Highly Purified Alaskan Fish Oil

How To Improve Intestinal Delivery Of Your Probiotic

Billionaires Who Fund Anti-Aging Research

Overcome Common Stomach Distress

PLUS—

Novel Treatment for Scleroderma
Find Answers to Your Health Questions
Aspirin May Protect Against Breast Cancer
SUPPORT ARTERIAL HEALTH

With The Most Complete Vitamin K Formula

If vitamin K levels are less than ideal, the matrix Gla-protein that lines the vascular system allows calcium to infiltrate soft tissues, similar to the way calcium is absorbed into bone. Optimal vitamin K levels function like a control switch—and keep calcium out of the arteries.¹

There are three forms of vitamin K that are key factors to promoting arterial health:²

- Vitamin K1
- Vitamin K2 (MK-4) (rapidly absorbed)
- Vitamin K2 (MK-7) (long-acting)

K1 is the kind of vitamin K found in green vegetables, but only a fraction is absorbed in the bloodstream. Supplementing ensures optimal K1 blood levels within normal range.

K2 is found in meat, dairy, and egg yolks. MK-4 is the most rapidly absorbed kind of K2, while MK-7 boasts a long half-life. This makes the two together the perfect complement to any vitamin K regimen.²

Life Extension® Super K with Advanced K2 Complex is the world’s most comprehensive vitamin K formulation. Take with meals that contain some fat for optimal absorption.

Just one daily softgel of Super K formula provides:

- Vitamin K2 (MK-7) 200 mcg
- Vitamin K2 (MK-4) 1,000 mcg
- Vitamin K1 1,000 mcg

To order Super K with Advanced K2 Complex or Once-Daily Health Booster, call 1-800-544-4440 or visit www.LifeExtension.com

References

Warning to Coumadin® (warfarin) Drug Users: Patients prescribed vitamin K-antagonist anticoagulant prescription drugs like warfarin should consult their physician before taking vitamin K supplements like Super K and Super Booster. There is evidence, however, that users of drugs like warfarin could benefit from a consistent low dose of supplemental K. Ask your doctor if you can take a low dose (45 mcg a day) of vitamin K2 in the long-acting MK-7 form for the purpose of stabilizing your INR levels and also protecting your body against long-term vitamin K deficit. Do not initiate any form of vitamin K supplementation without full cooperation of your treating doctor, as your doctor may need to increase your dose of warfarin to compensate for your vitamin K supplement. Life Extension® provides several forms of low-dose vitamin K for physician consideration.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.
**NEW LOYALTY REWARDS PROGRAM**
In a dramatic transition to enhance your supplement buying power, all Life Extension® members are now automatically enrolled in a new Your Healthy Rewards program. Loyal supporters now have more benefits than ever—at no cost! All other membership advantages continue including the monthly Life Extension® magazine, discounts on supplements and blood tests, and free access to health advisors. Current members now earn valuable reward dollars that can be applied to lower costs on future purchases.

**ENHANCED DELIVERY OF FRIENDLY BACTERIA**
Probiotics are becoming one of the most popular dietary supplements because of their crucial role in maintaining physical health. An innovative combination of probiotic strains—contained within a dual-encapsulation format—protects friendly bacteria from stomach acids to restore beneficial intestinal flora.

**HIGHLY PURIFIED FISH OIL FROM ALASKA**
Fish oil derived from pristine Alaskan waters creates new meaning to the word “fresh.” Meticulous steps are taken to produce an omega-3-rich oil with a 5-fold reduction in the upper threshold standard of oxidation. The best has just gotten better!

**BILLIONAIRES WHO FUND ANTI-AGING RESEARCH**
Far-thinking billionaires are funding innovative research aimed at discovering methods to slow and reverse pathological aging processes. The objective is to accelerate scientific advances that will enable humans to enjoy longer and healthier life spans.

**NATURAL SUPPORT FOR STOMACH HEALTH**
Almost 40% of Americans are infected with an ulcer/cancer-inducing bacterium called H. pylori. Japanese researchers have developed a unique nutrient combination that counters H. pylori, protects against excess acid, and guards the gastric lining against erosive drugs.

**LIFE EXTENSION® HEALTH EXPERTS—JUST A PHONE CALL AWAY!**
Life Extension® offers, at no cost, a highly trained team of medical doctors, nutritionists, cancer specialists, chiropractors, nurses, and naturopathic doctors who are available to answer your personal health questions based on scientific studies.

**PIONEERING TREATMENT FOR SCLERODERMA**
There is no cure for scleroderma, an autoimmune disease that hardens the skin and damages internal organs. Dr. Dipnarine Maharaj has developed an innovative nontoxic treatment that uses stem cell-mobilized bone marrow to reverse lethal scleroderma tissue damage.

**IN THE NEWS**
SAMe improves depression; aspirin inhibits cancer; LE editorial quoted in journal; CoQ10 improves Parkinson’s; vitamin E improves liver disease; carotenoids help prevent cancer; AMPK protects muscle; omega-3 promotes muscle mass; curcumin enhances chemo drug; and more.

**ASK THE DOCTOR**
Not all fish oil is the same in terms of nutritional content or purity. Dr. Scott Fogle, ND, explains how to assess a fish oil supplement’s quality, certificate analysis, and testing protocols to select quality fish oil with a safe, Five-Star rating.

**SUPER FOODS**
The fatty acids in avocado provide optimal absorption of carotenoids. Avocado’s rich fiber and phytosterol content promote joint, eye, and skin health and inhibit cancer, cardiovascular disease, metabolic syndrome, and obesity.
Life Extension

CONNECT WITH LIFE EXTENSION ON THE WEB!

Facebook.com/LifeExtension
For instant access to special offers and promotions, product news, and exclusive health and wellness information.

Twitter.com/LifeExtension
For up-to-the-minute health tips, breaking industry news, and the latest updates in medical research.

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/Health Advisors

Nutrition Center of Florida, Inc.
5990 North Federal Highway,
Fort Lauderdale, FL 33308-2633 • 954-766-8144
Monday-Friday 9 am-8 pm, Saturday 9 am-6 pm, Sunday 11 am-5 pm

---

LIFE EXTENSION (ISSN 1524-198X) Vol. 21, No.10 ©2015 is published monthly except bi-monthly in April by LE Publications, Inc. at 3600 West Commercial Blvd., Fort Lauderdale, FL 33309-3338. 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 L4B4R6. 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, Fort Lauderdale, FL 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 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.

Life Extension Magazine® we value your opinion and welcome feedback. Please mail your comments to Life Extension Magazine®, Attn: Letters to the Editor, PO Box 407198, Fort Lauderdale, FL 33340 or email us: LEmagazine@LifeExtension.com

PUBLISHER • LE Publications, Inc.

EDITORIAL
Editor-in-Chief • Philip Smith
Executive Managing Editor • Renee Price
Senior Copy Editor • Laurie Mathena
Senior Staff Writer • Michael Downey
Associate Editor • Astrid Derfler Kessler
Creative Director • Robert Vergara
Art Director • Alexandra Maldonado

CHIEF MEDICAL OFFICER
Steven Joyal, MD

VICE PRESIDENT OF PRODUCT INNOVATION & SCIENTIFIC DEVELOPMENT
Luke Huber, ND, MBA

SCIENTIFIC ADVISORY BOARD
Örn Adalsteinsson, PhD • John Boik, PhD • Aubrey de Grey, PhD
Frank Eichorn, MD • Deborah F. Harding, MD • Steven B. Harris, MD
Peter H. Langsjoen, MD, FACC • Dipnarine Maharaj, MD • Ralph W. Moss, PhD
Michael D. Ozner, MD, FACC • Jonathan V. Wright, MD

CONTRIBUTORS
Donna Caruso • Michael Downey • Scott Fogle, ND
Laurie Mathena • Kira Schmid, ND

ADVERTISING
National Advertising Manager • Leslie Stockton • 404-347-1755

VICE PRESIDENT OF SALES AND BUSINESS DEVELOPMENT
Ron Antriasian • rantriasian@lifeextension.com • 781-271-0089

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

Customer Service: 800-678-8989
Email: customerservice@LifeExtension.com
Advisors: 800-226-2370 • Advisory email: advisory@LifeExtension.com

At Life Extension Magazine® we value your opinion and welcome feedback. Please mail your comments to Life Extension Magazine®, Attn: Letters to the Editor, PO Box 407198, Fort Lauderdale, FL 33340 or email us: LEmagazine@LifeExtension.com
Used medicinally for over 4,000 years, curcumin benefits almost every organ in the body. The challenge in obtaining these benefits is that most supplements are poorly absorbed into the bloodstream and are not well retained in the body.

Life Extension®’s curcumin supplements utilize a patented, bio-enhanced curcumin preparation that can reach up to 7 times higher concentrations in the blood than standard curcumin. Studies comparing standard curcumin to Super Bio-Curcumin® and Advanced Bio-Curcumin® with Ginger & Turmerones found:

- Nearly 2 times the support for immune health,
- Nearly twice the support for healthy inflammatory response, and
- Approximately double the free-radical fighting support.

Life Extension® offers the choice of two super-absorbing curcumin formulas that require only one serving a day dosing:

- **Super Bio-Curcumin®** provides optimal potency of highly absorbable curcumin.

- **Advanced Bio-Curcumin® with Ginger & Turmerones** provides the following additional nutrients for those seeking more comprehensive support for prolonged functional inflammatory responses:
  - Ginger to complement health benefits,
  - Turmerones to increase the amount of curcumin inside cells, and
  - Phospholipids to further enhance absorption.

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

These statements have not been evaluated by the Food and Drug Administration. These products are 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, a board-certified plastic surgeon, was medical director of the micro-surgical research and training lab at Southern Baptist Hospital in New Orleans, LA, and currently practices in Sun Valley, ID.

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

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

John DeLuca, MD, DC, is a 2005 graduate of St. George’s University School of Medicine. He completed his Internal Medicine residency at Monmouth Medical Center in Long Branch, NJ, in 2008 and is board certified by the American Board of Internal Medicine. Dr. DeLuca is a 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.

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

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

Carmen Fusco, MS, RN, CNS, is a research scientist and clinical nutritionist in New York City who has lectured and written numerous articles on the biochemical approach to the prevention of aging and degenerative diseases.

Norman R. Gay, MD, is proprietor of the Bahamas Anti-Aging Medical Institute in Nassau, Bahamas. A former member of the Bahamian Parliament, he served as Minister of Health and Minister of Youth and Sports.

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

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

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

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

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

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

Maurice D. Marholin, DO, 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, Montenapoleone Medical Center, Milan, Italy. Gastroenterologist and nutrigenomics expert with extensive international university experience, Consulting Professor, WHO-affiliated Center for Biotech & Traditional Medicine, University of Milano, Italy. Hon. Res. Professor, Human Nutrition Dept, TWU, USA. Author of over 130 papers and 400 congress lectures.

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

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

Paul Wand, MD, Fort Lauderdale, FL, is a clinical neurologist with special expertise in treating and reversing diabetic peripheral neuropathy and brain injuries from various causes.
Örn Adalsteinsson, PhD, is chairman of the Life Extension® Scientific Advisory board. He holds a master’s and doctorate from the Massachusetts Institute of Technology (MIT). He has specialized in human therapeutics including vaccines, monoclonal antibodies, product development, nutraceuticals, formulations, artificial intelligence, hormones, and nutritional supplementation. He has also authored articles and contributed to peer-reviewed publications and served as an editor for the Journal of Medicinal Food.

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

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

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

Deborah F. Harding, MD, is founder of the Harding Anti-Aging Center. She is double board-certified in internal medicine and sleep disorder medicine. She also earned the 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), FRCPsci., FACP Dr. Dipnarine Maharaj is the Medical Director of the South Florida Bone Marrow Stem Cell Transplant Institute and is regarded as one of the world’s foremost experts on adult stem cells. He received his medical degree in 1978 from the University of Glasgow Medical School, Scotland. He completed his internship and residency in Internal Medicine and Hematology at the University’s Royal Infirmary.

