the reason for the supplement.

One approach for ideal magnesium supplementation is to use a 2-part supplement composed partly of magnesium citrate in a quick-release form and magnesium oxide in an extended-release form.

Magnesium oxide is highly concentrated, allowing a lot of magnesium to go into a relatively small pill. Because magnesium oxide is somewhat less bioavailable, it is ideal for an extended-release formulation, which gradually makes its way into the circulation.

Magnesium citrate, on the other hand, is less concentrated but is highly bioavailable, which allows for quick release of the mineral in a form that is readily absorbed.

This kind of innovative combination provides extended magnesium benefits in a single supplement.
Magnesium and Kidney Protection

The kidneys take a beating every day as they filter out waste products from blood. This leaves them particularly vulnerable to the effects of blood pressure and endothelial dysfunction, as well as the ravages of borderline or high glucose levels. Sustained over a lifetime, those factors raise the risk of serious kidney disease.

Kidney disease itself weakens the kidney’s ability to regulate magnesium. This contributes to ongoing losses of magnesium and makes magnesium supplementation that much more critical.36

Researchers studied more than 13,000 middle-aged adults for over 20 years to find out if there was a connection between magnesium levels and kidney disease. They discovered that low magnesium levels are a strong, independent risk factor for chronic kidney disease.5

What they found was that, compared with those with the highest magnesium levels, those with the lowest magnesium levels had a 58% greater risk of developing chronic kidney disease, and a nearly 2.4-fold greater risk of developing end-stage renal disease, requiring dialysis to sustain life.5

Magnesium and Migraines

Low levels of magnesium are associated with increased risk for migraines.8,42-45 This connection could be related to a genetic inability to properly manage magnesium in the gut and kidneys.42

While there is no cure for migraines, supplementing with magnesium has numerous benefits for those suffering from the condition.

A study of 81 migraine sufferers found that supplementing with magnesium for 12 weeks reduced the frequency of migraines by 41.6%, decreased the number of days with a migraine, and slightly reduced the duration and intensity of the attacks.46

Other studies have shown that oral magnesium may prevent migraines, and that intravenous magnesium may be an effective treatment.45

Researchers have stated: “Intravenous and oral magnesium should be adapted as parts of [a] multimodal approach to reduce migraine.” 8

Magnesium Supports Bone and Dental Health

While calcium is a well-known bone-protecting nutrient, few people recognize the important role magnesium plays in maintaining healthy bones. In fact, about half of total body magnesium is stored in bones.7,11

Because of that, low levels of magnesium directly lead to osteoporosis by depriving bone tissue of one of its most essential structural components.

Low magnesium also indirectly weakens bones by stimulating inflammatory cytokines that contribute to osteoporosis by increasing the breakdown of bones.37,38

The fact that 70%-80% of Americans don’t meet the daily average requirements of magnesium from their diet puts the large majority of the population at risk for this serious condition. Fortunately, assuring good magnesium intake helps protect against osteoporosis.

A large study of women demonstrated that those whose daily magnesium intake exceeded 423 mg had greater hip and whole-body bone mineral density compared with those getting less than 207 mg daily. 39

This protection extends to teeth as well. Like bones, teeth also have high magnesium content and rely on its presence for their structure.40 Because of this connection, magnesium supplementation has been found to improve tooth attachment and help subjects retain more teeth.41
How It Works
Magnesium is an absolute requirement for energy production from fats and carbohydrates and for synthesis of new proteins in our body. Magnesium helps regulate the flow of other mineral ions in and out of cells in skeletal and heart muscle, in artery walls, and in brain and nerve cells.
As a result, it is related to conditions as diverse as depression (involving brain cells), muscle cramps (involving skeletal muscle), heart arrhythmias (involving heart muscle cells), and hypertension (often involving cells in arterial walls). Magnesium also fights against the chronic, low-grade inflammation associated with aging and unhealthy lifestyles. This effect has been traced to magnesium's ability to reduce the activity of the "master inflammation regulator" called NF-kB, which results in downstream shutdown of cytokines and other pro-inflammation signaling molecules.
Inflammation is a major contributor to a wide range of chronic, age-related diseases. This explains in part why poor magnesium status is so closely associated with diabesity (diabetes and obesity) and metabolic syndrome, with cardiovascular disease, and neurodegenerative disorders such as Alzheimer’s.
The role of magnesium deficiency in chronic inflammatory stress led researchers to conclude that it should be considered a significant nutrient for health and well-being.

Summary
Magnesium has been described as an “orphan nutrient,” because so few people really understand its importance. Yet it is involved in hundreds of critical body processes.
Few Americans get adequate magnesium to support all of those processes, leaving them vulnerable to a host of potentially serious diseases. Fortunately, magnesium is a low-cost supplement available without the need of a doctor’s prescription.
Magnesium is emerging as this generation’s vitamin D—an overlooked nutrient that favorably alters human disease risk and improves quality of life.

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

References


Triple Action Blood Pressure AM/PM is formulated with myricetin and quercetin flavonoids along with steviosides to support a healthy 24-hour blood pressure cycle.

Suggested dose is one tablet in the morning and one tablet 30-60 minutes before bedtime. This formula is available with or without time release (2 mg) melatonin.

Also available, Dual Action Blood Pressure Support (without melatonin). Item# 02025.

To order Triple Action Blood Pressure AM/PM or Dual Action Blood Pressure, call 1-800-544-4440 or visit www.LifeExtension.com
The new Extend-Release Magnesium provides an immediate release of magnesium citrate to the stomach and a slow 6-hour release of magnesium oxide for optimal intestinal absorption.

According to data from the National Health and Nutrition Examination Survey of 2005-2006, most Americans fail to consume the estimated average requirement of magnesium from food alone.*

Each capsule of the new Extend-Release Magnesium supplies 250 mg of elemental magnesium designed for sustainable absorption into your bloodstream over a 6-hour period.

Those taking a multi-nutrient supplement that provides at least 100 mg of elemental magnesium may need only one Extend-Release Magnesium capsule daily.

**Extend-Release Magnesium**

Item #02107 • 60 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$13</td>
</tr>
<tr>
<td></td>
<td>$9.75</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$8.75 each</td>
</tr>
</tbody>
</table>

Reference:

Non-GMO
ZümXR® is a registered trademark and protected by patents.

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

To order Extend-Release Magnesium, 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.
Pterostilbene is a compound found primarily in blueberries. It has been the focus of intense longevity research due to its ability to activate three key molecular pathways involved in aging.

What makes pterostilbene unique is how it exhibits its life-extending modes of action. For example, pterostilbene induces apoptosis (programmed death) in malignant cells. Yet it exerts the opposite effect in the cardiovascular system, where it decreases the risk of atherosclerosis by protecting endothelial cells.

This multipurpose compound also helps prevent the dangerous buildup of cellular waste products that interfere with biological activity throughout the body.

Pterostilbene, a calorie restriction mimic, is proving itself to be an important workhorse in the fight against aging.
**Pterostilbene Mimics Calorie Restriction**

One mechanism by which **calorie restriction** has been shown to beneficially extend lifespan is by “**turning on**” genes directly related to long-term survival. Scientists have been intrigued to find that pterostilbene mimics many of the same broad preventive and therapeutic properties of calorie restriction.

In fact, pterostilbene impacts multiple antiaging factors involved in cardiovascular, hematologic, inflammatory, metabolic, and neurological disorders. Preclinical studies suggest that pterostilbene acts as a potent antitumor compound in multiple malignancies.

One reason why pterostilbene is so effective at promoting longevity is that, similar to calorie restriction, it activates **antiaging molecular pathways**. And multiple studies confirm pterostilbene’s remarkable antiaging effects.

Cell and animal studies have shown that pterostilbene can extend the lifespan of various animal models of human longevity by regulating **three** major pathways linked to longevity: mTOR, AMPK, and sirtuins.

Let’s look at each individually.

**Anti-Aging Pathway #1: mTOR**

A molecular complex called **mammalian target of rapamycin** (mTOR) is currently a major focus of pharmacological research to slow aging—and for good reason. So far, reducing the expression of mTOR has been shown to extend lifespan across multiple species. Laboratory-bred mice whose expression of mTOR has been reduced to about **25%** enjoy an approximate **20%** increase in median lifespan.

mTOR is a cellular signaling pathway that serves as a central regulator for cell growth, metabolism, survival, and proliferation. This pathway is responsible for controlling many of the processes that use or generate large amounts of energy and nutrients. When mTOR signaling goes awry, it triggers numerous harmful events, including those linked to a variety of cancers.

Abnormal mTOR activation is a contributor to many of the chronic diseases of aging. Scientists are aggressively seeking pharmaceutical approaches to lower the activity of mTOR.

**Pterostilbene** (as well as other CR mimetics and calorie restricted diets) has been found to naturally inhibit the mTOR pathway. This reduction in mTOR provides a powerful way of regulating cellular growth and metabolism, and combatting some of the primary factors involved in aging and disease.

**Anti-Aging Pathway #2: AMPK**

While pterostilbene has been shown to naturally inhibit the mTOR pathway, it has been found to beneficially activate a separate important pathway associated with an increase in lifespan and a decrease in degenerative disease. Called **AMPK** (short for adenosine monophosphate-activated protein kinase), this cellular energy sensor regulates the ways our bodies use and transform energy.

When we’re young, higher levels of activated AMPK are present, which helps protect us against many conditions, including obesity and diabetes. But with time, AMPK activation decreases, which can lead to weight gain and accelerated aging.
By increasing AMPK activation through the use of various nutritional compounds including pterostilbene, we can achieve a reduction in many of the destructive factors of aging, enabling our cells to return to their youthful vitality. Preclinical research shows that enhanced AMPK activity is associated with an approximate 20% increase in lifespan. It has also been shown to shrink body-fat stores, lower blood sugar and lipid levels, and suppress chronic inflammation—all of which are key indicators of a reduction in the aging process.

Activating AMPK can also help protect against Alzheimer's disease because it suppresses the formation of beta-amyloid plaque and tau tangles, two of the primary markers of this neurodegenerative disease. It has also been found to limit oxidative stress that leads to hypertension, increase cell survival during hypoxia (oxygen deprivation), and promote autophagy to reduce memory impairment.

Activating AMPK is a critical component for warding off degenerative disease. Pterostilbene helps activate this important longevity pathway.

Anti-Aging Pathway #3: Sirtuins

Pterostilbene regulates the activation of key anti-aging molecules known as silent information regulators (SIR), or sirtuins. Sirtuins act across multiple cellular pathways that regulate gene expression, aging, DNA repair, metabolism and apoptosis. Studies have also examined the vital role that sirtuins play in maintaining telomere length.

These are critical longevity factors, since shortened telomeres are associated with reduced lifespan.

In a cell study model of ischemia-reperfusion injury, pterostilbene was found to protect heart cells from apoptosis by stimulating the activity and enhancing the expression of sirtuin-1. Study investigators concluded that pterostilbene could be used clinically to alleviate heart muscle injury due to a heart attack.

Eliminating Cellular Garbage

Another way pterostilbene can extend lifespan and ameliorate age-related diseases is by preventing the buildup of age-related cellular waste products. These aggregates of damaged and cross-linked proteins, known as lipofuscin, are detrimental to normal cell functions.

The rate of lipofuscin formation is closely related to the level of cellular oxidative stress. Studies suggest that lipofuscin may be involved in the earliest stages of Alzheimer's disease by causing mitochondrial dysfunction and by activating an innate immune response that can damage neurons.
The body is equipped with small garbage disposals within cells called lysosomes that are designed to remove harmful lipofuscin. When lysosomes stop working properly, it leads to the accumulation of lipofuscin. The progressive accumulation of this cellular debris is considered to be a reliable marker of aging.

In addition to accelerating the aging process, these junk-laden cells contribute to neurodegenerative diseases like Alzheimer’s and Parkinson’s, and they have been found in vascular lesions in the retina.

By preventing the buildup of cellular garbage, pterostilbene helps keep the body’s systems running more smoothly and efficiently—an important factor in maintaining youthful vigor while also preventing age-related diseases.

**Pterostilbene’s Synergistic Effects**

Pterostilbene is especially effective when combined with other specific antiaging compounds and CR (calorie restriction) mimetics.

One of the most significant relationships is with resveratrol. Pterostilbene and resveratrol are both stilbene compounds and are structurally related.

Pterostilbene and resveratrol naturally occur together in certain varieties of berries and grapes. Both compounds have been shown to mimic the antiaging effects of caloric restriction, and multiple studies have confirmed their synergistic health benefits.

Resveratrol is known for its potential ability to combat cancer and diabetes, while protecting against cardiovascular disease and Alzheimer’s. Pterostilbene affects longevity-related molecular pathways “downstream” from the sites activated by resveratrol, thereby increasing the antiaging effects. Together, these effects make these two compounds especially beneficial when taken together.

Combining pterostilbene with resveratrol has been shown to be a beneficial therapy for treating estrogen receptor-alpha-negative breast cancer cells when combined with standard-of-care antihormonal therapy.

Additionally, combined treatment with pterostilbene and resveratrol has been shown to significantly and synergistically inhibit the growth of triple-negative breast cancer cells, a type of breast cancer that is especially aggressive and difficult to treat. This cell study found no harmful effects of the treatment on healthy control breast cells, demonstrating the safety and effectiveness of the two compounds.

Pterostilbene’s established ability to work in concert with other CR mimetics provides an opportunity to take advantage of the compound’s synergistic lifespan-extending effects.

**Potent Brain Benefits**

Blueberries are the primary dietary source of pterostilbene. Study after study has shown that consuming blueberries can prevent and mitigate age-related cognitive disorders and higher intakes of blueberries have been found to reduce the rate of cognitive decline.
While blueberries contain numerous compounds that contribute to these cognitive benefits, pterostilbene is one of the most important contributing factors. Studies have shown that pterostilbene can improve cognition in rats. It has also been shown to help prevent the loss of the neurotransmitter dopamine from memory centers in aged rats.\(^5\)

This is an example of how pterostilbene can battle the effects of age-related diseases.

**Summary**

Multiple studies have shown that the health and longevity benefits of consuming blueberries are largely due to the presence of pterostilbene.\(^1\) Although pterostilbene is structurally similar to the well-known red wine molecule resveratrol, the two CR mimetics work in complementary ways to boost lifespan extension.

Pterostilbene works on critical molecular pathways involved in lifespan extension, and it has been shown to work synergistically with resveratrol.

Pterostilbene has a wide range of preventive and therapeutic properties that allow it to beneficially impact factors involved in cardiovascular disease, neurodegenerative diseases, metabolic disorders, and cancer.

After spending years in the shadow of its more widely known and researched molecular cousin, resveratrol, pterostilbene has emerged as a powerful CR mimic.

One can obtain standardized potencies of pterostilbene in supplemental form, often combined with resveratrol.

---

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

**References**

ACTIVATE THREE KEY LONGEVITY PATHWAYS


A properly functioning thyroid helps support:

- Energy Levels
- Motivation
- Concentration
- Metabolism and
- Healthy Weight Management

**Triple Action Thyroid** includes three all-natural herbs, **Ashwagandha**, **Guggul**, and **Korean Ginseng**, to provide comprehensive support by optimizing the thyroid hormones T3 and T4.13

The addition of **vitamin B12**, **iodine**, **tyrosine**, and **vitamin A** further enhances its benefits.

Non-GMO

**References**


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

Sensoril® is protected under US Patent Nos. 6,153,198 and 6,713,092 and is a registered trademark of Natreon, Inc. GS15-4TM is a trademark of ILHWA N.A.

**Caution:** If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.
NAD+ (nicotinamide adenine dinucleotide) is found in every cell in the body and plays an essential role in regulating genes that control aging.

The suggested daily dose of one NAD+ Cell Regenerator™ vegetarian capsule provides 100 mg of NIAGEN® Nicotinamide Riboside.

NAD+ Cell Regenerator™
Item #01904 • 30 vegetarian capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$34</td>
<td>$25.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$19.50 each</td>
</tr>
</tbody>
</table>

Non-GMO

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

NIAGEN® is a registered trademark of ChromaDex, Inc. Patents see: www.ChromaDexPatents.com.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Support longevity factors with one daily capsule:

- **Trans-Resveratrol** facilitates youthful gene expression.
- **Pterostilbene** facilitates youthful gene expression and activates longevity pathways.
- **Nicotinamide riboside** helps support physical performance (NIAGEN®).
- **Quercetin** helps purge the body of inflammation-inducing cells and augments the beneficial effects of resveratrol.
- **Fisetin**—switches on cell signaling molecules that support youthful expression of longevity genes.
- **Red Grape/Blueberry Blend** providing polyphenols, anthocyanins, OPCs.