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

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

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

Xiaoxi Wei, PhD, is a chemist expert in supramolecular assembly and development of synthetic transmembrane nanopores 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 non-toxic, hyper-effective antifreeze agents to fight unwanted ice formation in regenerative medicine and reduce mechanical icing.
Life Extension® Two-Per-Day formulas are the highest-potency multivitamins on the market. In fact, they have the highest potencies of any science-based multivitamin formula that can fit inside two easy-to-take tablets or capsules.

Compared to Centrum® (the the leading multivitamin), 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
- Twice as much vitamin E
- Twice as much vitamin B3
- Twice as much zinc
- Twice as much zinc

Life Extension’s Two-Per-Day contains bioactive forms of vitamin B2 and B6, plus lycopene, alpha-lipoic acid, and natural mixed tocopherols. Two-Per-Day also contains three different forms of selenium, each having its own unique beneficial function in the body.

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

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.
**NIAGEN® is a registered trademark of ChromaDex, Inc., Patents see: www.ChromaDexPatents.com.
It is difficult to describe how differently society thinks today compared to when Life Extension® was established 35 years ago.

When I told people in the early 1980s that my job was to prevent aging, the typical response was “Why would anyone want to do that?” I’d also hear comments like: “Everyone grows old and suffers… what motivates you to interfere?”

When the media asked if the lifestyle changes we advocated were just a “fad” our response was that “once better health is attained, why would anyone want to revert to degenerative illness?”

By the year 1995, something radically changed. Instead of questioning the value of extended life spans, people flat out told me they were “terrified of aging” and wanted to proactively counteract it however possible.

After being ridiculed for seeking to defeat biological aging, I was taken aback by how people’s views had suddenly altered. I still don’t know what triggered this reversal of opinion. Staying alive and healthy always made sense to me.

I am pleased to report that the concept of controlling aging is no longer confined to a minority. Cutting-edge scientists are currently seeking methods to slow and reverse aging in humans. By utilizing translational research and applying these insights to clinical studies, they hope to develop age-reversal technologies in the near future.

We at Life Extension® are making the most significant change in our organization’s history to provide loyal supporters with more benefits than ever before. Please turn the page to see how your participation has been automatically upgraded at no cost to you.
Most of you reading this have been longtime members of the Life Extension Foundation®. You were paying $75 a year for membership. The Foundation is no longer accepting any memberships.

Life Extension® has instead transitioned you to a new rewards program that provides more benefits for less money. There is nothing members need to do to participate. The transition is automatic for all existing members.

Those who are not current Life Extension members will learn how they may participate in this new rewards program.

The New Your Healthy Rewards Program

All current Life Extension members have been automatically enrolled into the Your Healthy Rewards program that will lower costs of supplements and services... with no requirement of an annual membership fee.

None of the perks of your previous Life Extension membership are going away. As a Your Healthy Rewards participant, you will continue to receive:

- **Discounts** of 25% to 60% on the highest-quality nutritional supplements,
- **Free access** to knowledgeable health advisors,
- **Discount pricing** on comprehensive blood tests,
- **Life Extension** magazine... with its unparalleled track record of introducing life-saving medical discoveries,
- Knowledge that you are helping to fund critical medical research.

Special Benefit: You’ll Now Earn Rewards Dollars With Every Purchase

As a Your Healthy Rewards participant, you will now earn reward dollars on every purchase you make from the Life Extension Buyers Club, which effectively lowers the price on everything you buy.*

These valuable reward dollars are automatically available to reduce your cost of future purchases. There’s nothing to keep track of. We do it all for you.

Regular reward dollars earned with every purchase are 2%. But for current Life Extension members, we are doubling reward dollars to 4% for the remainder of your membership.

On top of that, we’ve added a free $25 bonus credit to your account that you can redeem anytime you order a supplement, book, or blood test.

Just to make this clear, as a current Life Extension member, you’ve just been given a free $25 reward bonus plus double reward dollars that can be used to reduce the cost of any future purchase.

To show how simple this is, let’s say you order $200 worth of supplements. With the regular discount, your cost is reduced to $150 (remember, you can save even more when multiple bottles are ordered). Applying your $25 reward bonus reduces what you pay down to $125. You are then credited with double bonus reward dollars of 4% towards future purchases.

There’s nothing for you to do to automatically receive these double bonus reward dollars and the $25 reward bonus. These are already programmed into Your Healthy Rewards personal account.

When your current membership expires, you’ll be offered the opportunity to save even more!

* You earn rewards dollars on all purchases, except shipping fees, Choice program fees, subscription fees, Your Healthy Rewards Premier fees, and any purchase being made with rewards dollars or gift cards.
Option To Upgrade To Premier Your Healthy Rewards

If you are a Life Extension member, you are now automatically enrolled in Your Healthy Rewards at no cost. This gives you double bonus reward dollars (4% versus 2%), a free $25 rewards bonus, and all the other benefits you’ve come to expect.

When your current membership expires, we will notify you to participate in the optional Premier Your Healthy Rewards program that can save you even more money.

The Premier Rewards program will cost only $49.95 annually. (You were paying $75 before.)

In addition to all the benefits you’ve enjoyed as a Life Extension member, with the Premier program ($49.95/year) you will also receive:

• Free, immediate $50 rewards bonus to be used when purchasing any product or blood test,
• Free shipping on all orders,*
• Premier program earns 4% on purchases in reward dollars that never expire and can be used for future orders of supplements, blood tests, and everything else we offer (except toward Premier program fees).

The Premier Rewards program gives you the opportunity to bank valuable reward dollars that can be used towards the purchase of future orders any time you’d like. With the free standard shipping* and $50 reward bonus, along with all your previous benefits, $49.95 has never been a better consumer value.

The advantages of the Premier Rewards program are so significant that it’s hard to think of any Life Extension member who won’t participate. You’ll be notified of the opportunity to join Premier Rewards when your current membership expires.

The bottom line is that beginning September 1, 2015, your cost to feel better, look younger, and live longer has automatically been reduced!

*Choice Standard offers free Standard S&H to anywhere in the 50 United States. Otherwise, you’ll receive a $5.50 discount on shipping fees.
Since most of you still have time left on your membership, there is nothing you need to do now. You’ll receive the automatic double bonus of reward dollars (4%) for purchases you make through the Life Extension Buyers Club for the remaining time of your membership.*

You don’t have to ask for reward dollars. Our internal system calculates and keeps track of your rewards dollars that can be redeemed any time you’d like.

As a current Life Extension member, you don’t have to do anything now except enjoy your double reward dollars and the $25 rewards bonus on any order you’d like.

When your enrollment comes up for renewal, instead of us asking you for $75, we’ll give you the option of paying only $49.95 for the Premier Rewards program. And you’ll immediately receive a $50 rewards bonus that can be used any time to order products.

As a Premier Rewards program participant you’ll enjoy free shipping throughout the year, and automatically earn valuable reward dollars (4%) every time you order. All other benefits of Life Extension membership remain the same.

* You earn rewards dollars on all purchases, except shipping fees, Choice program fees, subscription fees, Your Healthy Rewards Premier fees, and any purchase being made with rewards dollars or gift cards.
For those who don’t know me personally, I like to keep financial matters very simple. So I insisted that there be no unpleasant surprises when participating in the Your Healthy Rewards program. I want you to focus on protecting your precious health and not worry about details.

For those who just want the automatic savings provided by the new Your Healthy Rewards program, do nothing and enjoy the automatic benefits that began September 1, 2015.

Commercial companies often make gimmicky offers that provide little in the way of consumer benefit. In case you haven’t figured it out, we do not behave like profit-driven enterprises.

Our mission is to keep our supporters alive and healthy for an indefinite period of time. In order to accomplish this, we have spent over $150 million on scientific research projects aimed at finding cures for today’s killer diseases and fighting aging. We are not only seeking to slow the aging process, but to significantly reverse it.

You support this kind of pioneering research every time you purchase a supplement, blood test, or other product from the Life Extension Buyers Club.

To reiterate, if you are a current Life Extension member, you don’t have to do anything today to enjoy double reward dollars along with all the benefits you’ve come to expect from Life Extension. Your account has also been credited with $25 towards your next purchase.

As always, we are available 24 hours a day to answer questions you have about this new program. Just call 1-888-224-8239.

For longer life,

William Faloon, Co-Founder
Life Extension Foundation

Reference

1. Human Age Reversal Research, Life Extension magazine, August 2015.

NOTE: The Your Healthy Rewards and the Choice unlimited prepaid shipping and associated benefits are not available to customers serviced by international distributors of Life Extension products.
**YOUR HEALTHY REWARDS**
Because you deserve more

For over 35 years, Life Extension® has strived to be more than just a supplement company. And now we’re raising the bar yet again.

---

**Your Healthy Rewards earns you LE Dollars back on every purchase!**

**Earn 2% LE Dollars**
(Current Life Extension members earn 4% Rewards Dollars for duration of their membership.)

Earn **2% LE Dollars back** on every product or blood test you buy from Life Extension (4% for current Life Extension members).

LE Dollars **NEVER expire**.

Use LE Dollars towards your next purchase from Life Extension.*

*You earn LE Dollars on all your Life Extension purchases (except shipping fees, Choice and Premier program fees, subscription fees, or any purchases made with LE Dollars or gift card). Redeem LE Dollars for any purchase such as products, labs, sale items, and shipping fees. LE Dollars may not be redeemed for Premier program fees, Choice program fees, subscription fees, or to purchase Gift Cards. LE Dollars have no cash value and are not redeemable for cash, transferable, or assignable for any reason. **4% LE Dollars back earned for the remainder of your existing Life Extension membership, after which your earnings drop to 2%. When your current membership expires, you’ll have the opportunity retain the 4% LE Dollars back by upgrading to Your Healthy Rewards Premier described on the next page.*

Your Healthy Rewards is **FREE** — no membership involved, no commitment required. And that’s just the beginning. LE Dollars **never expire**, and you’ll start earning them with your very first purchase. Plus, you’ll enjoy exclusive Life Extension perks like at least 25% off retail prices, a guaranteed Life Extension Magazine® subscription,† and access to expert Health Advisors every day of the year.

---

**Are you a Life Extension Member?**

If so, your account was automatically upgraded to **Your Healthy Rewards**. And to thank you for your loyalty, we’re giving you **double rewards**, or **4% LE Dollars back** through the expiration date of your existing Life Extension membership** — as well as a one-time special **$25 LE Dollar bonus** to use immediately!

---

**As a loyal customer, you deserve more. And you’ll get more with Your Healthy Rewards.**
Option to upgrade to Your Healthy Rewards Premier, and earn even more.

FREE CHOICE Unlimited Shipping

- Enjoy 1 year of FREE unlimited standard shipping to any address in the United States, a $19.95 value!††

$50 LE Dollar Bonus

- Receive $50 LE Dollars at sign up, and each time you renew.

Earn 4% LE Dollars

- Earn 4% LE Dollars back on every product or blood test you buy from Life Extension.
- LE Dollars NEVER expire once earned.
- Use LE Dollars towards your next purchase from Life Extension.*

With Your Healthy Rewards Premier, you get an immediate $50 LE Dollar bonus, for just $49.95 ($59.95 international). If you are already a Choice Standard Shipping customer, no need to upgrade now. Just wait for your Choice free shipping renewal notice.

With benefits like these, Your Healthy Rewards Premier more than pays for itself!

To learn more about Your Healthy Rewards, call toll-free

1-888-224-8239
Mention Code YRG523A

www.LifeExtension.com/Rewards
AMPK Activator
A PARADIGM IN CONTROLLING AGING

Found in every cell, AMPK promotes longevity factors that have been shown to extend life span in numerous organisms. Increasing AMPK signaling “turns off” many damaging effects of aging, thus enabling cells to return to their youthful vitality.

Importance Of AMPK
Studies show increased AMPK activity supports reduced fat storage, new mitochondria production, and the promotion of healthy blood glucose and lipids already within normal range.

Gynostemma Pentaphyllum
An extract of the plant Gynostemma pentaphyllum promotes AMPK activation! In one of many studies showing a wide variety of benefits, researchers documented a 1-inch reduction in abdominal circumference in overweight individuals who took 450 mg daily of G. pentaphyllum extract for 12 weeks.

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

The Anti-Aging Discovery That Cannot Be Overlooked
The suggested daily dosage of AMPK Activator is to take two capsules with the first meal of the day and one capsule with the second meal. Three capsules provide:

ActivAMP®
Gynostemma pentaphyllum extract 450 mg
Rose hip extract 1,119 mg
Standardized to 5% trans-tiliroside 56 mg

To order AMPK Activator, call 1-800-544-4440 or visit www.LifeExtension.com

References

Non-GMO
ActivAMP® is a registered trademark of Gencor.
This supplement should be taken in conjunction with a healthy diet and regular exercise program.
SAMe Improves Depression

Using supplements donated by the Life Extension Foundation, researchers revealed in *Advances in Integrative Medicine* that the addition of the nutritional supplement *S*-adenosylmethionine (SAMe) to selective serotonin reuptake inhibitor (SSRI) therapy improved symptoms in adults who failed to optimally respond to drugs.*

Acting on the positive findings of a previous clinical trial that involved the use of SAMe in depressed serotonin-reuptake inhibitor non-responders, Matthew Bambling of the University of Queensland and colleagues compared the effects of adding 15 weeks of high-dose (1,600 mg) and low-dose (800 mg) SAMe supplementation to the regimens of patients using SSRIs who had less-than-optimal treatment response. Tests administered before and after treatment evaluated depressive symptoms.

After 15 weeks, all patients showed significant improvement in the depressive symptoms. The researchers note that the low dose of 800 mg of SAMe added to SSRI therapy is all that’s necessary to have a positive effect.

**Editor’s Note:** One-third of patients treated for depression with SSRIs suffer a second depressive episode within one year; report the authors. Patients who have experienced two depressive episodes have a 90% chance of experiencing a third episode of depression within a year, with 40% relapsing in less than three months.


Aspirin Study Indicates Protective Effect Against Breast Cancer

Aspirin has been shown in numerous studies to substantially reduce the risk of many types of cancer.* Life Extension has long advocated that those stricken with cancer ask their oncologist about adding aspirin as an adjuvant therapy, as studies show improved survival in cancer patients who take aspirin.

In the journal *Laboratory Investigation,* researchers at the Kansas City Veterans Affairs Medical Center report a protective effect for aspirin (acetylsalicylic acid) against the development of breast cancer in cell cultures and in mice that received tumor implants.* The findings also suggest a role for aspirin in preventing breast cancer relapse.

By administering varying doses of aspirin to breast cancer cell cultures, Sushanta K. Banerjee and colleagues found an increase in the rate of cell death and a reduction in growth among surviving cells. In mice that received implanted breast cancer tumors, 15 days of low-dose aspirin therapy resulted in tumors that were 47% smaller on average than those of animals who did not receive the drug. And in another experiment, mice that were pretreated with aspirin for 10 days prior to cancer cell exposure were found to have less cancerous growth in comparison with those that were not pretreated.

**Editor’s Note:** “We find that acetylsalicylic acid not only prevents breast tumor cell growth in vitro and tumor growth in nude mice xenograft model through the induction of apoptosis, but also significantly reduces the self-renewal capacity and growth of breast tumor-initiating cells/breast cancer stem cells and delays the formation of a palpable tumor,” Dr. Banerjee and associates report.

Melatonin Improves Bone Density

A study published in the *Journal of Pineal Research* of postmenopausal women with osteopenia has shown that long-term treatment with melatonin, which naturally decreases in the body with age, can improve the density of bone at the neck of the femur, in proportion to the level of treatment.*

In the trial, researchers gave 81 healthy postmenopausal women with osteopenia, aged 56 to 73, nightly doses of 1 or 3 mg of melatonin or a placebo, and measured them at the beginning of the trial and after a year. "We were looking at body composition and, at the spine and hip, bone mass density," said lead researcher Dr. Anne-Kristine Amstrup. Biochemical markers of calcium homeostasis were also measured throughout the trial.

"Compared with the women taking the placebo, those on the 1 mg dose experienced a bone mass density increase of 1.4% at the neck of the femur," added Dr. Amstrup. "Those on the higher dose experienced an increase of 2.3%. The treatment did not affect bone mass density elsewhere, nor bone turnover."

**Editor’s Note:** The study also found that the melatonin treatment helped study participants lose fat (almost 7% over the course of the year) while gaining lean tissue instead.

*J Pineal Res. 2015 Jun 3.*

Life Extension®’s Co-Founder Has Editorial Cited In Peer-Reviewed Journal

An excerpt from the June 2015 editorial written by Life Extension®’s Co-founder, William Faloon, was cited in the *International Journal of Pharmaceutical Compounding* (IJPC). This *Life Extension*® article revealed that lower levels of testosterone and higher levels of estrogen in men are strongly associated with a greater risk of sudden cardiac arrest. IJPC is a scientific and professional journal covering pharmaceutical compounding topics that are relevant in allowing today’s pharmacists to meet the needs of patients.*

The "As We See It" editorial quoted in the IJPC is entitled "Surprising Factor Behind Sudden Cardiac Arrest." In the article, Mr. Faloon quotes a study that concludes that 50% of cardiovascular deaths are the result of a condition called sudden cardiac arrest—the unexpected acute loss of heart function.

**Editor’s Note:** The editorial states that the FDA is preventing more lives from being saved by continuing to discourage hormone balance in aging men. The FDA also announced in March 2015 that labels of testosterone drugs must carry a warning that testosterone may increase the risk of heart attack and stroke. This inappropriate new warning will curtail the prescribing of testosterone, limit insurance coverage, and drive up consumer costs. Consequences will include more deaths from sudden cardiac arrest.

*IJPC. 2015 May/Jun.*

Trial Finds Benefit For Ubiquinol In Parkinson’s Disease

A trial published in *Parkinsonism & Related Disorders* evaluating the effects of a reduced form of CoQ10 known as ubiquinol in men and women with Parkinson’s disease found improvement among a group of subjects experiencing "wearing off”—a return of symptoms that occurs when treating the disease with levodopa, which indicates the need for adjustment of dosage or change in medication.*

The trial compared the effects of 300 mg ubiquinol to a placebo among a group of Parkinson's disease patients who had exhibited wearing off and another group of subjects with early disease not treated with levodopa. Participants in the first group were treated for 48 weeks, while those with early disease received 96 weeks of treatment. Unified Parkinson’s Disease Rating Scale (UPDRS) scores were used to grade the subjects’ symptoms before, during, and after treatment.

By the end of the trial, the change in total UPDRS scores compared to baseline values indicated improved symptoms among the groups receiving ubiquinol.

**Editor’s Note:** "A recent trial of the oxidized form of CoQ10 for Parkinson’s disease failed to show benefits; however, the reduced form of CoQ10 (ubiquinol-10) has shown better neuroprotective effects in animal models," writes author Asako Yoritaka of Japan’s Juntendo University and associates. "These findings are in agreement with an observation of a higher plasma concentration of CoQ10 after ingestion of the reduced form versus the oxidized form, indicating that the reduced form is absorbed more efficiently.”

*Parkinsonism Relat Disord. 2015 May 29.*
Protective Effect Of Vitamin E Against Nonalcoholic Steatohepatitis

A meta-analysis of trials examining the effects of vitamin E supplementation in individuals with nonalcoholic steatohepatitis (NASH) affirmed a benefit for the vitamin in association with several facets of the disease.*

Dr. Renfan Xu and associates selected three articles that met the criteria for their analysis, which included a total of 245 men and women with NASH. Trials involved daily supplementation with a placebo or vitamin E alone or in combination with other compounds.

In the two studies that compared pretreatment to post-treatment histological factors that included steatosis (abnormal cellular retention of lipids), ballooning (a form of programmed cell death), and lobular inflammation, all factors were improved to a greater extent by the end of the trials among those who received vitamin E in comparison with the control groups. In all trials, vitamin E supplementation was associated with improvement in fibrosis compared to controls.

Editor’s Note: “This meta-analysis revealed that vitamin E supplementation resulted in significant improvements in histological parameters in NASH patients,” the authors conclude. “Additional large-scale high-quality studies are needed to investigate the effect of vitamin E supplementation on NASH patients with outcomes (histological parameters, biochemical variables, and adverse events) oriented to obtain more comprehensive information on supplementation for clinical use.”


Higher Carotenoid Levels Associated With Breast Cancer Protection

A case-control study reported in the American Journal of Clinical Nutrition found a protective effect for high plasma levels of carotenoids against the risk of developing breast cancer.*

The study included 2,188 Nurses’ Health Study participants who developed breast cancer over the 20 years following an initial blood sample collection during 1989 to 1990, and an equal number of matched controls who did not develop the disease. Initial and subsequently collected blood samples were analyzed for plasma alpha carotene, beta carotene, beta cryptoxanthin, lutein and zeaxanthin, and lycopene.

For women whose total carotenoid levels were among the top 20% of subjects, there was a 23% lower risk of breast cancer in comparison with those whose levels were among the lowest 20%. Among individual carotenoids, alpha carotene, beta carotene, beta cryptoxanthin, lutein and zeaxanthin, and lycopene were significantly protective. High levels of carotenoids were more protective against recurrent or lethal breast cancer than nonrecurrent and nonlethal disease.

Editor’s Note: “These results suggest carotenoids may inhibit tumor initiation, which is compatible with hypothesized mechanisms, including the conversion of provitamin A carotenoids to retinol, which regulates cell growth, differentiation, and apoptosis, and the antioxidant capacity to scavenge reactive oxygen species and prevent DNA damage,” stated authors Heather Eliassen of Harvard University and colleagues.

Muscles Benefit From Omega-3

Findings from a trial reported in the American Journal of Clinical Nutrition reveal improvements in muscle mass and function in adults supplemented with omega-3 polyunsaturated fatty acids (PUFA) in comparison with a placebo group.* Researchers at Washington University School of Medicine randomized 60 men and women to receive supplements containing a total of 1.86 grams eicosapentaenoic acid (EPA) and 1.5 grams docosahexaenoic acid (DHA), or a placebo daily for six months. Thigh muscle volume, handgrip strength, one-repetition maximum upper and lower body strength, and average isokinetic muscle power were evaluated at the beginning of the study, at three months (with the exception of thigh muscle volume), and at the end of the treatment period.

At six months, handgrip strength, thigh muscle volume, and one-repetition maximum muscle strength were significantly increased in omega-3 fatty acid supplemented participants in comparison with the control group.

Editor’s Note: “Additional studies are needed to determine whether long-term omega-3 PUFA therapy can sufficiently slow the declines in muscle mass and function that normally occur in older adults to significantly delay or even prevent sarcopenia and a loss of physical independence or cure it in already sarcopenic persons,” the authors say.


AMPK Slows Age-Related Muscle Loss

In an article appearing in Cell Metabolism, scientists from McMaster University describe the role of AMPK, an enzyme that activates autophagy, in maintaining muscle mass.* Previous research by the team revealed that AMPK is activated by exercise as well as the drug metformin.

The current research involved mice that were modified to lack skeletal muscle AMPK.

“We found that the body’s fuel gauge, AMP-activated protein kinase (AMPK), is vital to slow muscle wasting with aging,” reported lead researcher Gregory Steinberg, who is a professor of medicine at McMaster’s Michael G. DeGroote School of Medicine and co-director of the Metabolism and Childhood Obesity Research Program. “Mice lacking AMPK in their muscle developed much greater muscle weakness than we would have expected to see in a middle-aged mouse. Surprisingly, these AMPK-deficient mice, which were the equivalent of being just 50 years old, had muscles like that of an inactive 100-year-old.”