**Optimized Resveratrol with Nicotinamide Riboside**

Item #02031 • 30 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$42</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
</tr>
</tbody>
</table>

*Provides 250 mg of trans-resveratrol in one daily capsule along with synergistic plant extracts.

To order Optimized Resveratrol with Nicotinamide Riboside, call 1-800-544-4440 or visit www.LifeExtension.com

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


Turn On Your Body’s Longevity Genes!
CURCUMIN REVERSES THE CELLULAR DAMAGE OF CHRONIC STRESS
Stress causes destructive changes to our brain. While we may feel anxious due to stress, those feelings are minor compared to damage done to our brain cells. Stress-induced brain changes often lead to anxiety or depression and worse.

Curcumin, a polyphenol derived from the turmeric spice plant, can reverse harmful brain changes induced by chronic stress. Curcumin also stimulates the formation of new brain cells and their connections—two processes that can prevent or mitigate symptoms of depression.

Curcumin has been in use for nearly 4,000 years to treat or prevent various illnesses. New studies show that it can help protect mental health by combating stress-induced anxiety and depression.

This article describes preliminary laboratory research that led to human trials demonstrating the ability of curcumin to mitigate the adverse impact of stress on mental and physical health.
Studies show that curcumin reverses these damaging changes to the body’s physical systems. When given orally to rats, curcumin has been shown to restore the cortisol balance and the adrenal glands to their normal function, and to normalize the animals’ behaviors. In mice, curcumin improves both the oxidative and energy-restricting effect of stress while again restoring normal behavior. Recent studies show that curcumin can prevent the death of brain cells and promote new brain-cell connections, which become damaged from chronic stress.

By protecting cellular structures from physical damage, curcumin is able to help remediate the longer-term impacts of stress, such as chronic anxiety and depression.

Let’s take a look at the studies.

**Curcumin Addresses Anxiety**

Animal studies of stress-induced anxiety have demonstrated that oral curcumin can significantly prevent anxiety-like behaviors and improve mobility—effects that are triggered by acute stressors such as sleep deprivation or restraints. Studies of the antidepressant effects of curcumin are even more abundant. Animal models of depression have been developed to test new, single-targeted drugs. But these models have proven useful in studies of natural supplements as well.

Curcumin has been shown to favorably affect the behavioral, biochemical, and neurochemical effects of depression in animal models. It has been shown to normalize depressive behaviors such as helplessness, to improve levels of mood-determining neurotransmitters such as dopamine and serotonin, and to inhibit the enzymes that break them down.

People suffering from stress-induced depression have reduced levels of biochemicals that protect or enhance normal brain-cell activity. Curcumin appears capable of increasing the production of these protective biochemicals.

In fact, curcumin is so potent against stress-induced anxiety and depression that it may help to lower the dose of prescription antidepressant drugs.

**Human Studies Validate Curcumin’s Anti-Stress Effects**

A growing number of human studies are extending and validating what these animal studies have revealed.

For example, in a study of healthy, middle-aged people, taking an enhanced-absorption curcumin formula produced a wide array of health benefits, including reducing salivary amylase levels (a marker...
of acute stress), increasing scavenging of free radicals, and lowering blood markers of brain deterioration—all effects that would be expected to reduce the impact of stress in the brain.\(^{17}\)

Work-related stress can be extremely harmful to health. A study published in 2016 demonstrated curcumin’s impact specifically in people suffering from occupational stress-related anxiety and fatigue.\(^{18}\)

For the study, 60 adults with such occupational stress disorders were randomly assigned to take an enhanced-absorption curcumin formula, standard curcumin, or a placebo (all 500 mg twice daily) for 30 days. Compared with the other two groups, those taking the **enhanced-absorption curcumin** experienced significant **improvements** in quality of life, stress reduction, anxiety, and fatigue. These improvements correlated with reduced evidence of oxidative damage.

Another study focused on anxiety in obese people at risk for both anxiety and depression.\(^{19}\) Subjects took curcumin (1,000 mg/day) or a placebo. After 30 days, the curcumin-supplemented subjects experienced a significant **reduction** in mean **anxiety scores**.

### Curcumin’s Antidepressant Effects

Oxidative stress in the brain can lead to low-grade inflammation—and eventually to cellular dysfunction and death. These processes can manifest as symptoms associated with depression.\(^{4,5}\)

Curcumin’s anti-inflammatory properties make it a strong candidate for use as a natural antidepressant.\(^{19,21}\) And unlike common antidepressant drugs, it has no known major side effects.\(^{22}\)

In one study, **curcumin** (500 mg twice daily) was found to be significantly more effective than **placebo** at improving symptoms of depression (sleep disturbances, fatigue, feelings of worthlessness, diminished ability to concentrate, weight changes, thoughts of death or suicide, irritability, loss of interest, anxiety) in adults with major depressive disorder.\(^{21}\) This study showed that curcumin was the most effective in subjects with so-called **atypical depression**, a type of depression in which positive events can improve mood.

Just last year, researchers published a study examining curcumin’s effects on cognition and mood in healthy older adults. For this study, an enhanced-absorption form of curcumin (400 mg/day) was given to healthy adults aged 60 to 85.\(^{31}\) This research focused on both acute treatment (mean a single dose) and chronic treatment (mean treatment over a period of time) with curcumin vs. placebo.

### What You Need to Know

**Curcumin Combats Anxiety and Depression**

- **Stress** produces cellular and molecular damage to tissues throughout the body, particularly the brain.
- **Stress-induced** brain changes often lead to anxiety or depressive disorders, which themselves can contribute to additional stress.
- **Drug therapy** is only partially effective and comes with significant side effects.
- **Curcumin** is now showing remarkable stress-relieving, anti-anxiety, and antidepressant effects in laboratory studies.
- **Human studies** demonstrate that oral curcumin, particularly in enhanced-absorption formulations, can augment or even replace prescription drug therapy.
- **Anyone** suffering from the effects of depression or anxiety should consider adding enhanced-absorption curcumin in order to help combat the impact of chronic stress.
One hour after a **single dose**, curcumin-supplemented subjects scored better on tasks requiring sustained attention and working memory—functions commonly impaired by depression. Continuous supplementation with curcumin for four weeks also improved scores on working memory and mood (general fatigue, calmness, contentedness, and fatigue induced by psychological stress). And when subjects took a single acute dose during the chronic supplementation period, it led to even further improvements in alertness and contentedness.²³

Most recently, a meta-analysis study of curcumin and depression was published in early 2016 that evaluated the pooled results of six previous smaller studies.²⁴ It showed that curcumin supplementation—especially in **enhanced-absorption formulations**—was significantly better than placebo at treating major depressive disorder. It also revealed that the effects appear greatest when given for longer periods of time, at higher doses, and to middle-aged people in particular.

### Curcumin Enhances Prescription Medications

Several studies have now shown that taking curcumin in addition to prescription medications leads to **significantly greater improvement** in depression and anxiety than taking prescription meds alone. This is a vital area of research, given the damage such drugs can cause to both short- and long-term functioning, and also considering their limited efficacy at treating symptoms.²⁵,²⁶

In one such study, researchers evaluated patients with major depressive disorder who were already taking standard antidepressant drugs. For six weeks, the patients either continued taking the standard treatment alone, or they took **enhanced-absorption curcumin (1,000 mg/day)** in addition to their prescription drugs.²⁵ Both groups experienced reductions in depression ratings by the end of the study. However, the group taking their antidepressants plus curcumin showed significantly greater improvement on scales of anxiety and depression as well as on scores of **cognitive and physical symptoms**.

Another study evaluated depressed men between 31 and 59 years old who took curcumin (1,000 mg/day) or a placebo for 6 weeks while continuing their existing antidepressant regimen.²⁶ By the end of the study period, the group taking the prescription drugs plus curcumin showed significant reductions in depression scores compared with those on standard drugs alone. The curcumin group also had significant reductions in markers of inflammation and stress, as well as enhanced levels of brain protective molecules.

### Summary

Chronic stress has profound effects on our health and well-being. It is particularly associated with the development of anxiety and depression, both of which can be life-threatening conditions.

Drug treatment for anxiety and depression is far from adequate, and is fraught with potentially serious
side effects. The natural polyphenol curcumin acts by multiple biochemical pathways to ease the impact of stress on brain cells, and to prevent or mitigate stress-induced anxiety and depression.

Curcumin may be used alone, or in combination with prescription medications, to relieve symptoms and improve quality of life. Anyone suffering from stress, depression, and/or anxiety should consider supplementing with an enhanced-absorption curcumin in order to emulate the findings emanating from these recent human studies.

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

References
Enhanced-Absorption Curcumin Formula

Despite its powerful effect on myriad human disorders, curcumin is not readily absorbed from an oral dose.29 This has led to numerous attempts to enhance its absorption by combining the curcumin molecule with others that are more readily absorbed.

One of the most promising of the enhanced-absorption formulations is one in which curcumin is complexed with components of its native turmeric root, which are typically lost during purification. When this compound is administered orally in healthy adults, the absorption of curcumin into the bloodstream is nearly 7-fold that of curcumin alone.29

Given the superiority of enhanced-absorption curcumin, it seems prudent to seek such a preparation as part of a regimen that includes curcumin for its stress-reduction, antidepressant, and anti-anxiety effects.


**DHEA**

**Restore Youthful Immune Balance**

DHEA is a critically important hormone, but its production declines sharply as we age.

Life Extension's® convenient, economical **25 mg** capsules are a popular way to consume the precise amount of DHEA your body may need.

---

**DHEA 25 mg**

Item #00335 • 100 capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$12</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$11 each</td>
</tr>
</tbody>
</table>

Each bottle lasts a typical user over **three months**!

To order **DHEA**, call **1-800-544-4440** or visit [www.LifeExtension.com](http://www.LifeExtension.com)

---

Non-GMO.

CAUTION: Do not use DHEA if you are at risk for or have been diagnosed as having any type of hormonal cancer, such as prostate or breast cancer.

---

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.
Daily stress disrupts our sense of well-being and shortens our telomeres.

The ingredients in Natural Stress Relief capsules, lemon balm and L-theanine, are clinically known to naturally reduce stress and promote relaxation.¹³

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

Non-GMO
Contains rice.

References

Beware of Imitations: The L-theanine used in Natural Stress Relief is Suntheanine®, the only pure form of L-theanine protected by 40 U.S. and international patents and scientifically validated in clinical studies to be safe and efficacious. Independent laboratory analysis has verified that certain other products on the market claiming to contain “L-theanine” are only half L-theanine, the other half being a different form of theanine known as “D-theanine,” which has not been scientifically evaluated in published studies.

Cyracos® uses a non-selective traditional extraction process preserving the plant’s phytochemical synergy.

Suntheanine® is a registered trademark of Taiyo International, Inc. Use of Suntheanine® is protected by US Trademark Registration No. 2,548,957. Cyracos® is a registered trademark of Naturex.

Natural Stress Relief
Item #00987 • 30 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$28</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$18 each</td>
</tr>
</tbody>
</table>

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

CURCUMIN

in a super absorbable formula.

Curcumin is a critical part of a healthy longevity program. This extract of turmeric spice promotes a healthy inflammatory response in your joints, supports brain, breast, and colon health, and encourages healthy cell division — but is difficult to absorb.

So our Super Bio-Curcumin® formula delivers the patented turmeric extract, BCM-95® Bio-Curcumin®, which is up to seven times more absorbable and lasts longer in your bloodstream too.

Get the maximum health benefits of this incredible nutrient. Make Super Bio-Curcumin® part of your daily health regimen today.

NON-GMO


Call 1-800-544-4440 toll-free
www.LifeExtension.com

Item #00407 • 400 mg • 60 veg. caps

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-bottle $38.00</td>
<td>$28.50</td>
</tr>
<tr>
<td>4-bottle —</td>
<td>$26.25</td>
</tr>
</tbody>
</table>

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

For a complete list of ingredients, dosage and use, important cautions and references, go to www.LifeExtension.com.
In September 2012, Australian researchers published findings showing blood glucose at the high end of normal resulted in significant brain shrinkage. The shrinkage occurred in regions of the brain (hippocampus and amygdala) involved in memory and other critical functions. Atrophy (shrinkage) in these brain areas worsens memory.

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

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

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

This reinforces the need for people to suppress excess blood glucose, something that I’ve been teaching for years in my calorie control education courses.
Personalized Instruction

Controlling glucose naturally is a primary strategy for protecting and improving brain function, which is taught in *The CR Way® to Great Glucose Control* program. This is an adult education course that helps participants learn how to lower their blood sugar. Taught online and through teleconferences, the program attracts hundreds of participants every year.

Each person who signs up is a special someone to us—we try to get to know each one. Becoming familiar with participants helps us customize the program for their needs. We want to give all *Great Glucose Control* users the best opportunity to control their glucose levels naturally.

Many people now sign up for *The CR Way® to Great Glucose Control* classes to improve their brain function. Of course, diabetes and prediabetes are often the prime motivators.

Reversing Prediabetes and Type II Diabetes

When people with prediabetes or type II diabetes participate in the *Great Glucose Control* classes, they are often surprised to discover that their diabetes or prediabetes can be reversed.

Make no mistake: we do not offer medical advice. We simply introduce ways of eating and living that reduce glucose levels naturally. Participants learn to apply the ideas through food choices, recipes, meal plans, and lifestyle changes. Many participants are able to control blood glucose better than they had dreamed possible.

We leave decisions about taking diabetes drugs up to the participants and their doctors.

When *The CR Way® to Great Glucose Control* participants who have prediabetes or type II diabetes began to turn their conditions around, at first I felt that they had been misdiagnosed. But I’ve been persuaded that the diagnoses were right and that the CR Way lifestyle is a very effective treatment.

Type II diabetes is often an acquired disease, not one that you are born with. It is frequently developed by people who are either overweight, depressed, relatively sedentary, eating high-simple-carbohydrate diets, or a combination of these. When these conditions are reversed by lifestyle changes, diabetes and prediabetes can change too. And *The CR Way® to Great Glucose Control* is all about beneficial lifestyle change.

Gut Dysbiosis Can Affect Glucose Control

In the most recent series of classes, we found that many participants had serious gut dysbiosis issues. That was not surprising since studies increasingly link glucose control to gut health.³

So we added foods and a special focus on helping participants to normalize their gut function and to include healthful foods in their diets more easily. This new material is slated to be part of this fall’s *Great Glucose Control* program.
Getting Started

When participants start, they are given fasting and post-meal glucose goals to aim for:

- Fasting glucose: under 80 mg/dL
- Post-meal glucose: under 120 mg/dL

At first, these levels may seem unattainable. They did to me when I started glucose control 20 years ago. But by the end of the course, these glucose levels guide the normal daily practice for many participants.

Foods for Glucose Control, Optimal Health, and Longevity

The classes introduce delicious foods and recipes. These are not just run-of-the-mill health food selections. We have identified some of the most health-enhancing foods that will help with glucose control as well as improve longevity prospects.

A delicious red cabbage soup, for example, gets its floral aroma from a few teaspoons of tarragon and—depending on your preferences—can be made into a hearty meal by serving it over hulled barley, a very low-GI grain.

This recipe is flexible. It can be turned into a delicious red cabbage spread by combining the cooked cabbage and the red onion from the recipe with an avocado and a bit of lemon in a food processor. Whirl the combo for a couple of minutes and voilà—the red cabbage combo is ready to be spread over other favorite foods like sprouted grain bread or either bean or grain pasta, or it can be enjoyed as a side-dish on its own!

As we developed the video for the “Foods and Recipes” part of The CR Way® to Great Glucose Control, we realized that some of the foods had such impressive effects that we set up an opportunity to test one of them through special research at the University of Pittsburgh Medical Center. We await the results.

Lifestyle Plans

The “Foods and Recipes” are integrated into unique lifestyle plans that show participants how to control glucose from the time they get up until they go to sleep.