Editor’s Note: “It is known that AMPK activity in muscle is ‘dialed down’ with aging in humans, so this may be an important cause of muscle loss during aging,” Dr. Steinberg added. “We know we can turn on the AMPK pathway with intense exercise and commonly-used type II diabetes medications. By knowing that AMPK is vital for maintaining muscle mass with aging, we can now try to adapt exercise regimes and existing drugs to switch on AMPK in muscle more effectively. The development of new selective activators of the AMPK pathway in muscle may also be effective to prevent muscle loss with aging.”

* Cell Metab. 2015 Jun 3.

Curcumin Increases Effectiveness Of Chemo Drug In Head And Neck Cancer

A new study reported in the journal Oncotarget found that a synthetic version of the common cooking spice curcumin can significantly reduce resistance to cisplatin, a chemotherapy drug used to treat head and neck cancer.* Researchers at UCLA Jonsson Comprehensive Cancer Center used a brand new technology to deliver the synthetic curcumin to the cancerous cells. Drs. Marilene Wang and Eri Srivatsan used liposomes—a kind of microscopic vehicle that delivers encapsulated synthetic curcumin—to target resistant head and neck squamous cell carcinoma.

“Cisplatin goes through the p16 and p53 pathways, while the curcumin uses an alternate pathway,” said Dr. Wang. “The resistant cell lines don’t respond to the typical pathway that cisplatin would go through; that’s why curcumin is able to kill the resistant cancer cells.”

Researchers hope the results will lead to human clinical trials and the development of new therapies for head and neck cancer patients.

Editor’s Note: Head and neck cancers affect 42,000 people in the US each year. The five-year survival rate for all head and neck cancer patients is 57%; for patients with stage IV oral cancers, the survival rate is 20%.

* Oncotarget. 2015 May 19.
Life Extension® first introduced SAMe in 1997. Since then, researchers around the world have continued to discover impressive benefits of this amino acid. While SAMe is largely known for its effects on optimal mood and brain support, it has also shown benefits for the liver and joints.

A study by Harvard Medical School and Massachusetts General Hospital cited the impressive benefits of SAMe for mood elevation.¹ A report published in Germany showed that SAMe may help maintain healthy neurological function. This impressive report found that SAMe:

- **Increased** glutathione levels by 50% and glutathione enzyme activity by 115%,
- **Decreased** a measurement of free radical activity by 46%, and
- **Inhibited** lipid peroxidation by 55% in culture.

In addition to these findings, SAMe also improves brain cell methylation, thereby facilitating youthful DNA enzymatic actions, which may help account for SAMe’s mood-boosting properties. These enzymatic reactions are required for the healthy conversion of neurotransmitters such as serotonin and dopamine.

References

(SAMe is also available in boxes containing 20 200 mg tablets. Retail price is $16. If you buy four, the price is reduced to $10.50 per box. Item #00358).

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

CAUTION: SAMe should not be taken by those diagnosed with bipolar disorder.

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

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

**Better Absorption For Optimum Benefit**

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

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

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

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

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

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$36</td>
<td>$27</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$32 each</td>
<td>$24 each</td>
</tr>
</tbody>
</table>

Non-GMO

AprèsFlex® is a registered trademark of Laila Nutraceuticals exclusively licensed to PL Thomas—Laila Nutra LLC. U.S. Patent No. 6,551,496 and other patents pending. FruiteX B® and OsteoBoron® are registered trademarks of VDF FutureCeuticals, Inc. U.S. Patent No. 5,962,945. **UC-II®** is a registered trademark of InterHealth N.I. U.S. patents 7,846,487, 7,085,820 and EPO patent EP 1435906B1; Canadian patent CA 2459913C; and Japanese patent JP 4800374B2.

References

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

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

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

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

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

The suggested dose is one capsule daily of this resveratrol formula.

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

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

References
Scientists report that the strength of your immune system—at least 70% of which is located in your gut—relies on the makeup of your intestinal bacteria.\(^1\)\(^2\)

Put differently, the estimated 100 trillion bacteria living in your gut are the human equivalent of an environmental ecosystem. And like global ecosystems, our personal microbe population is losing its diversity—and threatening our health as a result.\(^3\)

Scientists have discovered that disruption of the balance between good and bad bacteria in the gut contributes to the development of chronic conditions such as autoimmune disorders, metabolic syndrome, diabetes, chronic fatigue syndrome, nonalcoholic fatty liver disease, obesity, and more.\(^4\)\(^-\)\(^13\)

An innovative combination of six critical probiotic strains has been found to rebalance gut flora—powerfully fighting off many of the factors leading to chronic disease.

This combination can be obtained in a dual-encapsulation format that better enables healthy intestinal colonization by protecting the beneficial bacteria from stomach acids that would otherwise destroy them.
PROBIOTICS PROVIDE ANTI-AGING DEFENSE

Targeted Probiotics

With advancing technology, scientists have been able to select specific strains of organisms to accomplish precise tasks.\textsuperscript{34} Evidence now shows that individual species of probiotics within the \textit{Lactobacillus} genus or the \textit{Bifidobacterium} genus can powerfully block a variety of pathological factors that lead to different chronic diseases.\textsuperscript{35}

Here are some specific health benefits attributed to each beneficial bacteria species:

- \textit{Lactobacillus acidophilus} has been shown to decrease the DNA damage that triggers malignant cell development,\textsuperscript{36}
- \textit{Lactobacillus rhamnosus} improved markers of metabolic syndrome,\textsuperscript{37-39}
- \textit{Lactobacillus paracasei} reduced markers of inflammation,\textsuperscript{40}
- \textit{Bifidobacterium lactis} improved blood sugar control,\textsuperscript{41}
- \textit{Bifidobacterium bifidum} decreased liver damage,\textsuperscript{37} and
- \textit{Bifidobacterium longum} reduced DNA damage that can trigger malignant cell development.\textsuperscript{42}

Experimental models and randomized, controlled human intervention studies have confirmed that taking a probiotic supplement to restore the diverse balance of gut bacteria restores natural protection against multiple diseases.\textsuperscript{43}

Minor Factors Trigger Massive, Long-Term Effects

The delicate balance between beneficial and bad gut bacteria can be disrupted by innumerable factors,\textsuperscript{14-27} including the use of antibiotics,\textsuperscript{14-16} excessive hygiene,\textsuperscript{15} the Western diet,\textsuperscript{15-19} modern medical treatments,\textsuperscript{18} and obesity.\textsuperscript{20,22}

As you age, your bacterial population gradually shifts towards a disease-promoting, rather than a disease-preventing state—simply as a result of aging itself.\textsuperscript{23-27}

Variation in your body's bacterial makeup has been connected to effects as far-reaching as your individual response to toxins, your metabolic state and degree of insulin resistance, and even your brain development and behavior.\textsuperscript{3,14,28}

If it seems shocking that such microscopic life forms could control so much of your health destiny, keep in mind their sheer numbers. Your microbes outnumber your body cells by 10 to one,\textsuperscript{29,30} and their genes outnumber your own genes by 100 to one.\textsuperscript{30}

In fact, your gut is so jam-packed with bacteria that half of your stool is not leftover food—it's microbial biomass. And as fast as they're excreted, these microbes multiply to replenish their numbers.\textsuperscript{3}

How Probiotics Impact The Entire Body

So why is it that rebalancing the bacteria in your gut affects areas of the body outside of the intestines? The answer lies in the fact that the intestinal tract contains more chemical detection and signaling molecules than any other organ—and those molecules affect many aspects of health.\textsuperscript{31}

Intestinal bacteria produce \textit{proteins} that have powerful influences on these chemical detectors.\textsuperscript{32} Over time, an imbalance in the ratio of good-to-bad bacteria activates these many detectors in negative ways that can trigger the development of a host of diseases in many areas of the body—\textit{not} just those associated with the gut.

Fortunately, \textit{probiotic supplements} can restore a healthy balance to gut bacteria and \textit{reverse} these disruptions to intestine-based signaling mechanisms. This, in turn, reverses the negative influence that triggers the development of chronic disease.\textsuperscript{33}

In other words, probiotics can restore your body's natural, \textit{intestine-based} protection against a host of \textit{non}-intestinal diseases and shield you from the diseases of aging.\textsuperscript{4-7,11,18,20}
Probiotics Strengthen And Modulate Your Immune System

In recent years the enormous importance of the gut bacteria in modulating the immune system has been increasingly recognized. Not only does more than 70% of the human immune system reside in the gut, but the intestinal immune system comprises more antibody-producing cells than the rest of the body put together. As a result, gastrointestinal secretions are as rich as breast milk in health-supporting and disease-preventing factors.

A poorly functioning immune system is at the root of many chronic degenerative diseases. Too little response makes us vulnerable to the infections that claim the lives of so many older adults. However, inappropriate overactivation can produce chronic inflammation—contributing to a litany of age-related disorders such as diabetes, cancer, and metabolic syndrome.

Using probiotics to help restore the balance of your gut microbiome can strengthen its ability to interact with your immune system in many ways. These friendly bacteria stimulate healthy immune surveillance, boosting populations of cells that seek out and destroy infecting organisms and cancers. They upregulate inflammatory cytokines during the acute stage of an infection or other threat to your body’s integrity—even cancer, as we’ll examine next—but they also contribute to suppression of the inflammatory response as the threat fades.

Reducing Cancer With Probiotics

The risk of cancer, especially in the colon, can be reduced through the use of probiotics.

One good reason for this is that supplementation with Lactobacillus acidophilus and Bifidobacterium longum significantly decreases the DNA damage that can trigger malignant cell development. In addition, replenishing beneficial bacteria with supplements has been found to boost natural antioxidant and detoxification enzymes that prevent the activation of potential dietary carcinogens.

In one study, when patients with colon cancer and/or with precancerous polyps supplemented with probiotic bacteria, they experienced sharply reduced proliferation of abnormal colon cells and a significant decline in harmful Clostridium bacteria. (In this study, the probiotic was combined with prebiotics, which are substances that feed or promote the accompanying bacteria).

Probiotics Protect Against Chronic Disease

- Your personal microbial ecosystem may be abundant—providing a home for an estimated 100 trillion bacteria—but it’s losing its diversity, which in turn threatens your health.
- Gut microbiota become unbalanced by an assortment of common factors—gestation duration, Caesarian births, baby formula, antibiotics, excessive hygiene, the Western diet, modern medical treatments, obesity—and even aging itself.
- An increase in the distorted microbial population in the modern human gut correlates with a rise in diseases linked to this imbalance. These include type II diabetes, cancer, Crohn’s disease, ulcerative colitis, celiac disease, nonalcoholic fatty liver disease, gastroenteritis, rheumatoid arthritis, asthma, and allergies.
- It’s difficult to control the factors disrupting your microbial balance, but a range of beneficial, acid-resistant probiotic strains can work together to rebalance your gut. A novel dual-encapsulation format is available that protects them from stomach acids that would otherwise destroy them.
In addition, scientists have demonstrated that probiotic organisms turn on a number of protective signaling mechanisms that play a role in preventing cancer. For instance, probiotics have been documented to:

- Boost populations of immune cells that seek out and destroy cancers,47-49
- Upregulate inflammatory cytokines during an acute stage of cancer or other threats,48,50
- Suppress the inflammatory response that could cause tissue or organ damage,48,50
- Suppress bacteria that convert harmless pro-carcinogen molecules into carcinogens,48,53
- Bind to potential carcinogens, promoting their excretion,53
- Downregulate an enzyme that converts harmless molecules into carcinogens,53 and
- Stimulate the expression of liver enzymes that detoxify carcinogens.53

**Well-Researched Probiotics And Their Specific Anti-Disease Benefits**

Numerous factors can unbalance your gut microbiota. As an extreme example, remarkable findings released online by the journal *Nature* on February 16, 2015, suggest that, just as you can pass certain immune traits along to your children via your own DNA, you may also be passing along immune traits to your offspring via the bacteria in your body.86

Probiotics can rebalance the bacterial makeup of your gut. This in turn affects your immunity and your body’s risk of a spectrum of diseases. Scientists continue to add to the list of anti-disease effects attributable to probiotics.