Instead of just meal plans, the lifestyle plans go beyond diet to include exercise, meditation, sun exposure, and other suggestions not normally included in meal plans or considered for glucose control. This evolved from the recognition that daily activities often make a big difference in glucose levels.
All the classes are taught live so we can respond personally to individual needs. Each lesson is introduced by a narrated slide show video to help *Great Glucose Control* participants understand and remember the key points. It is followed by a live class. The classes are recorded and class registrants receive the access numbers, so even the busiest people can find time to benefit from the program.

**Community Meetings**

Before the classes start, we hold community meetings where members, especially new ones, call in to join the live teleconferences. These friendly gatherings encourage participants to ask questions that are important to them. We want to hear about their glucose challenges so we can tailor the class material accordingly.

If you’d like to increase your likelihood to live in good health for a long time, visit www.LifeExtension.com/CRWay or call 1-800-544-4440 and ask for *The CR Way® to Great Glucose Control*. The normal price for a 6-week course is $189. *Life Extension®* readers are able to obtain this same educational program for $159 if they act before November 29, 2016.

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

---

**References**


---

**CR Way Pioneers**

Paul McGlothin and Meredith Averill are a bridge, translating the research into the longevity benefits of low-calorie diets and into practical application of the results. Their CR Way® lifestyle is based on decades of research showing favorable changes in genes, gene expression, and other aging biomarkers. They’ve played a pivotal role in this research on aging at Washington University in St. Louis School of Medicine, and the University of California at both San Francisco and Riverside.
# Tarragon Cabbage

## Prep time: 12 minutes, Cooking time: 40 minutes

If you are on the lookout for foods with extraordinary health benefits, red cabbage should be one of them. It is the centerpiece of several delicious CR Way recipes, such as this versatile combo. Bear in mind that while 40 minutes of cooking time may seem long, it provides you with time to do other things in the kitchen or elsewhere if your timer works well.

### Ingredients:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure water</td>
<td>3 quarts</td>
<td>Distilled, if possible</td>
</tr>
<tr>
<td>Red Cabbage</td>
<td>1 medium</td>
<td>(840 gram) Boiled, no salt</td>
</tr>
<tr>
<td>Onion</td>
<td>1 medium</td>
<td>(240 grams) Boiled, no salt</td>
</tr>
<tr>
<td>Tarragon</td>
<td>2 Tbsp</td>
<td>Dried</td>
</tr>
<tr>
<td>Avocado</td>
<td>1 medium</td>
<td>(200 gram)</td>
</tr>
</tbody>
</table>

### Preparation

- Remove tough outer cabbage leaves.
- Separate the leaves from the heart and other very fibrous pieces.
- Cut the cabbage into bite-size pieces.
- Peel and chop onion.
- Peel and pit avocado—if using recipe to make spread.

### Cooking

1. Add water to a large cooking pot.
2. Add tarragon.
3. Add cabbage hearts and fibrous pieces.
4. Cook at low level of heat for 20 minutes.
5. Add onion and the rest of the cabbage.
6. Cook for another 20 minutes, allowing it to come to a slow boil.
7. Remove from heat.

### Serving

- **Tarragon-Cabbage Soup**
  - Dipper it into bowls and enjoy it!
- **Red-cabbage Side dish**
  - Drain veggies and serve in side dishes
  - Or
  - Serve in side dishes with broth to retain heat longer
- **Red-cabbage Spread**
  - Add veggies and an avocado to a food processor
  - Whirl it to your preferred consistency.
  - Serve as a side dish...
  - As a spread over sprouted grain bread, sprouted bean or grain pasta or as a dip for your favorite raw veggies
Importance of AMPK

Studies show increased AMPK activity supports:

• Reduced fat storage;¹
• New mitochondria production;²
• The promotion of healthy blood glucose and lipids already within normal range.³

AMPK Activator provides nutrients shown to significantly boost AMPK activity.

Gynostemma Pentaphyllum

In one study, researchers documented a 1-inch reduction in abdominal circumference in overweight individuals who took 450 mg daily of G. pentaphyllum extract for 12 weeks.⁴

Trans-Tiliroside

Trans-tiliroside promotes healthy blood glucose levels and body weight already within normal range.⁵

AMPK Activator

Item #01907 • 90 vegetarian capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$48</td>
<td>$36</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$33 each</td>
</tr>
</tbody>
</table>

Non-GMO

ActivAMP® is a registered trademark of Gencor.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed and results may vary.

References


These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
THE CR WAY TO GREAT GLUCOSE CONTROL
helps you keep your blood glucose at optimal levels.

Since it was introduced in 2009, hundreds of participants have benefited:

“…my glucose levels have never been better. And I feel both the positive physical and mental effects.”
– Thomas, April 24, 2014

“…easy to read and, more important, easy to apply.”
– Dianne, August 3, 2014

“A big thank-you. My fasting glucose was a resounding 77, down from the high 90s for the last few years.”
– Lawrence, May, 2016

Take advantage of the new, expanded The CR Way to Great Glucose Control:

• Six live 30-minute teleconference classes.
• Glucose control experts Paul McGlothin and Meredith Averill teach the classes—live!
• Four Instructional videos, describing key steps for great glucose control.
• Five-part e-books updated with new recipes, food suggestions, and ideas for improving your gut microbiome.

Live, Personal Guidance at an Affordable Price!
Personal guidance by experts can cost thousands. To make it possible for all Life Extension supporters to participate, The CR Way to Great Glucose Control program is offered for an introductory price of just $159 until Nov. 29. Act now to join Paul McGlothin and Meredith Averill for the live classes, the five beautifully illustrated e-books, and the instructional videos.

Don’t risk the suffering and financial ruin that comes with memory loss, heart disease, diabetes, cancer, Alzheimer’s disease, and shorter lifespan. Take advantage of this lifesaving opportunity!

The CR Way to Great Glucose Control CD
Item #38840

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$189</td>
<td>$159 (Until Nov. 29)</td>
</tr>
</tbody>
</table>

To order The CR Way to Great Glucose Control, call 1-800-544-4440 or visit www.LifeExtension.com/CRWay

Meredith Averill and Paul McGlothin
Creators of LivingTheCRWay.com
CR Mimetic Longevity Formula mimics some of the gene expression changes that can occur with calorie restriction. It provides a blend of six remarkable phytonutrients, including:

- **Trans-Resveratrol**—the form of resveratrol used in scientific studies documenting remarkable longevity-enhancing effects.
- **Quercetin**—enables resveratrol to remain active longer in the body.
- **Fisetin**—switches on cell signaling molecules that support youthful expression of longevity genes.
- **Trans-Pterostilbene**—provides a complementary stimulus to resveratrol.
- **Grape Seed Extract**—works with resveratrol to trigger favorable gene expression.
- **Theaflavins from Black Tea**—supports a healthy inflammatory response and stimulates a longevity factor.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed and results may vary.

**Note:** The daily dose of CR Mimetic Longevity Formula provides 250 mg of trans-resveratrol. Other resveratrol supplements are not needed for those taking CR Mimetic Longevity Formula.

To order CR Mimetic Longevity Formula, call 1-800-544-4440 or visit www.LifeExtension.com

pTeroPure® is a registered trademark of ChromaDex, Inc. MASQUELLER® is a registered trademark of International Nutrition Company BV (INC), Loosdrecht, The Netherlands.

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.
Like the burning of a fuse, telomeres at the ends of our chromosomes steadily shorten every time a cell replicates itself.¹,²

A study from *The Lancet* evaluating telomere length on a group of individuals age 60 and over found that those with shorter telomeres had a **3.18-fold** higher mortality rate from heart disease and an **8.54-fold** higher mortality rate from infectious disease.³

Telomeres, which are made up of repeating units of DNA sequences, hold the key to biological aging.⁴ Once telomeres reach a critically short length, further cellular replications are prevented, leading to aging (senescence) of the cell.¹,²,⁵

These senescent cells eventually accumulate or die. Senescent cells no longer contribute to active tissue maintenance.¹,² In fact, telomere length has become useful as a biomarker of cellular aging.⁴-⁷

Studies show plenty of triggers that accelerate telomere shortening, including oxidative stresses, inflammation, and obesity.¹,⁸ Shortened telomeres are found in people with age-related disorders such as cardiovascular disease, diabetes, neurodegeneration, and osteoporosis.⁹,¹⁰

Not surprisingly then, the search is on for ways to preserve telomere length in normal cells, with the aim of sustaining cellular youth and healthy functioning.
closely associated with risk for developing age-related diseases.\textsuperscript{5,15} Homocysteine is a molecule associated with increased cardiovascular disease risk and poor blood vessel function. B vitamins are necessary for normal disposal of homocysteine, which accumulates under conditions of B vitamin deficiency. Both elevated homocysteine levels and diminished B vitamin levels are closely associated with premature shortening of telomeres, leading to accelerated cellular aging.\textsuperscript{5,15,16} Thus, homocysteine-induced telomere shortening may be the central connection between B vitamin deficiency, high homocysteine levels and cardiovascular disease.\textsuperscript{16}

It has long been known that B vitamin supplementation reduces homocysteine levels, and it was recently shown that people whose B vitamin levels are low have shorter telomeres.\textsuperscript{5,15} Taken together, these findings suggest that keeping B vitamins at adequate levels is an effective means of both lowering toxic homocysteine levels and supporting longer telomeres.

Vitamin D Promotes Telomerase Activity

Long thought to be limited to promoting calcium absorption in the intestines, vitamin D has become known as one of the most versatile of nutrients.\textsuperscript{10} Vitamin D receptors are found on cells throughout the body, suggesting that still more functions await discovery.\textsuperscript{17}

Recently, a molecular link was found between vitamin D and DNA repair an action required for maintenance of telomere length.\textsuperscript{18} Higher plasma vitamin D levels have been associated with longer telomeres.\textsuperscript{19} These findings have triggered other studies of vitamin D and its role in telomere function.

For example, patients undergoing hemodialysis for kidney failure have both decreased telomere length and lower vitamin D levels compared with healthy controls.\textsuperscript{12} But dialysis patients treated with vitamin D\textsubscript{3} were shown to have longer telomeres than untreated patients, potentially explaining the beneficial health effects of supplementation in these individuals.\textsuperscript{12}

In a more generalized study, vitamin D supplementation in a group of overweight Americans, at a dose of 2000 IU/day, increased subjects’ telomerase activity by more than 19%.\textsuperscript{1} This finding suggests that vitamin D plays an important role in supporting telomere lengthening and as a result has antiaging potential.

Vitamins C and E Preserve Telomere Length

Studies of vitamin C demonstrate that telomere shortening can be reduced by up to 62% on untreated controls in cultures of human blood vessel cells.\textsuperscript{20} The result was a significant extension of cellular lifespan, and reduction in physical changes associated with cell aging. This in turn was associated with sharp reductions in cellular free radicals.\textsuperscript{20}

Near-identical results have now been shown in cultures of human heart-muscle cells, demonstrating that vitamin C can work to slow cardiovascular aging by preserving telomere length.\textsuperscript{21}

A dramatic demonstration of the value of vitamin C’s role in aging-deceleration was provided by a 2016 study of cellular model of Werner Syndrome, a premature aging disorder.\textsuperscript{22} After testing...
numerous compounds for their ability to slow or reverse the rapid aging, scientists identified vitamin C as the most efficient “rescue” for many premature aging characteristics of the cells.22 Treated cells showed longer telomeres, reduced secretion of inflammatory cytokines, and improved integrity of their cellular nuclei, all features of much younger cells. Indeed, in a mouse model of Werner Syndrome, vitamin C rescued aging cells from premature death by altering expression of genes involved in the maintenance of DNA integrity.22

Vitamin E comes in a total of 8 different forms, four each in the tocopherol and tocotrienol categories. Alpha-tocopherol, one of the most-studied forms of vitamin E, dramatically slows age-related telomere shortening, even in the presence of powerful oxidant molecules such as hydrogen peroxide.13,14 This has been proven to result from a tocopherol-induced increase in telomerase that persists even into middle-aged cells.14 Similar results have been shown in cells treated with gamma-tocotrienol, which not only prevented telomere shortening but also enhanced the viability of older cells in culture.23

In a dramatic finding, incubating aging human cells with a tocotrienol-rich formulation reversed the aging-induced structural changes to cells to the point that they resembled younger cells, with less DNA damage and more cells ready for fruitful replication.24 Here again, the effects were attributable to increased telomerase activity.24

**Carotenoids Associated with Longer Telomeres**

Carotenoids are yellow pigment molecules closely related to Vitamin A. Their molecular structures promote their powerful antioxidant actions, though they also appear to have other effects.

Studies show that older people with higher plasma levels of the carotenoids lutein and zeaxanthin have significantly longer telomeres than those with lower levels.23 In people 20 years and older, a doubling of blood levels of alpha-carotene, beta-carotene, and beta-cryptoxanthin was associated with 2% longer telomeres.7 Those with the highest carotenoid levels had telomeres 5% to 8% longer than those in the lowest category.7

Intake of the carotenoid nutrients is also closely associated with longer telomeres, although this effect may depend to some extent on genetic factors related to carotene metabolism.26

**Summary**

While aging is a many-faceted process, a clear-cut biomarker for aging at the cellular level has been found in measurements of telomere length.

Shortening telomeres accelerate cellular aging, but nutrients that promote telomere repair and sustain telomere length have proven health benefits.

In recent years, we have learned that even common vitamins can have dramatic impact on the lengths of the telomeres in our cells, thereby powerfully decelerating aging at the cell, tissue, organ, and whole organism levels.

**B vitamins** preserve telomere length in part by lowering homocysteine, which accelerates telomere shortening.

**Vitamin D** promotes activity of telomerase, the repair enzyme that steadily adds to telomere length.

**Vitamins C and E** preserve telomere length by reducing the chemical stresses that contribute to telomere shortening. **Gamma-tocotrienol** in particular may reverse telomere shortening and attendant cellular aging.

Finally, the vegetable carotenoids, such as lutein, contribute to longer telomeres, though mechanisms for these effects remain to be discovered.

Without question, supporting a well-rounded diet with ample basic vitamins has emerged as an invaluable antiaging intervention.●

---

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
Fish Oil Favorably Influences Telomere Length

A study measured telomere length in humans given fish oil supplements. The results showed that reducing plasma levels of omega-6 fats coupled with increased omega-3s (from fish oil) resulted in an increase in telomere lengths. The scientists attributed this telomere length increase to reductions in inflammatory cytokines and oxidative stress brought on by higher levels of omega-3s in relationship to pro-inflammatory omega-6s.

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

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

References

Cure Aging in **Your Lifetime?**

An ambitious project has been launched to develop proprietary therapies to reverse biological aging in humans.

Age Reversal Therapeutics, Inc. has been formed to initiate clinical trials aimed at transforming elderly humans into functionally younger individuals. Special emphasis will be made to meaningfully reverse immune senescence.

Our mission is to duplicate systemic rejuvenation that has already been demonstrated in the animal model.

**Huge Investment Potential!**

Can you imagine the financial return that early investors will see if Age Reversal Therapeutics, Inc. succeeds in commercializing exclusive therapies to reverse pathological aging?

Not only would virtually all people over age 60 want it, but Medicare might mandate and pay for it in everyone over age 70.

Healthcare for elderly people will cost Medicare trillions of dollars. A therapy that restores youthful immune and other organ functions may enable meaningful reductions in future Medicare outlays.

**How You Can Participate**

Opportunities to invest in this scientific endeavor are limited to accredited investors. This requires a minimum net worth of around $1.5 million and/or annual income over $300,000.

The initial common stock offering is $5 a share. The minimum purchase requirement is 5,000 shares ($25,000). We expect high net worth individuals that want human age reversal research to accelerate will invest substantially more.

**How to Invest**

Please visit our website www.agingcure.com where you can view a presentation made at a scientific conference about this age reversal initiative. You can also read the Private Placement Memorandum at the agingcure.com website.

Management is available to answer your questions. You can contact Chief Operation Officer Doug Gass at doug@agingcure.com or call 1-866-554-7108.

Our strength is in our numbers and fierce dedication to achieving this biomedical advance. Together we can change the world.

---

**THIS ARTICLE DOES NOT CONSTITUTE AN OFFER TO SELL OR THE SOLICITATION OF AN OFFER TO PURCHASE SECURITIES TO ANY PERSON IN ANY JURISDICTION. THE SECURITIES TO BE ISSUED IN OUR RULE 506(C) OFFERING WILL NOT BE REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY OTHER LAW OR REGULATION, AND ONLY ACCREDITED INVESTORS, AS DEFINED IN 17 C.F.R. 230.501(a), MAY PURCHASE THEM. NO MONEY OR OTHER CONSIDERATION IS BEING SOLICITED, AND IF SENT, WILL NOT BE ACCEPTED; NO SALES WILL BE MADE OR COMMITMENTS TO PURCHASE ACCEPTED UNTIL THE FINAL CONFIDENTIAL PRIVATE PLACEMENT MEMORANDUM AND ALL RELATED DOCUMENTS HAVE BEEN COMPLETED AND REVIEWED AND EXECUTED, AS APPLICABLE, BY ANY PROSPECTIVE INVESTOR. A PROSPECTIVE PURCHASER'S INDICATION OF INTEREST IS NON-BINDING. ANY INDICATION OF INTEREST BY A PROSPECTIVE PURCHASER MAY BE WITHDRAWN OR REVOKED, WITHOUT OBLIGATION OR COMMITMENT OF ANY KIND, AT ANY TIME. IN THE EVENT THAT YOU ARE INTERESTED IN CONSIDERING AN INVESTMENT IN AGE REVERSAL THERAPEUTICS, INC., AND IN THE EVENT THAT WE DETERMINE TO OFFER YOU THE OPPORTUNITY TO PARTICIPATE IN SUCH INVESTMENT, YOU WILL BE PROVIDED WITH A CONFIDENTIAL PRIVATE PLACEMENT MEMORANDUM.**
Are You Getting The Maximum Potency From Your Daily Vitamin?

Life Extension®’s Two-Per-Day formulas are the highest potency multivitamins on the market. Compared to Centrum® Silver® Adults 50+, Two-Per-Day provides:

- 50 times more vitamin B1
- 12 times more vitamin B12
- 25 times more vitamin B6
- 10 times more biotin
- 10 times more selenium
- 8 times more vitamin C
- 2 times more vitamin D
- 2 times as much vitamin E
- 2.7 times as much vitamin B3
- 3 times as much zinc

Centrum® Can’t Compete

Life Extension®’s Two-Per-Day contains superior forms of nutrients such as 5-MTHF that is up to 7 times more bioavailable than folic acid. Now with apigenin, which has been shown to ease inflammation and support healthy cell growth*

Does your multivitamin measure up?

Two-Per-Day beats Centrum® in 10 ways!

Two-Per-Day Capsules
Item #02114 • 120 capsules (2-month supply)

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$22</td>
</tr>
<tr>
<td></td>
<td>$16.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$15 each</td>
</tr>
</tbody>
</table>

Two-Per-Day Tablets
Item #02115 • 120 tablets (2-month supply)

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$20</td>
</tr>
<tr>
<td></td>
<td>$15</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$13.50 each</td>
</tr>
</tbody>
</table>

Non-GMO
Contains soybeans.

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

For the complete list of ingredients, trademarks, cautions, references, dosage and use, please visit www.LifeExtension.com. Two-Per-Day provides a small amount of gamma tocopherols as part of natural mixed tocopherols, which include natural vitamin E.

* Future Oncol. 2013 Sep;9(9):1353-64

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

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.
In his new book, *The DNA Restart*, Sharon Moalem, MD, PhD, describes an idea that seems obvious, but helps explain why so many millions of people fail to lose weight, reduce markers of disease, and reverse aging. According to Dr. Moalem, most diets and healthy lifestyle plans fail to take into account that every human on earth is not only genetically individual, but that we descended from unique gene pools that adapted to specific and diverse environments.

Dr. Moalem created the DNA Restart program so we can each easily identify our unique genetic heritage and create a diet and lifestyle plan that caters to it.

**LE:** In your book, you write about how our modern lifestyles ignore the hard-won lessons of our own DNA. What’s wrong with the way most people approach nutrition, dieting, and weight loss?

**SM:** Up until now, most people have essentially been eating blind, without any personalized genetic wisdom to guide us. Our modern lives are simply out of touch with our DNA. As a physician and scientist, I’ve spent the last 20 years researching the ways history, our genes, and the choices we make in our lifetimes intersect.

In researching for my book, I spent two years traveling the globe. The more I explored, the more I learned how ancient methods of food production and preparation, such as fire and fermentation, played a decisive hand in reshaping the genes our ancestors subsequently passed down to us.
Each one of our genetic ancestors faced the same challenge—survival. The results of each of these struggles are encoded in our genes today. A simple example is if you can enjoy dairy products as an adult, then it’s a sign that your ancestors kept animals in order to drink their milk and they gave you the genetics to do so as well. But as we’ve come to see with the explosion of the availability of dairy products worldwide and the dietary problems this has created, we didn’t all inherit the same genetic knowledge.

**LE:** Let’s talk specifics. Your DNA Restart program is built on five pillars. The first one of these involves “genetic self-tests” that help people figure out exactly what they should be eating. How does this work without expensive genome testing?

**SM:** As you may know, most people who lose weight by dieting don’t keep it off over the long term. As a physician, I have seen most diets fail because of two important flaws. The first is simply the mind-numbing, restrictive lack of a variety of food and meal choices. However, the second and most important is that, until now, there hasn’t been a single diet that is designed with every single person on this planet in mind. Each one of us is completely unique.

What this means is that very few people are actually eating intentionally and methodically for their own genes. But that’s about to change. My DNA Restart self-tests are designed to hit upon the highest-yielding, scientifically based results, and they can be done easily at home. Since genomic testing doesn’t always tell you what your individual genes are doing within your body, I’ve developed functional genetic tests that let you know how your genes are actually behaving in real time and what that means for you and your diet.

As an example, the first and most important of these genetic self-tests is an incredibly powerful tool that allows you to individualize your carbohydrate intake levels. It all begins with your saliva. Many people have an enzyme within their saliva called amylase, which has the ability to cut apart big and bulky starch molecules into simpler sugars. So some of us have supercharged saliva full of amylase as a result of inheriting multiple copies of the gene *AMY1*, while some people don’t have any at all. For those people with no *AMY1* genes and therefore no amylase, breaking down carbohydrates is metabolically daunting and physiologically stressful.

And guess what? The amount of amylase in your saliva is not random. It’s actually highly dependent upon where your own unique genetic ancestors hail from. Simply put, if you come from ancestors who relied heavily on starches, such as farmers growing cereal grains, you’ll likely have been gifted with the genetics to make more amylase by inheriting multiple copies of the gene *AMY1*. If your recent genetic ancestors, on the other hand, were more into meat than potatoes, you might not have the genetic knowledge to make as much amylase. The more starch your ancestors ate in their daily diet over generations, the more amylase you are likely to have in your saliva. It’s as simple as that.
I believe that eating out of sync with our genes is the reason some people are more prone to developing obesity and insulin resistance than others, even when eating identical meals, in both portion-size and content, and research is beginning to back this up: people with the lowest amount of amylase are actually much more likely to be obese when eating a starch-heavy diet.

But here’s the good news... you can test for how much amylase you have in your saliva with a simple at-home test using only an unsalted saltine cracker (or a dime-sized piece of potato if you’re gluten free) and a timer. All you do is time how long it takes to detect a change in taste when you’re chewing either the saltine or the potato. The faster the taste changes, the more carbohydrates you can handle.

**LE:** You write in your book that the DNA Restart program has helped people shed years and look younger. How does it accomplish this?

**SM:** When it comes to genetic aging, the latest complex genetic research can be distilled succinctly: the better you take care of both your mitochondrial and genomic DNA, the longer you will live. Over time, we all inevitably accumulate various types of damage to our inherited genetic material. We used to think this was an unavoidable consequence of life, but thankfully, when it comes to genetics, things are not always as they initially appear. We now know that our genetic code is much more robust, resilient, and malleable than we could have ever imagined. We are now discovering that it’s even possible to reverse genetic aging.

To accomplish this, we have to do two things. The first is to prevent as much DNA-aging damage as possible, and the second is to powerfully activate your body’s own innate antiaging system.

**LE:** How can people do this?

**SM:** When it comes to genetic aging, the balance is between damage and repair. Promoting repair is just as important as preventing damage in the first place.

The first step is consistently adhering to the DNA Restart approved exercise program, which can help turn back your genetic clock and lower your risk of becoming susceptible to certain cancers. Next comes eating a diet high in phytonutrients, which I outline in prescriptive detail in my book. Particular fruits, vegetables, and spices all contain a rich and varied cornucopia of phytonutrients. When we eat or drink specific phytonutrients, we’re filling our bodies with their unique genetic and chemical wisdom.

Other important steps involve eating the right mix of fats, with an emphasis on omega-3 fatty acids, and consuming lots of high-quality extra virgin olive oil. We’ve only recently begun to understand that many of the benefits of extra virgin olive oil are actually happening on a genetic level. I also recommend eating four 1 ounce servings of nuts every week, along with DNA Restart approved legumes, which are a very unique and rich source of isoflavonoids and phytosterols.

Finally, it’s important that we pay attention to how our food is prepared. Deep-fat frying is absolutely forbidden on The DNA Restart, for a variety of reasons which I expand upon in the book. I also caution against using high-temperature cooking. When food is exposed to temperatures as high as 400˚F, it creates hundreds of new pro-inflammatory compounds which can cause DNA damage. Instead, I recommend stewing your proteins at lower temperatures whenever possible, which reduces the development of...
pro-inflammatory advanced glycation end-products, and always marinating proteins in red wine or lemon juice prior to cooking. Why marinating? Research has shown that marinating with wine prior to cooking can reduce certain types of heterocyclic amines by up to 88%. Lemon juice will also help, as making protein dishes more acidic has also been shown to reduce the amount of advanced glycation end-products.

**LE:** One of the really interesting parts of your program was the section on the “fifth” taste, or umami. Umami is the experience of when foods taste delicious or savory. You mention that umami is the “real linchpin” in the DNA Restart program and eating more will help get your diet sharply realigned with your genes. Why is umami so important?

**SM:** I call umami a “satiety bomb” for a good reason: it’s one of the most potent ways to guide us back to increased feelings of satiety. It uniquely does this by imparting flavors that linger long and strong in our mouths, way after we’re done eating. Natural umami signals our bodies through genetic means that the food we are consuming is abundantly nutritious and full of specific amino acids that are essential for a healthy life.

I believe that our genetic ability to taste umami, and the reason it triggers satiety, is that umami signals to our bodies that the food we are consuming contains important proteins that have been shattered into their basic amino acid building blocks. Umami is mainly triggered by the amino acids glutamate and to a lesser degree aspartate (as well as the 5-ribonucleic acids guanylate and inosinate). Glutamate and aspartate are naturally found in proteins and are released and trigger the taste of umami when the proteins that contain them have undergone some type of food preparation process.

Umami can be found in many foods, although many plants are not rich in umami (tomatoes are a giant exception). Umami-rich foods include mushrooms, miso and tamari, hard cheeses and fermented milk products like yogurt, anchovy paste and sardines, and many others. Overall, to get us to our ideal weight we need to be eating umami with each and every meal.

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
THE NEXT-GENERATION POMEGRANATE FORMULA

Pomegranate Complete combines extracts from the whole fruit and flower along with pomegranate seed oil to support system-wide health. And it augments these polyphenols with newly discovered compounds from other parts of the pomegranate plant to help fight inflammation and to combat age-related metabolic changes.

Pomegranate Complete
Item #01953 • 30 softgels • Non-GMO

<table>
<thead>
<tr>
<th></th>
<th>Retail</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$24</td>
<td>$18</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$15.75 each</td>
</tr>
</tbody>
</table>

To order Pomegranate Complete, call 1-800-544-4440 or visit www.LifeExtension.com

POMELLA® extract is covered under U.S. Patent 7,638,640 and POMELLA® is a registered trademark of Verdure Science, Inc.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Providing Trusted Prescription Compounding for Over 40 Years

*Full Compounding Lab
*Full Retail Pharmacy
*Bio-identical Hormone Replacement Therapy
*Free Standard Delivery/Shipping
*Durable Medical Equipment
*Trilingual (English, Spanish, French)
*Licensed to ship into 42 States

Did you know we carry a full line of PET products? Mention this AD and receive 10% off your first order!

PH: 877-877-9700 FAX: 866-892-3432

4401 Sheridan St. | Hollywood, Fl 33021
www.POSTHASTEPHARMACY.com
AN AMERICAN HERO...

Paul Mason’s Mission to Educate Humanity about MAGNESIUM

For the past 25 years, Paul Mason’s life mission has been to persuade the world to consume more magnesium. His campaign is reminiscent of the slow battle to educate mainstream medicine that higher vitamin D levels are needed to reduce all-cause mortality.

Recently, Mason talked to Life Extension Magazine® about his tireless efforts and how he discovered America’s only known source of natural, magnesium-abundant, high-pH mineral water.

Paul Mason is an American hero who has tirelessly exposed the huge numbers of needless deaths caused by magnesium deficiency in the United States. One way Paul accomplished this was to amalgamate a number of published studies to show the lethal impact on human populations when there is insufficient magnesium in their drinking water.
Mason loves to point to recently published evidence demonstrating that universally increased magnesium intake could prevent an astounding **4.5 million deaths** worldwide, annually.¹ In an effort to stop this epidemic, he has distributed up to 15 million gallons of naturally sourced, magnesium-rich mineral water each year for the last 20 years from his Adobe Springs Water Company in the mountains of central California.

“And I’m now working to develop an additional 50 million gallons per year of magnesium-rich water from nearby lands,” he told us.

For many years, he has tried to convince the FDA—to no avail—and producers of bottled water and soft drinks worldwide that simply adding magnesium to their beverages would provide most people with at least the government’s recommended intake of this lifesaving mineral. If bottlers prefer to market bottled water that is naturally rich in magnesium, he will gladly supply them with bulk water from his state-licensed and inspected springs.

**Discovering America’s Richest Water-Source of Magnesium**

Paul first began investigating how thoroughly widespread magnesium deficiency is—and collecting a vast online library of studies showing how magnesium greatly reduces the risk of cardiovascular disease—shortly after he accidentally discovered the magnesium-rich springs near Patterson, California. Crunching the numbers, he estimates his water saves about 90 lives a year by preventing heart attack and stroke.

It all started in 1992 when Paul bought a property in Central California named Adobe Canyon, which he says resembles a miniature Grand Canyon. After he cleared the property, he discovered it contained a huge underground spring. He had the water lab-tested to ensure it was safe. When the test came back showing high levels of magnesium, he asked the chemist, “Is that good or bad?” The chemist responded, “Oh that’s good, but unheard of.”

So Paul started emailing magnesium researchers that the Adobe Springs had unheard-of magnesium abundance of **110 mg** per liter, combined with an extremely low **6.3 mg/L** sodium content and a healthy **pH** of **8.4** and great flavor, too. Then the researchers started coming to see the Adobe Springs as a wonder of the world, and they convinced Paul Mason of the lifesaving benefits of magnesium.

It took five years of work at Adobe Springs to install tanks and 6” pipes, build a loading dock, and find the first bottler, which was challenging in 1992 when few people drank bottled water.

Paul notes that, in 2009, the World Health Organization finally recommended that all drinking water should contain at least **25 mg** of magnesium per liter to prevent heart attacks and stroke.²

**Gathering the Evidence**

Mason’s online library now provides access to over 300 studies on magnesium, documenting that even small amounts of magnesium in drinking water—often just **5-20 mg** per liter—can reduce the incidence of mortality and heart disease. The underlying reason for this is the widespread magnesium deficiency that results from increased consumption of processed foods, water purification processes that remove natural minerals, and mineral-depleted soil.

For about 20 years, he has financially supported researchers worldwide who investigate magnesium and the critical need for
this mineral. He names several scientists who receive monthly grants from him and then adds:

“...in 2015, I created the Magnesium For Health Foundation and also brought together 12 magnesium scientists from all over the world to exchange knowledge at a conference in San Francisco—I hope to do the same thing in 2017.”

Studies continue to validate Mason’s urgent advice to the world that consuming more magnesium could save millions of lives every year. Regrettably, few have bothered to pay attention.

Public Awareness: “There Is a Long Way to Go”

Low blood levels of magnesium are considered to be one of the most underdiagnosed blood chemical deficiencies in modern medicine.9 For this reason, it is important to have blood magnesium levels tested regularly and to supplement when necessary.

“Life Extension Magazine has certainly helped raise public awareness,” explains Mason. “But there is a long way to go.”