As a broad group, probiotics are commonly associated with their capacity to help prevent or treat:

- Diarrhea (especially following treatment with certain antibiotics)
- Vaginal yeast infections and urinary tract infections
- Irritable bowel syndrome (IBS)
- Certain intestinal infections
- The severity and duration of colds and flu

**Improving Diabetes And Metabolic Syndrome**

Animal studies as well as human diabetes clinical trials have shown that both *Lactobacillus* and *Bifidobacteria* probiotics improve insulin resistance and lead to significant reductions in blood sugar concentrations,55-57

In a study published in *Nutrition* journal, patients with type II diabetes consumed a probiotic yogurt containing *Lactobacillus acidophilus* and *Bifidobacterium lactis*. After six weeks, they experienced significant improvements in fasting glucose and hemoglobin A1c (a measure of long-term blood sugar control). Total antioxidant status also increased.54

**Reversing Obesity With Probiotics**

Studies have shown that there is an association between the overuse of antibiotics and obesity. Research in both animals and humans showed that supplementing with probiotics led to a significant reduction in body weight and body mass index (BMI).17,58-65

In one study, probiotic supplements were given to mothers prenatally (from about four months before, and six months after, birth). As a result, excessive weight gain was subsequently reduced in the mothers—and in their children from birth right through to 10 years of age.166
Human and animal studies show that probiotics also attenuate nonalcoholic fatty liver disease (NAFLD) due to obesity and a high-fat diet.33,67-71

**Enhanced Intestinal Health**

Of course, despite the benefits probiotics provide throughout the body, most people still associate the use of probiotics with the improved intestinal health that results directly from higher levels of beneficial bacteria.72,73

*Lactobacillus* and *Bifidobacteria* have been shown to support intestinal function and improve both diarrhea and constipation.74-76 Probiotic supplements have helped improve the quality of life and symptoms of patients with functional bowel disorders such as irritable bowel syndrome (IBS) and ulcerative colitis, as well as those of generally healthy people.75,77-79

*Helicobacter pylori* is a common bacterium infecting about half of the world’s population.80 It can cause a diverse spectrum of gastrointestinal disorders, including ulcers. However, due to antibiotic resistance and patient noncompliance, several studies have shown that there is a widespread failure of antibiotic therapy in treating *Helicobacter pylori.*81

A meta-analysis of 33 randomized, controlled trials found that several strains of *Lactobacillus* and one strain of *Bifidobacterium*—when added to antibiotic therapy—significantly increase H. pylori eradication rates.82

Additionally, probiotics promote the function of the intestinal inner lining, enhancing its ability to act as a barrier to the entry of potentially dangerous organisms and chemicals into the bloodstream.83-85

**Maximizing The Impact Of Probiotics**

As beneficial as probiotics are, they have to be able to reach your intestines in order to work—and that requires remaining intact as they pass through the harsh, acidic environment in the stomach. This can limit the number of the live microbes that reach their destination—and in turn, limit their beneficial effects.

Fortunately, a dual-encapsulation technology is available that overcomes this problem by providing a capsule-within-a-capsule. This keeps the capsule that contains the probiotic intact longer to ensure the bacteria reach the small intestine safely. As a result, the probiotic can deliver unprecedented numbers of live colonies to exactly where your body needs them to rebalance your microbiota for critical disease-prevention effects.

It is also important to obtain a variety of bacterial strains that have been shown to deliver comprehensive health benefits.

Experts have recommended supplementation with six potent, complementary, and acid-resistant probiotic strains:

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

A proprietary blend is available that combines all six of these strains with the dual-encapsulation technology that ensures they hit their mark—and powerfully support whole-body health.

**Summary**

Like the ecosystems around the globe, our personal internal microbe population is losing its diversity and represents a real threat to our long-term health.

From the womb to old age, our gut microbiota can become unbalanced by an array of common factors—gestation duration, Caesarian births, baby formula, antibiotics, excessive hygiene, the Western diet, modern medical treatments, and obesity. And finally, aging gradually shifts our bacterial makeup from a disease-preventing state towards a disease-promoting state!
An increase in diseases is now linked to the increasingly distorted microbial balance in the human gut (known as dysbiosis). These diseases include type II diabetes, cancer, Crohn’s disease, ulcerative colitis, celiac disease, nonalcoholic fatty liver disease, gastrointestinal, rheumatoid arthritis, asthma, and allergies.

Fortunately, a range of probiotic strains, when taken together, can rebalance our gut. And to make sure they reach their destination intact, a novel dual-encapsulation format—a capsule-within-a-capsule—protects them from stomach acids that might otherwise destroy them.

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

References


It's not easy to get all the vital nutrients you need to take care of your eyes from food alone. Fortunately, MacuGuard® Ocular Support with Astaxanthin contains the nutritional building blocks necessary to maintain the structural integrity of your eyes.

MacuGuard® Ocular Support with Astaxanthin maintains eye health in many ways:1-7

- Supports lutein concentration in the eye
- Supports efficient absorption of lutein in the bloodstream
- Provides phospholipids to enhance lutein in the cell membrane
- Maintains zeaxanthin concentrations in the eye
- Provides meso-zeaxanthin, which is difficult to obtain from dietary sources
- Contains cyanidin-3-glucoside, shown to help with night vision.
- Provides astaxanthin to protect against free radical-induced DNA damage, which may play a protective role against eye fatigue.

Contains soybeans.

LuteinPlus® and Mz® are registered trademarks of Nutriproducts Ltd., UK, licensed under U.S. Patent 8,623,428.

References:

To order MacuGuard® Ocular Support with Astaxanthin, 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.
DHEA is a critically important hormone, but its production declines sharply as we age. By the time you reach 70, your DHEA levels are likely to be 75-80% lower than when you were at your peak.1-4

Scientists are discovering numerous health benefits when aging people restore their DHEA to youthful ranges. DHEA therapy has been shown to:

- Support healthy arterial structure and function5,6
- Support endothelial health by helping with blood flow7
- Promote insulin sensitivity8,9
- Benefit the normal aging brain10,12
- Improve mood and alleviate melancholy13
- Protect hip bone and spine bone mineral density14
- Enhance the increases in muscle mass and strength in the elderly with resistance exercise15
- Boost a broad array of immune system cells and signaling molecules16

By supplementing with DHEA, you can get your levels back to youthful values. An ideal daily dose of DHEA for many healthy aging people is 25 mg. 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 $18</td>
<td>$13.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$11.25 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

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.

Non-GMO

References
Scientists are increasingly discovering that probiotics impact the health of our entire body. Unfortunately, most commercial probiotics are destroyed by the stomach’s natural digestive acids before they reach their destination.

**FlorAssist® Probiotic Liquid Vegetarian Capsules**

with “dual encapsulation” technology delivers maximum probiotic protection to your small intestines.

**FlorAssist® Probiotic Liquid Vegetarian Capsules:**

- Contain probiotic strains that are **stomach acid resistant**
- Have **dual encapsulation technology**, which keeps the capsule intact longer and ensures that the probiotic reaches the small intestine
- Provide **15 billion CFU**—Colony Forming Units—per capsule
- Contain **6 varieties** of beneficial bacteria

**FlorAssist™ 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 and help maintain a healthy surface and aid in support for the digestive system.

**FlorAssist® Probiotic**

Item #01825 • 30 liquid veg. capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$32</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$21 each</td>
</tr>
</tbody>
</table>
ADVANCES IN FISH OIL PURITY AND POTENCY
When fish oil supplements were first introduced, the main questions consumers asked were whether the omega-3 oils were free of contaminants and rancidity.

These were valid concerns as certain cold-water fish can be laden with dangerous pollutants.

Since omega-3s are polyunsaturated fats, they rapidly degrade (oxidize) under normal conditions.

For some people, even the slightest amount of rancidity created digestive upsets that made taking fish oil supplements intolerable.

Consumers today are fortunate that they can obtain high-quality fish oil supplements that are virtually free of contaminants and oxidized fats.

In an interesting turn for the better, competitive forces have raised the quality bar even higher for omega-3 supplements.

This article reveals a new source of fish oil that provides a superior standard of potency and freshness.

Most people have, by now, heard of the health benefits available from consumption of cold-water fish and fish oil—among the best-known are cardiovascular protection and promotion of brain health.

Emerging evidence shows that consumption of omega-3s provides an even wider spectrum of critical health benefits.

In order to derive meaningful results from fish oil, a relatively high daily dose is needed.

We at Life Extension® have long argued that optimal supplemental intake of omega-3s should be around 2,400 mg of EPA/DHA per day.

Regrettably, the average American consumes just 200 mg per day of active EPA and DHA—that’s less than one-tenth of the optimum dose.
A new source has been identified that uses fish obtained from Alaska’s Bering Sea, which then goes through extraordinary production measures to eliminate any concerns of contamination and rancidity.

Here is an overview of the eight steps used to produce ultra-purified fish oil with a higher EPA/DHA concentration:

- Upon harvesting from pristine Alaskan waters, the fish are kept in chilled seawater tanks to guard against initial degradation.
- The oil is carefully separated from the solid parts, quickly packed into oxygen-tight bags, and sent on to the EPA and DHA refining process.
- The initial pretreatment involves distillation of the raw fish oil to draw off any oxidation products, cholesterol, PCBs, and other environmental contaminants, yielding a purer starting product.
- A flash distillation technique is used to separate and concentrate the beneficial EPA and DHA from other fats, and further remove contaminants.
- A molecular distillation technique deodorizes fishy odor and taste, then further removes pollutants and any oxidation products.
- This double-distilled fish oil is then filtered to remove any residual dioxins, heavy metals, and chlorinated pollutants using an activated carbon filtration media.
- This ultra-purified fish oil is then packaged with inert gases such as argon to displace any residual oxygen, thus solidly protecting the long-term freshness during shipping and storage.

Most Consumers Unaware

A problem we uncovered several years ago is that even those supplementing with a product labeled “fish oil” often obtain insufficient amounts of EPA and DHA.

This happens because some fish oil promoters pretend that their low-potency products contain enough omega-3s to provide the benefits documented in the peer-reviewed published literature.

We only wish it were possible to fit the requisite EPA/DHA into one or two small capsules. The reality is that to obtain optimal potencies of omega-3s, one has to swallow four modest-size, highly-concentrated fish oil capsules daily with meals.

There is no way around this potency mandate, yet surveys that Life Extension has done with health-conscious individuals reveal they take far less EPA/DHA (on average) than is needed to derive the expected benefits.

What Makes Fish Oil Different Than Other Supplements?

When one looks at the expenses involved in harvesting, stabilizing, filtering, distilling, and standardizing quality fish oil, it is remarkable that it is not a high-priced nutrient.

Unlike low-cost supplements such as vitamin D, it is not yet possible to synthesize fish oil EPA/DHA. That means the nutrient has to be first fished from the ocean and then meticulously processed to obtain purified and stabilized omega-3 fatty acids.

There are several areas that consumers should be aware of in choosing a fish oil with the goal of optimizing their daily intake of EPA and DHA.

Fortunately, advanced stabilizing/distillation techniques are providing solutions to each of these areas.

Guarding Against Environmental Pollutants

Contamination has been an ongoing concern with health-conscious consumers.

Wild-living, oil-producing fish are exposed to environmental pollutants, some of which may become concentrated in the animals’ livers, the primary oil-providing organ.