Some pharmaceuticals change the way magnesium is utilized by the body by inhibiting nutrient absorption, synthesis, transport, metabolism, and excretion.4,5 Processed and snack foods often have the magnesium processed right out of them.6 Aging itself has been linked with declining magnesium in human cells.7 And as Mason stresses, many Americans drink filtered or bottled water, which in the US contains only 10% as much magnesium as bottled water in the rest of the world.8

Most Americans ingest an average of about 270 mg of magnesium a day, well below the modest RDA levels—420 mg for adult males and 320 mg for adult females—which will generate a substantial cumulative deficiency over months and years.9 Older individuals are at elevated risk of becoming magnesium-depleted,10 and substantial deficiency is common by age 50. Deficiency can reach severe levels among those with any condition that causes frequent loose stools, including celiac disease and bowel resection surgery. And as Mason points out, insufficient vitamin D levels can exacerbate magnesium deficiency.11

Compelling research shows that for each 0.25 mg/dL increase in plasma magnesium, the risk of sudden cardiac death falls by 41%.13 Another study found that adults with a magnesium intake lower than the recommended amount were up to 1.75 times more likely to have elevated C-reactive protein,14 a blood marker for inflammation that predicts the likelihood of a heart attack or stroke. Among adults already at high risk of cardiovascular disease, those who had the highest magnesium intakes were demonstrated to have a 34% reduction in mortality risk relative to those having the lowest intake.15

Accumulating evidence also suggests that low magnesium intake and levels drastically accelerate the aging process and affect lifespan.13,16-18 Lab culture studies show that low magnesium accelerates the senescence of some human cells,19 prompting the scientists behind one study to write, “...we propose that broadly correcting nutritional intakes of Mg might contribute to healthier aging and the prevention of age-related diseases.”19 In fact, research suggests that magnesium is absolutely essential for repairing telomeres, the aging-timers found on DNA strands.20

Magnesium: Deficiency Symptoms and Dosage Information

Magnesium is the fourth most abundant electrolyte in the human body.22 The recommended dietary allowance, or RDA, for magnesium is 420 mg a day for adult men and 320 mg a day for adult women. The magnesium RDA refers to elemental magnesium, defined as the amount of magnesium, regardless of its source or form.

Most people fail to achieve the RDA, which can cause magnesium deficiency.9 Older individuals are at higher risk of deficiency.10 Deficiency symptoms can include abnormal heart rhythms, restless leg syndrome, sleep disorders, insomnia, muscle spasm, confusion, and even seizures.23

The mineral water available at Adobe Springs contains 110 mg of magnesium a liter, unparalleled among America-sourced mineral waters. Mineral water is defined by the FDA as water from a natural, protected, underground source that contains at least 250 parts per million, or ppm, (mg/L) of total dissolved solids consisting of minerals and trace elements—Adobe Springs water contains 500 ppm (mg/L) of total dissolved solids.24

Magnesium supplements are among the least expensive nutrient. The most common adverse reaction from the use of magnesium supplements is diarrhea.23
Scientists have associated higher magnesium levels with a 40% lower risk of death from cardiovascular disease, a 77% reduced risk of sudden cardiac death, a 50% decreased risk of cancer, and 40% lower risk of death from all causes.

Reduced Magnesium Bioavailability from Food

These shocking statistics strongly support Mason’s mission to increase magnesium intakes—especially in light of research reporting that, “In developed countries, the magnesium intake is often marginal.” But focusing on different dietary choices does not appear to be the answer.

“Magnesium in food is less bioavailable than from water because of interference from dietary fat, fiber, competing minerals, and so on,” he explains. Research backs him up. One published study found that magnesium is more quickly and better absorbed from magnesium-rich water than from food.

Most Americans don’t have Mason’s access to his Adobe Springs mineral water and the coffee he makes from it each day. But he added, “I also take Life Extension® magnesium supplements when I’m traveling,” and he suggested that all Americans without access to his water do the same. He also invited readers who find themselves in the area to bring their own bottles to the Adobe Springs free spigot near Patterson, California, and load up on magnesium-rich water.

For most of us, however, mineral supplements are critical. Fortunately, they’re among the least expensive on the market. Maybe that’s why they’re not generally promoted as the lifesaving nutrient they represent. And as Mason has experienced firsthand, the federal government has repeatedly suppressed magnesium’s importance in countering today’s heart attacks and strokes.

Although cheap magnesium supplements are an easy solution, this unsung hero would love to see more people with daily access to magnesium-rich, low-sodium, high-pH water. Both Mason and his staff have taken a vow to maintain modest lifestyles so that resources can stay focused on developing magnesium-rich water sources worldwide.

“I live in a 40-year-old doublewide and drive a 12-year-old pickup,” he adds.

“I think there will be an increasing demand for magnesium-rich water, so I’m hoping to develop more sources from magnesium-rich aquifers. My fine crew at the Adobe Springs is onboard...and if any reader knows of a spring, creek, or aquifer having at least 25 mg of magnesium per liter, I’d like to know about it—so we can save even more lives.”

Preventing 150,000 Deaths

According to the US National Academy of Sciences (1977), there have been more than 50 studies in nine countries that have indicated an inverse relationship between water hardness and mortality from cardiovascular disease. That is, people who drink water that is deficient in magnesium and calcium generally appear more susceptible to this disease. The US National Academy of Sciences has estimated that a nationwide initiative to add calcium and magnesium to soft water might reduce the annual cardiovascular death rate by 150,000 in the United States.
Readers can access Paul Mason’s vast online collection of magnesium studies at http://www.mgwater.com/ and if in the area, can pick up Adobe Springs water at the free roadside spigot at 19,000 Del Puerto Canyon Road, Patterson, CA. See the map for directions.

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

References

BROCCOMAX®
THE SULFORAPHANE GENERATOR™

AN ULTIMATE LIVER & CELLULAR DETOXIFIER & PROTECTOR*

Broccoli (Brassica oleracea spp.) is associated with antioxidant and cellular protection due to its components glucoraphanin (GR), aka sulforaphane glucosinolate (SGS), and myrosinase which together produce sulforaphane, a powerful, beneficial electrophile and inducer of the liver’s potent Phase 2 Detoxification System.*

Jarrow Formulas’ BroccoMax® contains a standardized concentration of SGS and the myrosinase enzyme from broccoli seeds that have been processed using ultra clean super critical CO2 technology. Vitamin C (as calcium ascorbate) catalyzes the sulforaphane generating action of the myrosinase enzyme.

BroccoMax® is delivered in delayed release vegetarian capsules.

To order Jarrow Formulas’ BroccoMax® 60 veggie caps, Item # 26576
Call 1-800-544-4440 or visit www.LifeExtension.com
Retail price $26.95 Your price $20.21

MAD IN USA

*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.

VISIT US AT WWW.JARROW.COM FOR MORE PRODUCT INFORMATION © 2016 Jarrow FORMULAS®
We have always been about Science.

Choosing scientifically researched strains, delivering them alive, and stimulating their growth are keys to an effective probiotic.

On each of our probiotic supplements, we list strain designations for easy reference to related scientific and clinical studies. Not all probiotic strains are created equal and knowing the strains name is not enough, you need to be able to verify the identity of the exact strain. In addition to choosing quality strains that are backed with research, they must be delivered through the acidic stomach and can lose potency if not protected properly.

Master Supplements utilizes a natural carbohydrate derived from seaweed that forms a protective shell in the stomach but dissolves in the small intestine at a higher pH level, allowing the acid-sensitive probiotics to arrive alive at full strength in the G.I. tract.

Upon arrival, our patented prebiotic LactoStim®, which is composed of two food grade natural lipids, helps rehydrate the fragile, freeze-dried probiotic cells. This allows quick bioavailability and gives the probiotics a distinct advantage in the very competitive environment of the microbiome. The unique technology behind our formulas is protected by 17 US Patents.

We have been helping people with digestive and immune health since 2003. We are so confident that you will feel a difference by using our products that we offer a 60 day, 100% money back guarantee.

Call your Life Extension® Wellness Specialist to learn more.

Call Life Extension to place your order today.
www.LifeExtension.com 1-800-544-4440

master-supplements.com

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.
Blood testing provides the ultimate information regarding correctable risk factors that may predispose you to disorders such as cancer, diabetes, cardiovascular disease, and more. Information about general health and nutritional status can also be gained through standard blood analysis. Standing behind the belief that blood testing is an essential component of any program designed to attain optimal health and longevity, Life Extension offers this innovative and convenient service at a very affordable price. Not only is comprehensive blood testing an important step in safeguarding your health, it is a simple process from virtually anywhere in the United States.

Five Easy Steps:
1. Call 1-800-208-3444 to discuss and place your order with one of our knowledgeable Wellness Specialists. (This order form can also be faxed to 1-866-728-1050 or mailed). Online orders can also be placed at www.lifeextension.com.
2. After your order is placed, you will be mailed either a requisition form to take to your local LabCorp Patient Service Center or a Blood Draw Kit; whichever is applicable (Please note: If a blood draw kit is used, an additional local draw fee may be incurred.)
3. Have your blood drawn.
4. Your blood test results will be sent directly to you by Life Extension.
5. Take the opportunity to discuss the results with one of our knowledgeable wellness specialists 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 Customers:
For those residing in the Ft. Lauderdale, Florida, area, blood-draws are also performed at the Life Extension Nutrition Center from 9:00 am to 2:00 pm Monday through Saturday. Simply purchase the blood test and have it drawn with no wait! Our address is 5990 North Federal Highway, Ft. Lauderdale, FL, 33308-2633.

COMPREHENSIVE PANELS
- **MALE LIFE EXTENSION PANEL (LC322532)** $269
  - CBC/Chemistry Profile (See description)
  - C-Reactive Protein
  - Homocystine
  - DHEA-S
  - Free Testosterone
  - TSH for thyroid function
  - Total Testosterone
  - Estradiol
  - PSA (prostate-specific antigen)
  - Vitamin D 25-hydroxy
  - Hemoglobin A1c

- **FEMALE LIFE EXTENSION PANEL (LC322535)** $269
  - CBC/Chemistry Profile (See description)
  - C-Reactive Protein
  - Homocystine
  - DHEA-S
  - Free Testosterone
  - TSH for thyroid function
  - Total Testosterone
  - Estradiol
  - Progesterone
  - Vitamin D 25-hydroxy
  - Hemoglobin A1c

- **FEMALE HORMONE REPLACEMENT PANEL (LC100032)** $189
  - CBC/Chemistry Profile (see description), Estradiol, Estrone, Free and Total Testosterone, DHEA-S, Progesterone, TSH, and Insulin

- **WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028)** $275
  - CBC/Chemistry profile (see description), DHEA-S, Free and Total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Free T4, Reverse T3, Insulin, Hemoglobin A1c, Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), and Ferritin.

- **MALE ELITE PANEL* (LC100016)** $575
  - CBC/Chemistry Profile (see description), Free and Total Testosterone, Total Estrogens, Estradiol, DHEA-S, Progesterone, Pregnenolone, DHT, FSH, LH, TSH, Free T3, Free T4, Reverse T3, Free and Total PSA, IGF-1, SHBG, Vitamin D 25-OH, hs-CRP, Ferritin, Homocystine

- **FEMALE ELITE PANEL* (LC100017)** $575
  - CBC/Chemistry Profile (See description), Free and Total Testosterone, Total Estrogens, Estradiol, DHEA-S, Progesterone, Pregnenolone, DHT, FSH, LH, TSH, Free T3, Free T4, Reverse T3, IGF-1, SHBG, Vitamin D 25-OH, hs-CRP, Ferritin, Homocystine

- **MALE HORMONE ADD-ON PANEL (LCADDMM)* $120
  - Pregnenolone and Dihydrotestosterone (DHT)
  - To provide an even more in-depth analysis of a man’s hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel.

- **FEMALE HORMONE ADD-ON PANEL (LCADDFF)* $125
  - Pregnenolone and Total Estrogens
  - To provide an even more in-depth analysis of a woman’s hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel.

- **COMPREHENSIVE THYROID PANEL (LC100018)** $198
  - TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA

- **LIFE EXTENSION THYROID PANEL (LC304131)** $75
  - TSH, T4, Free T3, Free T4

- **THYROID PANEL WITH REVERSE T3 (LC100044)** $120
  - TSH, T4, Free T3, Free T4, Reverse T3

- **THE CBC/CHEMISTRY PROFILE (LC381822)** $35
  - Note: This CBC/Chemistry Profile is included in many Life Extension panels. Please check panel descriptions.

- **CARDIOVASCULAR RISK PROFILE**
  - Total Cholesterol
  - HDL Cholesterol
  - LDL Cholesterol
  - Triglycerides

- **LIVER FUNCTION PANEL**
  - AST (SGOT)
  - ALT (SGPT)
  - ALDH
  - LDH

- **KIDNEY FUNCTION PANEL**
  - BUN
  - Creatinine Ratio
  - Creatinine
  - Uric Acid

- **BLOOD PROTEIN LEVELS**
  - Total Protein
  - Albumin

- **BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE**
  - Red Blood Cell Count
  - White Blood Cell Count
  - Eosinophils
  - Basophils
  - Lymphs (Absolute)
  - Monocytes (Absolute)
  - Eos (Absolute)
  - Baso (Absolute)
  - Polynucleated Cells
  - RDW

- **BLOOD MINERAL PANEL**
  - Calcium
  - Potassium
  - Phosphorus

- **MALE COMPREHENSIVE HORMONE PANEL* (LC100010)** $299
  - CBC/Chemistry Profile, DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.

- **FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011)** $299
  - CBC/Chemistry Profile, DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.

- **FOOD SAFE ALLERGY TEST** $(LM73001)** $198
  - This test measures delayed (IgG) food allergies for 95 common foods.

- **STRESS MANAGEMENT PROFILE (LC100043)** $125
  - Cortisol AM/PM, DHEA-S, Glucose, Insulin, Progesterone, Free T3, Lipid Panel.

- **ADRENAL STRESS PROFILE-SALIVA** $(LC100046)** $175
  - Cortisol X4, DHEA-S, Cortisol AM/DHEA-S ratio, Secretory IgA.

- **BASIC CORTISOL PROFILE-SALIVA** $(LC100047)** $129
  - Cortisol X4 to measure cortisol rhythm over time.

- **SLEEP HORMONES PROFILE-SALIVA** $(LC100048)** $175
  - Cortisol and Melatonin plus ratio.