These contaminants can include mercury, polychlorinated biphenyls (PCBs), and organochlorine pesticides, all of which have the potential to cause ill effects in humans.61,62

The latest fish oil harvesting strategy involves using fish obtained from pristine ocean waters that have lower levels of contaminants to begin with.
When looking at the relative low price for a bottle of quality fish oil softgels, one should salute the free market for being able to efficiently produce such a stabilized, purified, and standardized product that starts off with a material (cold-water fish) obtained from open natural sources.

**Protecting Against Rancidity (Oxidation)**

Assuring *freshness* of a fish oil supplement is always a challenge. That’s because *polyunsaturated omega-3s* are highly susceptible to oxidizing degradation.

**Oxidation** reduces the EPA/DHA potency of the oil, produces off-tastes and smells of rancid fats, and can generate free radicals in whoever ingests it.

A fish oil blend derived from pristine Alaskan coastal waters utilizes a *multistep* process to remain exceptionally *fresh*. The result is a fish oil that has a greater than 5-fold reduction in the upper level threshold measurement for *oxidation*, adding a new definition to the word “*quality*.”

A measurement of *total oxidation value* is used to assess the amount of *oxidized fats* permitted in a fish oil supplement. The maximum standard for quality fish oils for *total oxidation value* has been up to 26. A newly identified *Alaskan-derived* fish oil blend reduces the upper level threshold for this measure of rancidity down to 5.

Please know that *total oxidation values* up to 26 are safe and long established in the fish oil industry. Reducing this upper threshold down to 5 represents a major improvement in ensuring fish oil *freshness* and tolerability.

Another measurement of freshness looks at current *oxidation* levels by assaying for *peroxides*. Industry standards for quality fish oil permits up to a 5.0 *millequivalent* per kilogram *peroxide* reading. This new Alaskan-derived fish oil blend reduces the maximum upper level threshold *peroxide* measure to a virtually nonexistent 1.0 *millequivalent* per kilogram, with actual *peroxide values* measuring at a fraction of that limit.

The final analysis of fish oil *freshness* looks at past *oxidation* levels and measures of *aldehyde* production during handling and storage. This test measures *anisidine* levels and permits a maximum value of 20. The maximum anisidine standard of the new Alaskan-derived fish oil blend does not exceed 5.

These ultra-low oxidation standards are obtained by using only freshly caught fish, carefully removing all traces of oxidation through multiple refining processes, and then aggressively purging *oxygen* using *nitrogen* and *argon* gases to prevent rancidity from initiating in storage. This ensures an exceptionally fresh oil blend and a very long shelf-life.

**What You Need To Know**

**Advances In Fish Oil Quality**

- **There is a wide range of quality and potency among the fish oil supplements on today’s market.**
- **Concerns about contamination and about the sustainability of the world’s fisheries also raise flags for many consumers, who might thereby limit their use of these valuable supplements.**
- **Modern fishery and processing techniques, however, along with sourcing fish from certified sustainable fisheries, have now made available extremely potent fish oils standardized to specific concentrations and ratios of EPA and DHA.**
- **These techniques also minimize the risk of exposures to toxic chemicals and maximize freshness of the oils, meaning that higher doses can be taken with confidence, even while ingesting fewer and smaller softgels.**
Improved Tolerability

This new level of freshness is especially important to those with gastric sensitivities to fish oil supplements. The extra-purification processes remove oxidation products that can help reduce the burping and other digestive discomforts that preclude some people from ingesting enough omega-3s.

The problem was especially evident in the 1980s-1990s when fish oil was not nearly as well-protected against rancidity as it is today. The latest purification processes described in this article will make fish oil more tolerable, and thus enable a greater percentage of the public to ingest this health promoting nutrient. (Those who remain hypersensitive to fish oil may continue using enteric-coated fish oil supplements.)

Ensuring Wild Fish Sustainability

Sustainability of wild fish stocks is a global concern, as overfishing threatens breeding populations. Major commercial fisheries like the Gulf of Maine and Georges Bank Atlantic Cod fisheries have been overexploited, and they are now a mere shadow of their former abundance.

Fisheries off the coast of Alaska remain robust because of the painful lessons learned through the collapse of the New England fisheries. These Alaskan fisheries are operated under the watchful guidance of the US Government and the State of Alaska.

They ensure that only US-flagged vessels and US-owned companies strictly follow the fishing quotas set by scientific surveys of the biomass. The Alaska Pollock fishery in particular is held up as the gold standard of responsible fisheries management around the world. This fishery is managed not for the short term, but to ensure that this abundant natural resource is available to provide healthful food for generations to come. Sustainable fisheries management is even written into the Alaska State Constitution!

The Alaska Pollock currently exists in abundant populations that are not overexploited, permitting ample harvesting at just 50% of the Acceptable Biological Catch, meaning that plenty of breeding fish remain free to sustain and grow the entire biomass. The fishery is also managed to ensure that protected species like the Stellar Sea Lion are able to thrive in “no-catch” zones.

Sustainability is not just concerned with the amount of fish that are caught from a fishery. A major impact to consider is what fish may end up in the net. Alaska Pollock are a tightly schooling fish that are captured with a very low-impact, mid-water catch technique.

Indeed, because of the conservative management of the fishery, there has been a recent 60% increase in the total biomass of pollock, according to a 2014 statement by the National Oceanic and Atmospheric Administration (NOAA).
Summary

The explosion of scientific evidence favoring fish oil supplementation for heart, brain, and overall health has, until recently, outpaced the availability of highly concentrated, highly purified oils from sustainable sources. This has left consumers with concerns about potential contaminants, freshness, and the long-term environmental impact of fish oil harvesting.

Novel manufacturing techniques coupled with sourcing fish only from certified sustainable fisheries in Alaska has now made it possible to choose clean, pure, fresh omega-3 oil for generations to come without fears for the environment.

For further information about the unique aspects of this newly available Alaskan-derived fish oil blend, see page 42.

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

References


The health benefits of eating cold-water fish are robust, yet concerns remain about contaminants found in wild and farm-raised fish. This should not stop consumers from including fish in their diet, as the longevity advantages of consuming cold-water fish instead of foods like beef are substantial.

A recent study found that even vegetarians that include some fish in their diet fare better than strict vegetarians.1

Eliminate Virtually All Fish-Derived Toxins

Consumers can exert significant control over their exposure to fish-borne toxins. High-quality fish oil is distilled to remove synthetic and natural contaminants that existed in the fish itself. Enhanced molecular distillation techniques utilize redundant processes to virtually eliminate detectable environmental toxins.

The other safety concern about fish oil is that its delicate omega-3 fats are highly vulnerable to rancidity. No one wants to ingest oxidized (rancid) oils.

A new fish oil blend derived from pristine waters off the coast of Alaska utilizes a multistep process to remain exceptionally fresh. The result is that this Alaskan-derived fish oil has a greater than 5-fold reduction in the upper level threshold measurement for oxidation.

Current oxidation standards for quality fish oils ensure products free from rancidity. The new Alaskan-derived fish oil specification advances this premium standard 5-fold better!

The chart below reveals the reduction in upper limit for oxidation of this new Alaskan fish oil blend over existing quality fish oils:

<table>
<thead>
<tr>
<th></th>
<th>Alaskan-Derived Specification</th>
<th>Current High-Quality Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTOX</strong> (total oxidation value)</td>
<td>Maximum: 5</td>
<td>Maximum: 26</td>
</tr>
<tr>
<td>(Lower means less oxidation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PEROXIDE LEVEL</strong> (Measure of current oxidation)</td>
<td>Max: 1.0 meq/kg</td>
<td>Max: 5.0 meq/kg</td>
</tr>
<tr>
<td><strong>ANISIDINE LEVEL</strong> (Measure of past oxidation and measure of aldehyde production during handling and storage)</td>
<td>Maximum: 5</td>
<td>Maximum: 20</td>
</tr>
</tbody>
</table>

Higher Percentages Of EPA And DHA

An advantage to higher EPA and DHA fish oil concentrations is smaller sized omega-3 capsules.

The addition of this new Alaskan-derived fish oil to the Super Omega-3 supplement group enables the same high-potency EPA/DHA to fit into slightly smaller capsules for easier swallowing.

International Fish Oil Association “Five-Star Rating”

The International Fish Oil Association (IFOS) is an independent organization that tests fish oils to determine their overall safety and quality. A Five-Star Rating indicates fish oils have been tested to meet very strict standards of quality as determined by EPA and DHA content, and for purity to rule out contamination with heavy metals, radiation, oxidation, and organic pollutants such as PCBs and dioxin.

The new Alaskan-derived fish oil enjoys the same Five-Star Rating mandated for all fish oils contained in the Super Omega-3 family of supplements.

Sustainable Fishing

The Marine Stewardship Council is an independent nonprofit organization that sets a standard for sustainable fishing so that fishing can continue indefinitely with minimal environmental impact.

The new Alaskan-derived fish oil is the first refined omega-3 concentrate available worldwide that carries the prestigious seafood sustainability certification from the Marine Stewardship Council.
Most Advanced Omega-3 Dietary Supplement

From supporting heart health and brain function to balancing the inflammatory response, there is no debating the broad-spectrum benefits of omega-3 fatty acids.2-4

There are hundreds of fish oil supplements on the market. Only one incorporates lifesaving findings to provide omega-3 and olive fruit extracts, along with sesame lignans, in a family of formulas called Super Omega-3.

Fish Oil + Olive Fruit Extract = Greater Efficacy!

Research findings indicate that a combination of fish oil and olive oil can support a healthy inflammatory response better than fish oil alone.2 Super Omega-3 incorporates the benefits of both fish oil and olive fruit extract into a single novel formula. A four softgel serving supplies the equivalent polyphenol content of 8 to 12 tablespoons of extra virgin olive oil.

Sesame Lignans Enhance Fish Oil Efficacy

Studies show that when sesame lignans are added to fish oil, there is a greater safeguard against oxidation along with the EPA/DHA fatty acids being directed toward pathways that help with inflammatory reactions.6

Benefits Of A Mediterranean Diet

The most popular Super Omega-3 formula provides the following potencies of Mediterranean health benefits in just four smaller softgel capsules:

Four softgels contain:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaskan Wild Fish Oil Concentrate</td>
<td>4,000 mg</td>
</tr>
<tr>
<td>Omega-3s</td>
<td>2,400 mg</td>
</tr>
<tr>
<td>EPA</td>
<td>1,400 mg</td>
</tr>
<tr>
<td>DHA</td>
<td>1,000 mg</td>
</tr>
<tr>
<td>Polyphen-Oil™ Olive extract (fruit and leaf)</td>
<td>600 mg</td>
</tr>
<tr>
<td>Sesame seed lignan extract</td>
<td>20 mg</td>
</tr>
</tbody>
</table>

Super Omega-3

Item #01982 • 120 softgels

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

Non-GMO

References

1. JAMA Intern Med. 2015;175(5):767-76.

Supportive but not conclusive research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease.

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.
**Bone Restore** combines numerous bone-boosting nutrients into one superior, easy-to-take formula.

Bone density loss is more than just a calcium deficiency—it also includes an insufficient intake of a host of other nutrients. In addition to 700 mg of calcium, Bone Restore includes highly absorbable forms of:

- Vitamin D3
- Magnesium
- Manganese
- Boron
- Zinc
- Silicon

These nutrients help aging adults achieve optimal calcium levels.

Bone Restore also contains vitamin K2, which has been shown to play a critical role in maintaining healthy bone density by facilitating the transport of calcium from the bloodstream into the bone.

Those taking Once-Daily Health Booster or Super K usually do not need additional vitamin K2. For these individuals, Bone Restore is available without vitamin K2. The retail price for this formula of 120 capsules is $22. If four bottles are purchased, the price is reduced to $14.25 per bottle. (Item# 01726)

**Note:** Those taking the anticoagulant drug Coumadin® (warfarin) should use BONE RESTORE without vitamin K2.

---

**Bone Restore with Vitamin K2**

Item #01727 • 120 capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</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>$16.50 each</td>
</tr>
</tbody>
</table>

Fruitex B® and OsteoBoron® are registered trademarks of VDF Futureceuticals, Inc. U.S. patent #5,967,049. DimaCal® and TRAACS® are registered trademarks of Albion Laboratories, Inc. Malate is covered by U.S. Patent 6,706,904 and patents pending.
Hundreds of published studies validate the neurological properties of the individual ingredients contained in Cognitex®. Scientists wondered what would happen if these cognitive-enhancing nutrients were combined into one formula. An open label study was performed to assess the effects of Cognitex® on the brain health of elderly human subjects.

Here is a summary from a study that was published in the Journal of Dietary Supplements in June 2011:

**Study design:** 26 elderly participants with memory complaints completed the study. Participants were given three capsules daily of Cognitex® for 12 weeks with assessments at two weeks and 12 weeks.

**Memory** at two weeks:
- Recall: +11.15 points vs. baseline—a **15%** improvement
- Recognition: +8.68 points vs. baseline—a **11%** improvement
- Spatial short-term memory: +19.85 points vs. baseline—a **42%** improvement

**Attention** (sustained and focused) at two weeks:
- Sustained attention: +9.46 points vs. baseline—a **12%** improvement
- Focused attention: +3.77 points vs. baseline—a **4%** improvement

**Visuospatial learning** at two weeks:
- +17.31 points vs. baseline—a **33%** improvement

**Activities of daily living** (executive functions and mental flexibility) scores at two weeks:
- Executive functions: +9.45 points vs. baseline—a **14%** improvement
- Mental flexibility: +9.92 points vs. baseline—a **15%** improvement

After **10 additional weeks** of Cognitex® supplementation, further statistically significant improvements in **activities of daily living** (executive functions and mental flexibility) were observed:
- Executive function: +9.15 points vs. two-week scores—a **12%** improvement
- Mental flexibility: +9.73 points vs. two-week scores—a **13%** improvement

Cognitex® is designed to improve cerebral performance and protect against neurological problems over the long term. This study evaluated the effects of Cognitex® on boosting brain function over a short-term period.

Sharp-PS® is a registered trademark of Enzymotec Ltd. Leucoselect® is a registered trademark of Indena S.p.A. Proprietary NeuroProtection Complex Blend is protected under US Patents Nos. 6,153,198 and 6,713,092 and is a registered trademark of Natreon, Inc.
Some ultra-wealthy individuals are financially supporting projects that seek to discover ways to slow and reverse aging.

Additionally, there are a few governments in a financial position to fund anti-aging research, as are some well-capitalized and philanthropic organizations around the globe.

The financing of *age-reversal* research by a handful of forward-thinking billionaires is a recent phenomenon. It could help unlock crucial longevity technology that will benefit all of humanity.
Only $3 Billion Needed To Find A Way To Slow Aging!

Out of its total annual budget—about $31 billion—the National Institutes of Health (NIH) allocates a mere 3.7% for the government agency charged with studying aging, the National Institute on Aging (NIA).10

Out of that 3.7%, the NIA spends 71%—just $819 million—on research project grants.11 And these research projects typically do not focus on life span-extension research.11

Shouldn’t the goal of the NIA be slowing down aging itself?12

Here’s what is the most frustrating: The total research cost of finding a way to slow the basic process of biological aging has been estimated to be a mere $3 billion—about 3% of the annual Medicare budget.13

Obviously, delaying the aging process would exponentially pay for itself in reduced health care costs!13

Most Billionaire Charities Ignore Aging Research

Funding a relatively small annual investment of $3 billion to defeat aging—even if required for only a few years—seems daunting without government interest. Hope turns to wealthy individuals who may recognize the benefit for all humans and step forward with research dollars. But is that happening?

There is a vast outpouring of philanthropy from the ultra-rich, many of whom have pledged to pass all of their fortunes to charitable foundations after their death. However, the favored charities seldom include longevity research.

Some billionaires donate half their wealth to various causes that most frequently have little to do with aging research.14 Bill and Melinda Gates have asked the world’s billionaires to sign the Giving Pledge, a commitment to donate at least 50% of their fortunes to charities. Signatories include filmmaker George Lucas, hotel mogul Barron Hilton, and oil tycoon T. Boone Pickens, among many others.14

But very little of this money is likely to fund anti-aging studies.

When large donations do go to health research, they’re generally earmarked for a single disease or a single hospital. However, it’s critically important to understand the comparative benefits of curing all diseases versus the much greater benefits of anti-aging research. By meaningfully reversing pathological aging processes, it will be possible to virtually eradicate all degenerative diseases.

Rare Visionaries

Forty years ago, Paul Allen and Bill Gates co-founded Microsoft.2 Today, Allen’s net worth is $17.5 billion,3,4 and Gates’ worth is $79.2 billion5—the world’s highest.

Allen donated $100 million to establish the Allen Institute for Cell Science, which models the complex mechanisms of living cells.6 Predictive models of the cell could accelerate the development of treatments for age-related diseases, and, conceivably, for aging itself. Allen is not the only billionaire whose donations might—at least indirectly—affect life span. But such philanthropists are extremely rare.

Gates, by contrast, donated a stunning $28 billion—280 times as much—to a foundation that he and his wife control.7 However, this wealthiest of all of the world’s charitable foundations, with assets exceeding $42.3 billion,8 donates almost nothing to initiatives aimed at slowing the fundamental aging process.

Even Allen’s $100 million donation to cell science is dwarfed by his 20-times-larger charitable donations of $2 billion to promote initiatives other than those directly related to slowing biological aging.9

Visionary billionaires such as Allen who donate to aging-related research—despite their much greater philanthropy in other areas—are still very much bucking the norm.

However—rare or not—these donations help offset a virtual absence of government spending in this area.

© MILES HARRIS
Why Slowing Aging Is More Important Than Disease-Specific Research

A complete cure for all cancers would increase overall human life expectancy by about three years.15

By contrast, an October 2013 study estimated that even very modest, early gains in slowing biological aging would have tremendous impact. Mild age-retarding advances could decrease the incidence of diseases associated with aging by so much that a 51-year-old individual would gain over double the number of healthy years compared to even the most optimistic advances against a whole range of individual disorders, such as cancer or heart disease.16

This study found that investing in delaying aging would increase the number of healthy adults over age 65 by more than 11 million by 2060—while investing in cures for the various diseases of aging would have an effect barely better than doing nothing at all!16

Here’s where we stand. Donations towards specific diseases will only have a minor effect on our future life span—or even health span. A mere $3 billion annually is needed to discover how to slow biological aging. And there are 1,826 billionaires worldwide; the vast majority of whom make huge charitable donations. But the tragic truth? You can count on your fingers the world’s billionaires who recognize the value to the health of all mankind of funding anti-aging research.

The Few Billionaires Who “Get It”

Peter Thiel: PayPal cofounder Peter Thiel17 funneled several million dollars into longevity research.18 His donations are targeted towards funding an organization poised to make the very most of it, such as the dynamic SENS Research Foundation.17,20

Pioneer biomedical gerontologist Aubrey de Grey—a Life Extension® Scientific Advisory Board member—serves as Chief Science Officer for SENS, which stands for Strategies for Engineered Negligible Senescence.19 SENS research focuses on proposed techniques to rejuvenate the human body—with the ambitious, long-range goal of reversing biological aging.

Thiel explained his SENS donation this way: “I believe that [de Grey’s] revolutionary approach to aging research will accelerate [longevity], allowing many people alive today to enjoy radically longer and healthier lives.”20

Thiel believes the FDA is too restrictive, pharmaceutical companies are ridiculously bureaucratic, and only “a tiny fraction of a fraction of a fraction of National Institutes of Health (NIH) spending” goes to genuine anti-aging research.21 Even then, NIH grant-making decisions are consensus-oriented, committee-approved, and highly conservative in bias.

“If it’s natural for your teeth to start falling out, then you shouldn’t get cavities replaced,” he asks. “In the 19th century, people made the argument that it was natural for childbirth to be painful for women and therefore you shouldn’t have pain medication.”18

“I think the nature argument tends to go very wrong. I think it is against human nature not to fight death.”18

What You Need To Know

A Few Billionaires Fund Research Into Slowing Aging

- Most of the government’s huge health budget doesn’t include investigations into ways to slow aging.
- Of the 1,826 billionaires with numerous charitable foundations, only a few have stepped forward to fund anti-aging investigations.
- In this article, we look at a handful of billionaires whose clear thinking and funding may yet unlock ways to inhibit aging, add healthy years to life—or at least, encourage new longevity funding.
At the Exponential Finance conference held in early June 2015, Ray Kurzweil predicted this kind of brain backup (uploading) into computers will occur around year 2042. Kurzweil’s track record for predicting future technological advances is over 80%, which is one reason he now works full-time at Google. He elaborated on his vision for how this will unfold.

“In the mid-2030s, we will extend our neocortex (the part of the brain where we do our thinking) into the cloud, the same way your phone can multiply its capabilities 1,000-fold today by communicating wirelessly to the cloud. Thus our thinking will become a hybrid of biological and nonbiological thinking. In accordance with Kurzweil’s Law of Accelerating Returns, the nonbiological part (in the cloud) will grow exponentially. So by the 2040s, it will be smart enough to completely model and simulate the biological portion. Thus we will be able to fully back ourselves up.”

J. Craig Venter: J. Craig Venter is a billionaire scientist who has raised $70 million by selling shares to launch his latest project. Human Longevity Inc. (HLI) is an ambitious commercial venture to amass and electronically analyze the medical, genomic, microbiomic, and metabolic data of 40,000 individuals every year—eventually, 100,000 individuals a year—taken from people who are healthy and sick, infants to

Dmitry Itskov: The research project planned by Russian media mogul Dmitry Itskov is quite forward-looking. It smacks of science fiction. Itskov scoffs at the often-published claim that he’s a billionaire and this project is not properly a charity: He plans one day to turn a profit for future investors.

Serving more as an organizer, Itskov hopes to interest other billionaires in the 2045 Initiative—named for the target completion date—that will investigate the possibility of transferring the entire content of an individual’s brain into a low-cost synthetic brain. He has invested $3 million in expenses so far.

As ambitious as it sounds, Itskov envisions a digital copy of your mind held within a nonbiological carrier—mass produced, then uploaded with your consciousness and personality. The avatar head would even mimic your normal facial expressions.

So forget slowing your body’s aging process: Itskov hopes to replace the human body with a completely artificial one. Occasionally, he’ll even mention the term “immortality.”

Itskov hopes to attract an international collaboration of scientists. He maintains that avatars would not only end world hunger—machines need maintenance but not food—but would also usher in a peaceful era without the petty anxieties of day-to-day living that result from having a brief life span.

First, he has to convince skeptical wealthy investors that this is feasible and that—since the plan is for the investors themselves to become the first artificial humans—that it’s also desirable.
Sergey Brin: Google co-founder Sergey Brin has a genetic mutation that sharply raises his risk for Parkinson’s. He believes that bringing together people with similar gene mutations can help scientists to understand numerous age-related diseases—including Parkinson’s. In hopes of revealing these genetic underpinnings, Brin, worth $28.9 billion, has donated nearly $125 million to the Michael J. Fox Foundation and $7 million to the Parkinson’s Institute.

One project is being conducted by 23andMe, co-founded by Brin’s separated wife, Anne Wojcicki. The firm scans the DNA submitted by its customers and provides information on their genetic diversity, ancestry, and other traits. Brin hopes to use this service—and its growing DNA database—to conduct medical research. The company will recruit 10,000

Slowing Biological Aging Vs. Curing All Diseases: A Truly Remarkable Study

An eye-popping study—published in the October 2013 issue of Health Affairs by top scientists at USC, Harvard, Columbia, the University of Illinois at Chicago, and other institutions—found that investing in delaying aging would have a much greater impact on life expectancy than investing in diseases of aging directly.