- **MTHFR/COMT GENETIC METHYLATION PROFILE** $(LC100045)** $149
  - Tests for genetic mutations in MTHFR and COMT.
**HEALTHY AGING PANEL-COMPREHENSIVE** *(LC100026)*  
CBC/Chemistry profile, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Homocysteine, Vitamin D25-hydroxy, Hemoglobin A1c, TSH, Free T3, Free T4, Ferritin, Urinalysis, Fibrinogen, and Insulin.  
* $249

**HEALTHY AGING PANEL-BASIC** *(LC100025)*  
CBC/Chemistry profile, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Vitamin D25-hydroxy, Hemoglobin A1c, TSH, Ferritin, and Insulin.  
* $149

**NMR LIPOPROFILE** *(LC123810)*  
The NMR Lipoprofile directly measures LDL particle size and number as well as HDL particle number, total cholesterol, and triglycerides. It also provides a calculation of one's risk of insulin resistance by assessing abnormalities in lipoprotein markers.  
* $99

**ANEMIA PANEL** *(LC100006)*  
CBC/Chemistry Profile, Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate  
* $79

**AUTOIMMUNE DISEASE SCREEN** *(L100041)*  
ANA screen, hs-CRP, TNF-alpha, Immunoglobulins, IgA, IgG, IgM  
* $199

**DIABETES MANAGEMENT PROFILE – COMPREHENSIVE** *(LC100040)*  
Hemoglobin A1c, Glucose, Insulin, Lipid Panel, Glycmark  
* $129

**DIABETES MANAGEMENT PROFILE – BASIC** *(LC100039)*  
Hemoglobin A1c, Glucose, Insulin  
* $39

**ADVANCED CARDIAC BIOMARKERS** 

**ADVANCED OXIDIZED LDL PANEL** *(LC100035)*  
This panel looks at vascular inflammatory biomarkers, beginning with lifestyle choices to the development of metabolic as well as cardiovascular disease and the formation of vulnerable plaque. The panel contains the following tests: F2-Isoprostanes, Myeloperoxidase, and Oxidized LDL.  
* $285

**OXIDIZED LDL PANEL** *(LC100034)*  
This panel looks at vascular inflammatory biomarkers, beginning with the development of metabolic as well as cardiovascular disease and the formation of vulnerable plaque. The panel contains the following tests: Myeloperoxidase and Oxidized LDL.  
* $175

**OMEGA CHECK** *(LCOMEGA)*  
Provides valuable information on your risk of developing heart disease, sudden heart attack and cardiac death. The Omega Check™ also includes your AA:EPA ration allowing you to determine and track a major factor in total body inflammation.  
* $131.25

**HORMONES** 

**DHEA-SULFATE** *(LC004020)*  
This test shows if you are taking the proper amount of DHEA.  
* $61

**MALE BASIC HORMONE PANEL** *(LC100012)*  
DHEA-S, Estradiol, Free and Total Testosterone, PSA  
* $75

**FEMALE BASIC HORMONE PANEL** *(LC100013)*  
DHEA-S, Estradiol, Free and Total Testosterone, Progesterone  
* $75

**DIHYDROTESTOSTERONE (DHT)** *(LC500142)*  
Measures serum concentrations of DHT.  
* $50

**ESTRADIOL** *(LC004515)*  
For men and women. Determines the proper amount in the body.  
* $33

**INSULIN FASTING** *(LC004333)*  
Can predict those at risk of diabetes, obesity, heart and other diseases.  
* $29.90

**PREGNENOLONE** *(LC140707)*  
Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing’s syndrome.  
* $116

**PROGESTERONE** *(LC004317)*  
Primarily for women. Determines the proper amount in the body.  
* $55

**SEX HORMONE BINDING GLOBULIN (SHBG)** *(LC082016)*  
This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens.  
* $33

**GENERAL HEALTH** 

**VITAMIN D (250H)** *(LC081950)*  
This test is used to rule out vitamin D deficiency.  
* $47

**FERRITIN** *(LC004598)*  
Ferritin levels reflect your body’s iron stores and is also a biomarker for insulin resistance.  
* $28

**PSA (PROSTATE SPECIFIC ANTIGEN)** *(LC010322)*  
Screening test for prostate disorders and possible cancer.  
* $31

---

**ORDER LIFESAVING BLOOD TESTS FROM VIRTUALLY ANYWHERE ANYWHERE IN THE US!**

**TERMS AND CONDITIONS**

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

**Signature**

___

**CUSTOMER NO.**

---

**MAIL YOUR ORDER FORM TO:**

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

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

**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 & Vascular Support**
- Advanced Olive Leaf Vascular Support with Celery Seed Extract
- Arterial Protect
- Blood Pressure Monitor Arm Cuff
- Dual Action Blood Pressure
- Endothelial Defense® with Pomegranate Complete and CORDIART™
- Endothelial Defense™ with GliSODin®
- Natural BP Management
- NitroVasc with CORDIART™
- Pomegranate Complete
- Pomegranate Fruit Extract
- Triple Action Blood Pressure AM/PM
- VenoFlow

**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

**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 (dimethylaminoethanol)
- Dopa-Mind™
- Ginkgo Biloba Certified Extract™
- Huperzine A
- Lecithin Granules
- Memory Protect
- Migra-Eez™
- Neuro-Mag® Magnesium L-Theanine
- Neuro-Mag® Magnesium L-Theanine with Calcium and Vitamin D3
- Optimized Ashwagandha Extract
- Prevagen™
- PS (Phosphatidylserine) Caps
- Vinpocetine

**Cholesterol Management**
- Advanced Lipid Control
- Cho-Less™
- CHOL-Support™
- Red Yeast Rice
- Theaflavins Standardized Extract
- Vitamin B3 Niacin Capsules

**Digestion Support**
- Artichoke Leaf Extract
- Digest RC®
- Effervescent Vitamin C - Magnesium Crystals
- Enhanced Super Digestive Enzymes
- Enhanced Super Digestive Enzymes with Probiotics
- Esophageal Guardian
- Extraordinary Enzymes

**Energy Management**

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

**Fish Oil & Omegas**
- OMEGA FOUNDATIONS® Mega EPA/DHA
- OMEGA FOUNDATIONS® Mega GLA with Sesame Lignans
- OMEGA FOUNDATIONS® Super Omega-3 EPA/DHA with Sesame Lignans & Olive Extract
- OMEGA FOUNDATIONS® Super Omega-3 Plus EPA/DHA with Sesame Lignans, Olive Extract, Krill & Astaxanthin
- OMEGA FOUNDATIONS® Proven® Purified Omega-7
- OMEGA FOUNDATIONS® Vegetarian DHA
- Organic Golden Flax Seed

**Food**
- California Estate Extra Virgin Olive Oil
- 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® Decaf Roast
- Stevia Sweetener

**Glucose Management**
- CinSulin® with InSea2® and CromineX® 3+
- Megabio Forte
- Natural Glucose Absorption Control
- Tri Sugar Shield®

**Heart Health**
- Aspirin (Enteric Coated)
- BioActive Folate & Vitamin B12 Caps
- Cardio Peak™ with Standardized Hawthorn and Arjuna
- Fibrinogen Resist™ with Nattokinase
- Optimized Carnitine with GlycoCarn®
- Super Ubiquinol CoQ10
- Super Ubiquinol CoQ10 with BioPQQ®
- Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™
- Super-Absorbable CoQ10 Ubiquinone with d-Limonene
- TMG Powder
- TMG Liquid Capsules

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

**Immune Support**
- AHCC®
- Echinacea Extract
- Enhanced Zinc Loxogenses
- Immune Modulator with Tinofend®
- Immune Protect with PARACTIN®
- Immune Senescence Protection Formula™
- Linoko® Gold AHCC
- 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
- Ten Mushroom Formula®
- Zinc Lozenges

**Inflammation Management**
- 5-LOX Inhibitor with AprèsFlex®
- Advanced Bio-Curcumin® with Ginger & Turmerones
- Black Cumin Seed Oil
- Black Cumin Seed Oil with Bio-Curcumin®
- Boswella
- Cytokine Suppress™ with EGCG
- Nervia®
- Serrafflamylze
- Specially-Coated Bromelain
- Super Bio-Curcumin®
- Zyflamend® Whole Body

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

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

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

**Longevity & Wellness**
- Alpha-Lipoic Acid
- AMPK Activator
- AppleWise Polyphenol Extract
- Berry Complete
- Blueberry Extract
- Blueberry Extract with Pomegranate
PRODUCTS

CR Mimetic Longevity Formula
DNA Protection Formula
Enhanced Berry Complete with Acai
Essential Daily Nutrients
Grapeseed Extract with Resveratrol & Pterostilbene
Mega Green Tea Extract (decaffeinated)
Mega Green Tea Extract (lightly caffeinated)
Optimized Fucoidan with Maritech® 926
Optimized Resveratrol
Optimized Resveratrol with Nicotinamide Riboside
pTeroPure®
Pycnogenol® French Maritime
Pine Bark Extract
Resveratrol with Pterostilbene
RNA (Ribonucleic Acid)
Super R-Lipoic Acid
X-R Shield

Men's Health
Mega Lycopene Extract
PalmettoGuard® Saw Palmetto with Beta-Sitosterol
PalmettoGuard® Saw Palmetto/Nettle Root Formula with Beta-Sitosterol
Pomi-T®
Prxlos* Natural Sex for Men*
Super MiraForte with Standardized Lignans
Triple Strength ProstaPollen™
Ultra Natural Prostate

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

Miscellaneous
Solarshield® Sunglasses

Mood & Stress Management
5 HTP
L-Theanine
Natural Stress Relief
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
Life Extension Mix™ Tablets with Extra Nicin
Life Extension Mix™ Tablets without Copper
Life Extension Mix™ Tablets
Once-Daily Health Booster
One-Per-Day Tablets
Two-Per-Day Capsules
Two-Per-Day Tablets

Personal Care
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
Facial Toning System
Hair, Skin & Nail Rejuvenation Formula w/VERISOL®
Hair Suppress Formula
Life Extension Toothpaste
Sinus Cleanser
Venetone
Xylitol White Mouthwash

Pet Care
Cat Mix
Dog Mix

Probiotics
Bifido GI Balance
BroccoMax®
FLORASSIST® Balance
FLORASSIST® Heart Health
FLORASSIST® Mood
FLORASSIST® Oral Hygiene
FLORASSIST® Throat Health
Theralac® Probiotics
TruFlora® Probiotics

Skin Care
Advanced Anti-Glycation Peptide Serum
Advanced Lightening Cream
Advanced Peptide Hand Therapy
Advanced Triple Peptide Serum
Advanced Under Eye Serum with Stem Cells
Amber Self MicroDermAbrasion
Anti-Aging Face Oil
Anti-Aging Mask
Anti-Aging Rejuvenating Foot Cream
Anti-Glycation Serum with Blueberry & Pomegranate Extracts
Antioxidant Facial Mist
Anti-Oxidant Rejuvenating Scalp Serum
Bioflavonoid Cream
Broccoli Sprout Cream
Collagen Boosting Peptide Serum
Corrective Clearing Mask
DNA Repair Cream
Essential Plant Lipids Reparative Serum
Eye Lift Cream
Face Rejuvenating Anti-Oxidant Cream
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
Multi Stem Cell Skin Tightening Complex
Neck Rejuvenating Anti-Oxidant Cream
Pigment Correcting Cream
Rejuvenating Serum
Rejuvenex® Body Lotion
Rejuvenex® Factor Firming Serum
Renewing Eye Cream
Reverseratrol Anti-Oxidant Serum
Shade Factor
Skin Lightening Serum
Skin Rejuvenating Phytoceramides with Lipowheat®
Skin Stem Cell Serum
Stem Cell Cream with Alpine Rose
Tightening & Firming Neck Cream
Triple-Action Vitamin C Cream
Ultimate MicroDermabrasion
Ultra Eyelash Booster
Ultra Lip Plumper
Ultra Rejuvenex®
Ultra Rejuvenex Night®
Ultra Wrinkle Relaxer
Under Eye Rejuvenating 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)
New Zealand Whey Protein Concentrate
(Natural Chocolate and Vanilla Flavor)
Tart Cherry with CherryPure®
Whey Protein Isolate
(Chocolate and Vanilla Flavor)

Vitamins
Ascorbyl Palmitate
Benfotiamine with Thiamine
Beta-Carotene
BioActive Complete B-Complex
Biotin
Buffered Vitamin C Powder
Fast C® with Dihydoquercetin
Gamma E Mixed Tochopherol Enhanced with Sesame Lignans
Gamma E Mixed Tochopherol/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 Nicin
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
Vitamin B12
Vitamin B6
Vitamin C with Dihydoquercetin
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
Garcinia HCA
HCAActive™ Garcinia Cambogia Extract
Integra-Learn®
Mediterranean Trim with Sinetrol™ XPur
Optimized Irvingia with Phase 3rd Calorie Control Complex
Optimized Saffron with Satireal®
Super Citrimax®
Super CLA Blend with Guarana and Sesame Lignans
Super CLA Blend with Sesame Lignans
Waist-Line Control™

Women's Health
Advanced Natural Sex for Women® 50+
Breast Health Formula
Femmenessence MacaPause®
Natural Estrogen
ProgesterCare®
Super-Absorbable Soy Isoflavones
Ultra Soy Extract
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>GTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01524</td>
<td>ACETYL-L-CARNITINE • 500 mg, 100 veg caps</td>
<td>34.00</td>
<td>25.50</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01874</td>
<td>ACETYL-L-CARNITINE ARGINATE • 90 veg caps</td>
<td>52.00</td>
<td>39.00</td>
<td>35.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01626</td>
<td>ADRENAL ENERGY FORMULA • 60 veg caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01630</td>
<td>ADRENAL ENERGY FORMULA • 120 veg caps</td>
<td>46.00</td>
<td>34.50</td>
<td>31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01826</td>
<td>ADVANCED LIPID CONTROL • 60 veg caps</td>
<td>30.00</td>
<td>22.50</td>
<td>20.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00881</td>
<td>AHCC® • 500 mg, 30 caps</td>
<td>59.98</td>
<td>44.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29727</td>
<td>AHCC® (KINOKO® GOLD) • 500 mg, 60 veg caps</td>
<td>74.95</td>
<td>52.47</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00457</td>
<td>ALPHA-LIPOIC ACID W/BIOTIN • 250 mg, 60 caps</td>
<td>37.00</td>
<td>27.75</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01907</td>
<td>AMPK ACTIVATOR • 90 veg caps</td>
<td>48.00</td>
<td>36.00</td>
<td>33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01509</td>
<td>ANTI-ADIPOCYTE FORMULA W/MERATRIM® &amp; INTEGRA LEAN® (Advanced) • 60 veg caps</td>
<td>39.90</td>
<td>29.25</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02140</td>
<td>ANTI-ALCOHOL w/HEPATOPIRO COMPLEX • 60 caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01625</td>
<td>APPLEWISE POLYPHENOL EXTRACT • 600 mg, 30 veg caps</td>
<td>21.00</td>
<td>15.75</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01039</td>
<td>ARGinine/ORNithine • 500/250, 100 caps</td>
<td>17.99</td>
<td>13.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00038</td>
<td>ARGinine/ORNithine POWDER • 150 grams</td>
<td>22.95</td>
<td>17.21</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01624</td>
<td>(L)-ARGININE CAPS • 700 mg, 200 veg caps</td>
<td>26.50</td>
<td>19.88</td>
<td>17.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02004</td>
<td>ARTERIAL PROTECT • 30 veg caps</td>
<td>48.00</td>
<td>36.00</td>
<td>33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01817</td>
<td>ARTHROMAX® W/THEAFLAVINS &amp; APRÉSFLÉX® 120 veg caps</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01816</td>
<td>ARTHROMAX® ADVANCED W/UC-II® &amp; APRÉSFLÉX® 60 caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02108</td>
<td>ARTHROMAX® HERBAL JOIN FORMULA • 60 veg caps</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01404</td>
<td>ARTICHOKE LEAF EXTRACT • 500 mg, 180 veg caps</td>
<td>30.00</td>
<td>22.50</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00919</td>
<td>ASCORBYL PALMITE • 500 mg, 500 veg caps</td>
<td>22.50</td>
<td>16.88</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00888</td>
<td>ASHWAGANDHA EXTRACT (Optimized) • 60 caps</td>
<td>10.00</td>
<td>7.50</td>
<td>6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01805</td>
<td>ASIAN ENERGY BOOST • 90 veg caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01066</td>
<td>ASPRIN • 81 mg, 300 enteric coated tablets</td>
<td>6.00</td>
<td>4.50</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01923</td>
<td>ASTAXANTHIN WITH PHOSPHOLIPIDS • 4 mg, 30 softgels</td>
<td>16.00</td>
<td>12.00</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 1**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>GTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00920</td>
<td>BENFOTIAMINE W/ THIAMINE • 100 mg, 120 veg caps</td>
<td>19.95</td>
<td>14.96</td>
<td>13.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00925</td>
<td>BENFOTIAMINE (Mega) • 250 mg, 120 veg caps</td>
<td>30.00</td>
<td>22.50</td>
<td>20.25</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>14.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01496</td>
<td>BERRY COMPLETE W/AGAI (Enhanced) • 60 caps</td>
<td>29.00</td>
<td>21.75</td>
<td>19.50</td>
<td></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>
<td></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>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01873</td>
<td>BILBERRY EXTRACT • 100 mg, 90 veg caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01512</td>
<td>BIOACTIVE MILK PEPTIDES • 30 caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01631</td>
<td>BIO-COLLAGEN W/PATENTED UC-II® • 40 mg, 60 small caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01066</td>
<td>BIOSIL® • 5 mg, 30 veg caps</td>
<td>18.95</td>
<td>15.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01070</td>
<td>BIOSIL® • 1 fl oz</td>
<td>31.99</td>
<td>25.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00102</td>
<td>Biotin • 600 mcg, 100 caps</td>
<td>7.50</td>
<td>5.63</td>
<td>4.88</td>
<td></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>10.50</td>
<td></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>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01006</td>
<td>BLAST™ • 600 grams of powder</td>
<td>26.95</td>
<td>20.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02025</td>
<td>BLOOD PRESSURE (Dual Action) • 60 veg tabs</td>
<td>44.00</td>
<td>33.00</td>
<td>28.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 2**

TO ORDER: 1.954.766.8433 or 1.800.544.4440

TO ORDER ONLINE: VISIT: www.LifeExtension.com

RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>RETAIL EACH</th>
<th>1 UNIT EACH</th>
<th>4 UNIT EACH</th>
<th>10 UNIT EACH</th>
<th>QTY TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>01659</td>
<td>COGNIZIN® CDH CHOLINE CAPS • 250 mg, 60 veg. caps</td>
<td>$36.00</td>
<td>$27.00</td>
<td>$25.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01945</td>
<td>COMPLETE B-COMPLEX (BioActive) • 60 veg. caps</td>
<td>$12.00</td>
<td>$9.00</td>
<td>$8.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02098</td>
<td>COMPREHENSIVE NUTRIENT PACKS ADVANCED • 30 packs</td>
<td>$90.00</td>
<td>$67.50</td>
<td>$61.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01949</td>
<td>COQ10 w/4-LIMONEN (Super-Absorbable) 50 mg, 60 softgels</td>
<td>$25.00</td>
<td>$18.75</td>
<td>$16.50</td>
<td>$15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01948</td>
<td>COQ10 w/4-LIMONEN (Super-Absorbable) 100 mg, 100 softgels</td>
<td>$46.00</td>
<td>$34.50</td>
<td>$28.00</td>
<td>$26.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01929</td>
<td>COQ10 (Super Ubiquinol) • 100 mg, 60 softgels</td>
<td>$56.00</td>
<td>$42.00</td>
<td>$36.00</td>
<td>$33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01733</td>
<td>COQ10 w/BIOPOQ® (Super Ubiquinol) • 100 mg, 30 softgels</td>
<td>$54.00</td>
<td>$40.50</td>
<td>$33.00</td>
<td>$30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01426</td>
<td>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 100 mg, 60 softgels</td>
<td>$62.00</td>
<td>$46.50</td>
<td>$39.00</td>
<td>$36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01425</td>
<td>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 50 mg, 100 softgels</td>
<td>$58.00</td>
<td>$43.50</td>
<td>$34.50</td>
<td>$31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01427</td>
<td>COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 200 mg, 30 softgels</td>
<td>$62.00</td>
<td>$46.50</td>
<td>$39.00</td>
<td>$36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00862</td>
<td>CRAN-MAX® • 500 mg, 60 veg. caps</td>
<td>$17.50</td>
<td>$13.13</td>
<td>$11.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01424</td>
<td>CRAN-MAX® WITH ELLILOOSE™ (Optimized) • 60 veg. caps</td>
<td>$18.00</td>
<td>$13.50</td>
<td>$12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01529</td>
<td>CREATINE CAPSULES • 120 veg. caps</td>
<td>$10.95</td>
<td>$8.21</td>
<td>$6.94</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01746</td>
<td>CREATINE WHEY GLUTAMINE POWDER • 454 grams (vanilla)</td>
<td>$30.00</td>
<td>$22.50</td>
<td>$19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01429</td>
<td>CREAN MICROMEL IN VEGGIE FORMULA • 60 veg. caps</td>
<td>$39.00</td>
<td>$29.25</td>
<td>$27.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00407</td>
<td>CURCUMIN® (Super Bio) • 400 mg, 60 veg. caps</td>
<td>$38.00</td>
<td>$28.50</td>
<td>$26.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01924</td>
<td>CURCUMIN® W/GINGER &amp; TURMERONES (Advanced Bio) 30 softgels</td>
<td>$30.00</td>
<td>$22.50</td>
<td>$20.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01804</td>
<td>CYTOKINE SUPPRESS™ W/ESCG • 30 veg. caps</td>
<td>$30.00</td>
<td>$22.50</td>
<td>$20.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80157</td>
<td>ADVANCED ANTI-GLYCATION PEPTIDE SERUM • 1 oz</td>
<td>$53.00</td>
<td>$39.75</td>
<td>$34.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80154</td>
<td>ADVANCED LIGHTENING CREAM • 1 oz</td>
<td>$65.00</td>
<td>$48.75</td>
<td>$42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80155</td>
<td>ADVANCED PEPTIDE HAND THERAPY • 4 oz</td>
<td>$46.00</td>
<td>$34.50</td>
<td>$29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80152</td>
<td>ADVANCED TRIPLE PEPTIDE SERUM • 1 oz</td>
<td>$65.00</td>
<td>$48.75</td>
<td>$42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80140</td>
<td>ADVANCED UNDER EYE SERUM W/STEM CELLS • .33 oz</td>
<td>$49.00</td>
<td>$36.75</td>
<td>$31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80139</td>
<td>AMBER SELF MICRODERMABRASION • 2 oz</td>
<td>$49.00</td>
<td>$36.75</td>
<td>$31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80158</td>
<td>ANTI-AGING FACE OIL • 1 oz</td>
<td>$59.00</td>
<td>$44.25</td>
<td>$39.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80118</td>
<td>ANTI-AGING MASK • 2 oz</td>
<td>$72.00</td>
<td>$54.00</td>
<td>$47.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80151</td>
<td>ANTI-AGING REJUVENATING FACE CREAM • 2 oz</td>
<td>$65.00</td>
<td>$48.75</td>
<td>$42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80153</td>
<td>ANTI-AGING REJUVENATING SCALP SERUM • 2 oz</td>
<td>$46.00</td>
<td>$34.50</td>
<td>$29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80134</td>
<td>ANTI-GLYCATION SERUM W/BLUEBERRY &amp; POMEGRANATE EXTRACTS • 1 oz</td>
<td>$33.00</td>
<td>$24.75</td>
<td>$23.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80133</td>
<td>ANTIOXIDANT FACIAL MIST • 2 oz</td>
<td>$32.00</td>
<td>$24.00</td>
<td>$22.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80127</td>
<td>ANTIOXIDANT REJUVENATING FOOT CREAM • 2 oz</td>
<td>$45.00</td>
<td>$33.75</td>
<td>$32.10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80128</td>
<td>ANTIOXIDANT REJUVENATING FOOT SCRUB • 2 oz</td>
<td>$49.00</td>
<td>$36.25</td>
<td>$32.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80117</td>
<td>ANTIOXIDANT REJUVENATING HAND CREAM • 2 oz</td>
<td>$44.00</td>
<td>$32.88</td>
<td>$29.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80105</td>
<td>ANTI-REDNESS &amp; ADULT BLEMISH LOTION • 1 oz</td>
<td>$74.50</td>
<td>$55.88</td>
<td>$48.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80147</td>
<td>BIOFLAVONOIDS CREAM • 1 oz</td>
<td>$46.00</td>
<td>$34.50</td>
<td>$29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80144</td>
<td>BROCCOLI SPIRUL CREAM • 1 oz</td>
<td>$46.00</td>
<td>$34.50</td>
<td>$29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80156</td>
<td>COLLAGEN BOOSTING PEPTIDE SERUM • 1 oz</td>
<td>$59.00</td>
<td>$44.25</td>
<td>$39.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80120</td>
<td>CORRECTIVE CLEARING MASK • 2 oz</td>
<td>$64.50</td>
<td>$48.38</td>
<td>$42.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80141</td>
<td>DNA REPAIR CREAM • 1 oz</td>
<td>$49.00</td>
<td>$36.75</td>
<td>$31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80108</td>
<td>ESSENTIAL PLANT LIPIDS REPARATIVE SERUM • 1 oz</td>
<td>$74.95</td>
<td>$56.21</td>
<td>$49.46</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 3**

**SUBTOTAL OF COLUMN 4**
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
<th>GTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01658</td>
<td>GINKGO BILOBA CERTIFIED EXTRACT™</td>
<td>120 mg, 365 veg. caps</td>
<td>46.00</td>
<td>34.50</td>
<td>31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00756</td>
<td>GLA WITH SESAME LIGNANS (Mega)</td>
<td>60 softgels</td>
<td>19.50</td>
<td>14.63</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00345</td>
<td>(L-) GLUTAMINE CAPSULES</td>
<td>500 mg, 100 veg. caps</td>
<td>14.95</td>
<td>11.21</td>
<td>10.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00141</td>
<td>(L-) GLUTAMINE POWDER</td>
<td>100 grams</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00552</td>
<td>GLUCOSAMINE/CHONDROITIN CAPSULES</td>
<td>100 caps</td>
<td>38.00</td>
<td>28.50</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01541</td>
<td>GLUTATHIONE, CYSTEINE &amp; C</td>
<td>100 veg. caps</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01669</td>
<td>GLYCINE</td>
<td>1,000 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>8.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01411</td>
<td>GRAPE SEED EXTRACT W/RESVERATROL &amp; PTEROSTILBENE</td>
<td>100 mg, 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>25.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01620</td>
<td>GREEN COFFEE EXTRACT COFFEEGENIC®</td>
<td>400 mg, 90 veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00953</td>
<td>GREEN TEA EXTRACT (Mega)</td>
<td>lightly decaffeinated, 100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td>20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00954</td>
<td>GREEN TEA EXTRACT (Mega)</td>
<td>decaffeinated, 100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td>20.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01704</td>
<td>5 HTP</td>
<td>100 mg, 60 caps</td>
<td>27.95</td>
<td>20.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02002</td>
<td>HAIR, SKIN &amp; NAIL REJUVENATION FORM W/VEINSOL®</td>
<td>90 tabs</td>
<td>32.00</td>
<td>24.00</td>
<td>22.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01738</td>
<td>HCA</td>
<td>90 veg. caps</td>
<td>17.00</td>
<td>12.75</td>
<td>11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29754</td>
<td>HCACTIVE™ GARCINIA CAMBOGIA EXTRACT</td>
<td>90 caps</td>
<td>30.00</td>
<td>22.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01393</td>
<td>HEPATOPRO</td>
<td>900 mg, 60 softgels</td>
<td>50.00</td>
<td>37.50</td>
<td>34.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01527</td>
<td>HUPERZINE A</td>
<td>200 mg, 60 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00661</td>
<td>HYDRODERM®</td>
<td>1 oz</td>
<td>79.95</td>
<td>59.96</td>
<td>49.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01704</td>
<td>IMMUNE MODULATOR W/TINOFEND®</td>
<td>60 veg. caps</td>
<td>17.00</td>
<td>12.75</td>
<td>11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00955</td>
<td>IMMUNE PROTECT W/PABACTIN®</td>
<td>30 veg. caps</td>
<td>29.50</td>
<td>22.13</td>
<td>19.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02005</td>
<td>IMMUNE SENESCENCE PROTECTION FORMULA™</td>
<td>60 veg. tabs</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01049</td>
<td>INNERPOWER™</td>
<td>530 grams powder</td>
<td>42.00</td>
<td>31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01674</td>
<td>INOSITOL CAPSULES</td>
<td>1,000 mg, 360 veg. caps</td>
<td>62.00</td>
<td>46.50</td>
<td>43.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01292</td>
<td>INTEGRA-LEAN™ AFRICAN MANGO IRVINGIA</td>
<td>150 mg, 60 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01677</td>
<td>IRON PROTEIN PLUS</td>
<td>300 mg, 100 caps</td>
<td>28.00</td>
<td>21.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01492</td>
<td>IRVINGIA W/PHASE 3RD CALORIE CONTROL COMPLEX</td>
<td>Optimized African Mango</td>
<td>56.00</td>
<td>42.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00506</td>
<td>JARR-O-DOPHILUS EPS®</td>
<td>60 veg. caps</td>
<td>22.95</td>
<td>17.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01834</td>
<td>K W/ADVANCED K2 COMPLEX (Super)</td>
<td>90 softgels</td>
<td>30.00</td>
<td>22.50</td>
<td>20.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01600</td>
<td>KRILL HEALTHY JOINT FORMULA</td>
<td>30 softgels</td>
<td>32.00</td>
<td>24.00</td>
<td>21.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01050</td>
<td>KRILL OIL</td>
<td>60 softgels</td>
<td>33.95</td>
<td>25.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00318</td>
<td>KYOLIC® GARLIC FORMULA 102</td>
<td>200 veg. caps</td>
<td>27.45</td>
<td>20.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00214</td>
<td>KYOLIC® GARLIC FORMULA 105</td>
<td>200 caps</td>
<td>28.45</td>
<td>21.34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00789</td>
<td>KYOLIC® RESERVE</td>
<td>600 mg, 120 caps</td>
<td>28.95</td>
<td>21.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01681</td>
<td>LACTOFERIN</td>
<td>60 caps</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00202</td>
<td>LECITHIN</td>
<td>16 oz granules</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02155</td>
<td>LIFE EXTENSION MIX™</td>
<td>315 tablets</td>
<td>80.00</td>
<td>60.00</td>
<td>52.00</td>
<td>43.75</td>
<td></td>
</tr>
<tr>
<td>02157</td>
<td>LIFE EXTENSION MIX™ W/EXTRA NIACIN</td>
<td>315 tablets</td>
<td>80.00</td>
<td>60.00</td>
<td>52.00</td>
<td>43.75</td>
<td></td>
</tr>
<tr>
<td>02154</td>
<td>LIFE EXTENSION MIX™</td>
<td>490 caps</td>
<td>90.00</td>
<td>67.50</td>
<td>58.00</td>
<td>47.50</td>
<td></td>
</tr>
<tr>
<td>02156</td>
<td>LIFE EXTENSION MIX™ POWDER</td>
<td>14.81 oz</td>
<td>80.00</td>
<td>60.00</td>
<td>52.00</td>
<td>43.75</td>
<td></td>
</tr>
<tr>
<td>02165</td>
<td>LIFE EXTENSION MIX™ W/o copper</td>
<td>315 tablets</td>
<td>80.00</td>
<td>60.00</td>
<td>52.00</td>
<td>43.75</td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 5**

**SUBTOTAL OF COLUMN 6**

RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>RETAIL Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>02164</td>
<td>LIFE EXTENSION MIX™ • 490 caps w/o copper</td>
<td>90.00</td>
<td>67.50</td>
<td>58.00</td>
<td>47.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02166</td>
<td>LIFE EXTENSION MIX™ POWDER • 14.81 oz w/o copper</td>
<td>80.00</td>
<td>60.00</td>
<td>52.00</td>
<td>43.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01608</td>
<td>LIVER EFFICIENCY FORMULA • 30 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01639</td>
<td>5-LXH INHIBITOR W/APRÉSFLEX® • 100 mg, 60 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01678</td>
<td>L-LYSINE • 620 mg, 100 veg. caps</td>
<td>9.00</td>
<td>6.75</td>
<td>6.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00455</td>
<td>LYCOPENE (Mega) • 15 mg, 90 softgels</td>
<td>35.00</td>
<td>26.25</td>
<td>22.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01992</td>
<td>MACUGUARD® OCULAR SUPPORT • 60 softgels</td>
<td>25.00</td>
<td>18.75</td>
<td>17.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01993</td>
<td>MACUGUARD® OCULAR SUPPORT w/ASTAXANTHIN 60 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01459</td>
<td>MAGNESIUM CAPS • 500 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>7.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01882</td>
<td>MAGNESIUM (CITRATE) • 160 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>7.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02107</td>
<td>(EXTEND-RELEASE) MAGNESIUM • 60 veg. caps</td>
<td>13.00</td>
<td>9.75</td>
<td>8.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01806</td>
<td>MEDITERRANEAN TRIM WITH SINETROL™-XPUR 65 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01668</td>
<td>MELATONIN • 300 mcg, 100 veg. caps</td>
<td>5.75</td>
<td>4.31</td>
<td>3.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01803</td>
<td>MELATONIN • 500 mcg, 200 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00329</td>
<td>MELATONIN • 1 mg, 60 caps</td>
<td>5.00</td>
<td>3.75</td>
<td>3.47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00330</td>
<td>MELATONIN • 3 mg, 60 veg. caps</td>
<td>8.00</td>
<td>6.00</td>
<td>5.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00331</td>
<td>MELATONIN • 10 mg, 60 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td>18.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00332</td>
<td>MELATONIN • 3 mg, 60 veg. lozenges</td>
<td>8.00</td>
<td>6.00</td>
<td>5.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01734</td>
<td>MELATONIN (Fast-Acting Liquid) • 2 fl. oz (Citrus-Vanilla)</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01787</td>
<td>MELATONIN TIMED RELEASE • 300 mcg, 100 veg. tabs</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01788</td>
<td>MELATONIN TIMED RELEASE • 750 mcg, 60 veg. tablets</td>
<td>8.00</td>
<td>6.00</td>
<td>5.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01786</td>
<td>MELATONIN TIMED RELEASE • 3 mg, 60 veg. tablets</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02104</td>
<td>MEMORY PROTECT • 36 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01536</td>
<td>METHYLCOBALAMIN • 1 mg, 60 veg. lozenges (vanilla)</td>
<td>9.75</td>
<td>7.46</td>
<td>6.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01537</td>
<td>METHYLCOBALAMIN • 5 mg, 60 veg. lozenges (vanilla)</td>
<td>32.00</td>
<td>24.00</td>
<td>18.75</td>
<td>17.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00709</td>
<td>MIGRA-EEZE™ (Butterbur) • 60 softgels</td>
<td>33.00</td>
<td>24.75</td>
<td>22.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01522</td>
<td>MILK THISTLE (European) • 60 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td>22.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01822</td>
<td>MILK THISTLE (European) • 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01925</td>
<td>MILK THISTLE (European) • 120 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01940</td>
<td>MIRAFORTE w/STANDARDIZED LIGNANS (Super) • 120 veg caps</td>
<td>62.00</td>
<td>46.50</td>
<td>42.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01869</td>
<td>MITOCONDRIAL BASICS W/BIOPOQ® • 30 caps</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01685</td>
<td>MITOCONDRIAL ENERGY OPTIMIZER w/BIOPOQ® • 120 caps</td>
<td>72.00</td>
<td>54.00</td>
<td>48.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00065</td>
<td>MK-7 • 90 mcg, 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00451</td>
<td>MSM (Methylsulfonylmethane) • 1,000 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 7**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>RETAIL Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>01534</td>
<td>N-ACETYL-L-Cysteine • 600 mg, 60 veg. caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01904</td>
<td>NAD+ CELL REGENERATOR® • 100 mg, 30 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00066</td>
<td>NATTOKINASE • 60 softgels</td>
<td>25.50</td>
<td>19.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01807</td>
<td>NATURAL APPETITE SUPPRESS (Advanced) • 60 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td>25.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00984</td>
<td>NATURAL BP MANAGEMENT • 60 tablets</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01892</td>
<td>NATURAL ESTROGEN • 60 veg. tabs</td>
<td>38.00</td>
<td>28.50</td>
<td>25.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01626</td>
<td>NATURAL SEX FOR WOMEN® 50+ (Advanced) • 90 veg. caps</td>
<td>59.00</td>
<td>44.25</td>
<td>34.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01444</td>
<td>NATURAL SLEEP • 60 caps</td>
<td>13.00</td>
<td>9.75</td>
<td>7.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01551</td>
<td>NATURAL SLEEP® w/MELATONIN (Enhanced) • 30 caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 8**
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit</th>
<th>4 Unit</th>
<th>10 Unit</th>
<th>GTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01610</td>
<td>RESVERATROL W/NICOTINAMIDE RIBOSIDE (Optimized) • 30 veg. caps</td>
<td>64.00</td>
<td>48.00</td>
<td>45.00</td>
<td></td>
<td>22.00</td>
<td>16.50</td>
</tr>
</tbody>
</table>

**Q, R**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit</th>
<th>4 Unit</th>
<th>10 Unit</th>
<th>GTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01390</td>
<td>QUERCETIN (Optimized) • 250 mg, 60 veg. caps</td>
<td>01621</td>
<td>REJUVENEX® FACTOR FIRMING SERUM • 1.7 oz</td>
<td>59.00</td>
<td>47.25</td>
<td>43.75</td>
<td>40.00</td>
</tr>
</tbody>
</table>

**S**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit</th>
<th>4 Unit</th>
<th>10 Unit</th>
<th>GTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01432</td>
<td>SAFFRON W/SATIREAL® (Optimized) • 60 veg. caps</td>
<td>01935</td>
<td>SAMe (S-ADENOSYL-METHIONINE) 200 mg, 30 enteric coated tablets</td>
<td>25.00</td>
<td>18.75</td>
<td>16.50</td>
<td>15.00</td>
</tr>
</tbody>
</table>

**T**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit</th>
<th>4 Unit</th>
<th>10 Unit</th>
<th>GTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>02023</td>
<td>TARTCHERRY W/CHERRYPURE® 60 veg. caps</td>
<td>01827</td>
<td>TAURINE • 1,000 mg, 90 veg. caps</td>
<td>13.00</td>
<td>9.75</td>
<td>9.00</td>
<td>8.25</td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 9**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each</th>
<th>1 Unit</th>
<th>4 Unit</th>
<th>10 Unit</th>
<th>GTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01740</td>
<td>SEA-ODONE™ • 1,000 mcg, 60 veg. caps</td>
<td>00046</td>
<td>SELENIUM • 2 fl. oz dropper</td>
<td>11.95</td>
<td>9.86</td>
<td>9.00</td>
<td>8.25</td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 10**

- REJECT ONLINE VISIT: www.LifeExtension.com
- TO ORDER CALL: 1.954.766.8433 or 1.800.544.4440
- TO ORDER ONLINE VISIT: www.LifeExtension.com
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each $</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>GTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01921</td>
<td>Uric Acid Control • 60 veg caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00213</td>
<td>Vanadyl Sulfate • 7.5 mg, 100 veg tablets</td>
<td>15.00</td>
<td>11.25</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02102</td>
<td>Venoflow • 30 veg caps</td>
<td>52.00</td>
<td>39.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>Venotone • 60 caps</td>
<td>18.95</td>
<td>14.21</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01327</td>
<td>Vinpocetine • 10 mg, 100 veg tablets</td>
<td>18.00</td>
<td>13.50</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00372</td>
<td>Vitamin B3 Niacin • 500 mg, 100 caps (Pantothenic Acid)</td>
<td>7.65</td>
<td>5.74</td>
<td>4.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00098</td>
<td>Vitamin B5 • 500 mg, 100 caps (Pantothenic Acid)</td>
<td>10.50</td>
<td>7.88</td>
<td>7.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01535</td>
<td>Vitamin B6 • 250 mg, 100 veg caps</td>
<td>12.50</td>
<td>9.38</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00361</td>
<td>Vitamin B12 • 500 mcg, 100 lozenges</td>
<td>8.75</td>
<td>6.56</td>
<td>5.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01634</td>
<td>Vitamin C w/Dihydroquercetin • 1,000 mg, 60 veg tablets</td>
<td>10.00</td>
<td>7.50</td>
<td>6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>Vitamin C w/Dihydroquercetin • 250 mg, 250 veg tablets</td>
<td>25.50</td>
<td>19.13</td>
<td>17.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00064</td>
<td>Vitamin C Powder (Buffered) • 454 grams</td>
<td>23.95</td>
<td>17.96</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01736</td>
<td>Vitamin C-Magnesium Crystals (Effervescent) 180 caps</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01732</td>
<td>Vitamin D3 • 2,000 IU, 1 fl oz, Mint flavor</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01753</td>
<td>Vitamin D3 • 1,000 IU, 30 softgels</td>
<td>7.00</td>
<td>5.25</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01751</td>
<td>Vitamin D3 • 1,000 IU, 250 softgels</td>
<td>12.50</td>
<td>9.38</td>
<td>8.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01713</td>
<td>Vitamin D3 • 5,000 IU, 60 softgels</td>
<td>10.00</td>
<td>7.50</td>
<td>6.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01718</td>
<td>Vitamin D3 • 7,000 IU, 60 softgels</td>
<td>14.00</td>
<td>10.50</td>
<td>9.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01758</td>
<td>Vitamin D3/W/Sea-Iodine™ • 5,000 IU, 60 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00864</td>
<td>Vitamin D3 Liquid • 2,000 IU, 1 fl oz</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01840</td>
<td>Vitamin D and K/W/Sea-Iodine™ • 60 caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01863</td>
<td>Vitamin E (Natural) • 400 IU, 90 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01936</td>
<td>Vitamin K2 (Low dose) • 45 mcg, 90 softgels</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01902</td>
<td>Waist-Line Control™ • 120 veg caps</td>
<td>42.00</td>
<td>31.50</td>
<td>28.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01919</td>
<td>X-R Shield • 90 veg caps</td>
<td>15.00</td>
<td>11.25</td>
<td>9.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00409</td>
<td>Xylitol White™ Mouthwash • 16 oz</td>
<td>10.00</td>
<td>7.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01813</td>
<td>Zinc High Potency • 50 mg, 90 veg caps</td>
<td>7.95</td>
<td>5.96</td>
<td>5.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01561</td>
<td>Zinc Lozenges • 60 veg lozenges</td>
<td>9.00</td>
<td>6.75</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01611</td>
<td>Zinc Lozenges (Enhanced) • 30 veg lozenges</td>
<td>12.00</td>
<td>9.00</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>01055</strong></td>
<td>Zylamend® Whole Body • 120 liquid veg caps</td>
<td>72.95</td>
<td>54.71</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BOOKS**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>Retail Each $</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>GTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>33870</td>
<td>Outstanding Health: The 6 Essential Keys to Maximize Your Energy and Will Being by Michael Galitzer, MD &amp; Larry Trivieri Jr. • 2015</td>
<td>24.95</td>
<td>18.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33877</td>
<td>Testosterone Replacement Therapy by Dr. John Criiser • 2015</td>
<td>19.99</td>
<td>14.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33879</td>
<td>The Truth About Men and Sex by Abraham Morgentaler, MD, FACOS • 2015</td>
<td>16.99</td>
<td>12.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33873</td>
<td>Tox-Sick • by Suzanne Somers • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33875</td>
<td>Doctor: The Distillation of an American Physician • by Sandeep Jhauner • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33874</td>
<td>Missing Microbes • by Martin J. Blaser, MD • 2014</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33872</td>
<td>Eating on the Wild Side • by Jo Robinson • 2014</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33871</td>
<td>Get Serious • by Brett Osborn, MD • 2014</td>
<td>24.95</td>
<td>18.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33868</td>
<td>Toxin Toxout: Getting Harmful Chemicals Out of Our Bodies and Our World • by Bruce Lustig and Rick Smith • 2014</td>
<td>25.99</td>
<td>19.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33867</td>
<td>The Complete Mediterranean Diet by Michael Ozmer • 2014</td>
<td>19.95</td>
<td>14.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33869</td>
<td>Unleash the Power of the Female Brain by Daniel Amen, MD • 2014</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33870</td>
<td>Magnificent Magnesium by Dennis Goodman, MD • 2014</td>
<td>14.95</td>
<td>11.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33871</td>
<td>Disease Prevention and Treatment, Expanded Fifth Edition (Hardcover) • 2014</td>
<td>69.95</td>
<td>39.95</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33865</td>
<td>The Restoration of the Human Body [In 7 Parts] by Sergey A. Dzogan, MD, PhD • 2014</td>
<td>29.95</td>
<td>22.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33862</td>
<td>I'M Too Young for This • by Suzanne Somers • 2013</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33835</td>
<td>Pharmacacy • by William Faloone • 2011</td>
<td>24.00</td>
<td>19.46</td>
<td>16.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33858</td>
<td>The Vitamin D Solution by Michael P. Holick, PhD, MD (Paperback) • 2013</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33838</td>
<td>Your Guide to Healthy Skin: The Natural Way by Gary Goldfraden, MD • 2012</td>
<td>26.00</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33815</td>
<td>Knockout • by Suzanne Somers • 2009</td>
<td>25.99</td>
<td>17.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33809</td>
<td>Testosterone for Life by Abraham Morgentaler, MD • 2008</td>
<td>16.95</td>
<td>11.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33869</td>
<td>Life Extension Revolution by Philip Lee Miller, MD (Paperback) • 2014</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33805</td>
<td>Miami Mediterranean Diet with 300 Recipes by Michael D. Ozmer, MD, FACC, FAHA (Hardcover) • 2008</td>
<td>24.95</td>
<td>16.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33803</td>
<td>What Your Doctor May Not Tell You About Diabetes by Steven V. Joyal, MD • 2008</td>
<td>14.99</td>
<td>10.49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 12**

* These products are not 25% off retail price.
** Due to license restrictions, this product is not for sale to customers outside of the USA.
*** Due to license restrictions, this product is not for sale to customers outside of the USA and Canada.
† Due to license restrictions, this product is not for sale to customers outside of the USA and Canada.

TO ORDER CALL: 1.954.766.8433 or 1.800.544.4440
TO ORDER ONLINE VISIT: www.LifeExtension.com

Not sure exactly which supplements you need? Talk to a Wellness Specialist toll-free at 1-800-226-2370
# Life Extension®

**ORDER SUBTOTALS**

<table>
<thead>
<tr>
<th>Subtotal Column 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtotal Column 2</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 3</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 4</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 5</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 6</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 7</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 8</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 9</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 10</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 11</td>
<td></td>
</tr>
<tr>
<td>Subtotal Column 12</td>
<td></td>
</tr>
</tbody>
</table>

**ORDER TOTALS**

<table>
<thead>
<tr>
<th>Subtotal of Columns 1 - 12</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Postage &amp; Handling (Any size order, in the U.S., includes Alaska &amp; Hawaii)</td>
<td><strong>$5.50</strong></td>
</tr>
<tr>
<td>C.O.D.s (Add $7 for C.O.D. Orders)</td>
<td></td>
</tr>
<tr>
<td>Shipping</td>
<td></td>
</tr>
<tr>
<td>Grand Total (Must be in U.S. Dollars)</td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE MAIL TO:** Life Extension  
P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198  
Or Call Toll Free 1-800-544-4440 • Fax: 866-728-1050

---

**PREMIER Order Over $50?**

Get a year of unlimited **FREE shipping** and double **rewards** for only $0.

There's no catch: just apply your instant $50 bonus at checkout. Your orders ship free for 12 months, you earn double (4%) rewards back all year long, and the cost of enrollment is offset by your instant bonus.* This makes Premier the only rewards program that more than pays for itself!

**Premier. Simply. More.**

Just $49.95 | $59.95 for international customers  
Call 1-888-224-8239 to enroll  
Visit www.LifeExtension.com/Premier for details • Mention code YRX618D

---

**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></td>
</tr>
<tr>
<td>Phone</td>
<td>Fax</td>
</tr>
<tr>
<td>Country</td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td></td>
</tr>
</tbody>
</table>

Prices subject to change without notice.  
Please notify Life Extension of any address change.

---

*Certain restrictions apply. For complete terms and conditions please visit www.LifeExtension.com/Premier

---

No auto-renewal, no commitments.
Most commercial probiotics are destroyed by the stomach’s natural digestive acids before they reach their destination.

**FLORASSIST® Balance** with “dual encapsulation” technology delivers maximum probiotic protection to your small intestines.

**FLORASSIST® Balance:**
- Contains probiotic strains that are stomach acid resistant
- Has dual encapsulation technology, which keeps the capsule intact longer and ensures that the probiotic reaches the small intestine
- Provides 15 billion CFU—Colony Forming Units—per capsule
- Contains 6 varieties of beneficial bacteria

**FLORASSIST® Balance contains the following bacterial strains:**
1. *Lactobacillus acidophilus* LA-14
2. *Lactobacillus rhamnosus* LR-32
3. *Lactobacillus paracasei* LPC-37
4. *Bifidobacterium longum* BL-05
5. *Bifidobacterium lactis* BL-04
6. *Bifidobacterium bifidum/lactis* BB-02

These potent strains of probiotic bacteria adhere to the soft lining of the intestinal tract to help maintain a healthy surface and aid in support for the digestive system.²

---

References
Taurine is an amino acid that protects against environmental toxins, reduces brain inflammation, and stimulates neuron formation.

Before the sun sets today, about 145 Americans will be told they have pancreatic cancer. Supplemental magnesium could have reduced their risk up to 76%.

Magnesium slashes pancreatic cancer risk

Carnosine can lower blood sugar and insulin levels, help prevent cognitive decline and protect our proteins against premature aging.

Carnosine delays aging

Chronic stress damages the brain’s delicate structures. Curcumin has been shown to reverse harmful cellular changes due to stress and depression.

Curcumin reverses cell damage

The majority of Americans do not obtain enough magnesium. This deficiency accelerates pathological aging. Higher magnesium reduces overall mortality.

The national magnesium crisis

Magnesium slashes pancreatic cancer risk

Activate longevity pathways

Found in blueberries, pterostilbene activates antiaging molecular pathways similar to calorie restriction and helps prevent buildup of cellular waste products.

Activate longevity pathways

Visit us at www.LifeExtension.com