On the heels of Google’s announcement that the company’s new enterprise, Calico, will research aging, this new study shows that even modestly slowing the aging process would mean an additional 5% of adults 65 and over would be healthy, rather than disabled, every year from 2030 to 2060. By contrast, research on fatal diseases would generate almost no increase in the overall number of healthy older adults.

In other words, an investment in delayed aging would increase the number of healthy adults 65 and over by 11.3 million in 2060. But investing in fatal diseases of aging would not.

In the last half-century, life span increases have been driven by finding ways to reduce mortality from fatal diseases. But now, disabled life expectancy is rising faster than total life expectancy, decreasing the number of years one can expect to live in good health.

The study shows that if we can age more slowly, we can delay the onset and progression of many fatal and disabling diseases simultaneously.

The scientists found significantly lower and declining returns for continuing the current “disease model” of research that seeks to treat fatal diseases independently—rather than tackling the shared, underlying cause of fatal and disabled diseases: aging itself.

About the same number of older adults would be alive but disabled in 2060 whether we do nothing or continue to combat cancer and heart disease individually.

The team concluded that over the next 15 to 20 years, major breakthroughs in cancer or heart disease would result in a 51-year-old person expecting to live only about one more year. But a slight delaying of the aging process would provide 2.2 additional years, most of which would be spent in good health.

The increase in healthy years of life from an investment in slowing aging would generate an economic benefit of about $7.1 trillion over the next 50 years—without factoring in the effects of improved cognitive benefits for older adults from delayed aging. There would also be less per-person spending on medical costs. These economic benefits are too great to ignore, suggested the researchers.

“Shifting the focus of medical investment to delayed aging instead of targeting diseases individually would lead to significant gains in physical health and social engagement,” said the lead study author, Dana Goldman of USC.

“We need to begin the research now,” said S. Jay Olshansky of the University of Illinois-Chicago, another member of the research team. “We don’t know which mechanisms are going to work to actually delay aging, and there are probably a variety of ways this could be accomplished, but we need to decide now that this is worth pursuing.”

Centenarians. The company will also sequence their microbiomes—the microbes living on and in them. Sequencing the genomes of so many diverse people is expected to tease out anti-aging insights by identifying biological patterns. Then, Venter hopes to harness stem cells as the regenerative engine of the body. The initial focus will be on cancer, but anticancer patterns might reveal ways to block the complex interactions that trigger other age-related diseases—and theoretically, even aging. Venter’s researchers were the first to recreate, with bottled chemicals, the entire genetic code of one species of bacterium and transplant that manmade genome into the housing of a closely related species of bacterium. Expressed differently, Venter’s team created what could be called the very first synthetic living creature.
For example, what underlies aging? Might there be a direct link between certain diseases and the aging process?"\textsuperscript{28,29}

Since then, Calico has entered into a joint venture\textsuperscript{30} with the pharmaceutical company AbbVie to build a new research facility to investigate age-related diseases, including neurodegeneration.\textsuperscript{31,32}

Longevity research might now benefit greatly from the typical Silicon Valley worldview that everything—even death—is solvable if you reduce it to data and then, throw enough processing power at it.

Medicine is already on its way to becoming an information science: Researchers can now harvest and mine massive patient data sets. And Google is very good with large data sets.

Google won’t divulge how much money was invested in Calico but hinted it could be tens of millions.

Ideally, inspired by Google, more billionaires might realize that the most charitable thing they can do—for others, if not themselves—is to fund anti-aging research.

Johnson & Johnson: This corporate giant has made a significant step forward in the frantic search to find a way to block Alzheimer’s disease and brain aging. Alkahest, a member of its recently launched biotech incubator, aims to translate a recent breakthrough in treating neurodegeneration in mice with a workable therapy for aging humans. This research—just given a huge boost with the signing of a $50 million investment deal with the Spanish plasma derivatives giant Grifols—will be based on the discovery that different factors in Parkinson’s patients. By comparing—at 600,000 locations across the genome—these patients’ DNA with the DNA of healthy controls, Brin hopes researchers will find genetic variations, beyond those already known, that are linked to the disease.\textsuperscript{42,43}

More relevant to fighting aging, Brin, Wojcicki, Facebook’s Mark Zuckerberg, and Zuckerberg’s wife Priscilla Chan, joined with others to create Breakthrough Prizes, which provides funding for scientists who make discoveries that extend human life. Although these are relatively modest $3 million payouts, they are given to six scientists each year.\textsuperscript{44}

David Koch: While not donating to anti-aging research specifically, David Koch has donated a vast fortune—over $400 million to date\textsuperscript{45} and $150 million over the coming years\textsuperscript{46}—to numerous institutions involved in cancer research and therapy. From his $43 billion net worth,\textsuperscript{47} his biggest donations go towards “moon shot” campaigns to find a cancer cure. Koch also donated over $150 million to the arts and education.\textsuperscript{48,49}

Google Co-Founders: With its mysterious September 2013 announcement of a new biotechnology company named Calico, Google has ventured into territory far removed from Internet search.

The search, email, and tech company is being highly secretive, revealing only that this venture will focus “in particular on the challenge of aging and associated diseases.”\textsuperscript{25} But the biggest clue came from Calico CEO, Dr. Arthur Levinson, PhD,\textsuperscript{26,27} who said that when he was asked to head Calico, “I was deeply intrigued.
blood plasma, known as chemokines, can promote or inhibit brain decline. Furthering this work, Stanford scientist Dr. Tony Wyss-Coray was able to reinvigorate the brains of aging mice by injecting the blood of young mice. Part of Grifols’s $50 million investment includes $12 million for the rights to commercialize early-stage developments in the fight against neurodegeneration—a gamble that could eventually change the landscape in treating brain decline.

**Others**

**Pierre Omidyar**, founder of eBay, is worth $8.2 billion. He and his wife Pam Omidyar have donated millions to research on “resiliency,” the collective traits that help some individuals bounce back from illness or adversity—but not on aging itself. To put these millions into perspective, the couple has committed over $1 billion to “social causes.”

Worth over $3 billion, **David Murdoch** donated $35 million in 2007 to collect health and personal information annually from 11,200 participants—the goal is 50,000—who also provide one-time urine and blood samples. Researchers hope to find new markers for illnesses such as Alzheimer’s that will allow them to better classify diseases. Aging, however, is not part of the focus.

**Peter Nygard** is a near billionaire—worth about $900 million—who claims to have had an innovative stem cell procedure performed on his own body. The procedure, known as somatic cell nuclear transfer (SCNT) is in its pioneering phase and essentially cultivates new stem cells from an individual’s old stem cells. Aged stem cells are harvested from the body and implanted into hollowed-out human eggs, where they multiply. The new and youthful cells, known as autologous stem cells, would then be injected into the original donor. The goal of SCNT is to help cure disease and slow aging while getting around the problem of body rejection of foreign or non-self stem cells. Nygard states that he has had more stem cells injected than anyone else—but hopes are that his volunteering as a guinea pig may move this research ahead more quickly. While there are still legal, financial, and political hurdles to jump, he plans to invest $100 million to build a world-class medical facility in the Bahamas where this novel technology will be further developed—and where, for what is expected to be a “healthy” price, he hopes it will one day be offered to medical tourists. Nygard has been instrumental in helping write and pass stem cell legislation in the Bahamas to accommodate his vision. His company, Nygard Biotech, is planning research facilities and clinics in several countries beyond the Bahamas including, India, Thailand, and Macao.

The **Buck Institute for Research on Aging** is the only free-standing institute dedicated to age-related research, and it has recently been tapped by Google’s new venture Calico to provide physical research facilities. The institute has been studying ways to inhibit the earliest origins of age-related diseases such as Parkinson’s and Alzheimer’s disease and has already patented a number of basic findings and technologies. For instance, Buck scientists have been investigating the ability of the dyes normally used in imaging scans to highlight amyloid aggregates in postmortem brain tissue of Alzheimer’s patients because these same dyes have been shown to help break up these aggregates. Will the institute achieve significant anti-aging breakthroughs? Director Brian Kennedy is optimistic: “We’re now at the point where it’s easy to extend the life span of a mouse. That’s not the question any more—it’s can we do this in humans? And I don’t see any reason why we can’t.” But as a private institute, the Buck Institute is seeking donations from the public—and billionaire support is desperately needed.

**Summary**

Despite a massive health and research budget, government funding is largely withheld from research into slowing biological aging.

Out of the world’s 1,826 billionaires, who control $7.05 trillion and fund innumerable charities, a scant few are funding projects to meaningfully delay or reverse aging.

This is starting to change, however. As far-thinking billionaires start to provide funding aimed at increasing healthy longevity, this will likely encourage other wealthy individuals to prioritize this type of research that benefits all of humanity, as the **Life Extension Foundation** has for the past 35 years.

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

References

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

Prestigious scientific journals have highlighted gamma tocopherol as one of the most critically important forms of tocopherols, which includes d-alpha tocopherol (natural vitamin E) for those seeking optimal health benefits.

Most commercial vitamin E supplements contain little, if any, gamma tocopherol. They instead rely on alpha tocopherol as the primary ingredient. However, it is gamma tocopherol (not the alpha form) that quenches peroxynitrite, the free radical that plays a major role in the development of age-related decline.²³

**SESAME LIGNANS: THE NATURAL VITAMIN E BOOSTER**

Life Extension® has uncovered research suggesting that adding sesame lignans to gamma tocopherol may significantly enhance its beneficial effects. Sesame and its lignans have been shown to protect against oxidation and help maintain already-normal blood pressure.⁴

In a human study that combined gamma tocopherol with sesame lignans, gamma tocopherol/sesame was 25% more effective than gamma tocopherol/tocotrienols in suppressing tissue measurements for free-radical and inflammatory damage.⁴⁵

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

**WORLD’S MOST COMPREHENSIVE VITAMIN E FORMULA!**

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

### Each softgel of Gamma E Tocopherol with Sesame Lignans provides:

- **Vitamin E** (as D-alpha tocopherol) 45 IU
- **Gamma E mixed tocopherols** 359 mg
- **Sesame seed lignan extract** 20 mg

Contains soybeans.

---

References

* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Aging is Characterized by Inflammation, Glycation, and Mitochondrial Decay

The loss of cellular vitality is caused by a number of factors, including mitochondrial problems, glycation, and free radical reactions. Life Extension® formulators created MITOCHONDRIAL ENERGY OPTIMIZER WITH BioPQQ® that helps protect delicate cellular structures and enables cells to perform life-sustaining metabolic processes.

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

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

- **PQQ**: This breakthrough micronutrient has been shown to trigger the growth of new mitochondria in aging cells.9 PQQ also activates genes involved in protecting the delicate structures within the mitochondria.7-10

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

- **BENFOTIAMINE**: Human mortality studies indicate that ideal fasting glucose levels are between 74-85 mg/dL yet many aging people have fasting glucose above 90 mg/dL, which is less than optimal.16-19 Benfotiamine protects endothelial cell integrity and promotes already healthy glucose levels. In addition, benfotiamine supports DNA function.20

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

- **R-LIPOIC ACID**: Destructive free radical activity in the mitochondria plays a major role in the loss of cellular vitality. A microencapsulated Bio-Enhanced® R-lipoic acid facilitates youthful mitochondrial energy output while guarding against free radicals.25-28

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

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

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carnosine</td>
<td>1000 mg</td>
</tr>
<tr>
<td>Arginocarn® Acetyl-L-carnitine arginate DiHCI</td>
<td>675 mg</td>
</tr>
<tr>
<td>R-Lipoic acid (as microencapsulated Bio-Enhanced®)</td>
<td>150 mg</td>
</tr>
<tr>
<td>Benfotiamine</td>
<td>150 mg</td>
</tr>
<tr>
<td>Vitamin B6 (as pyridoxal 5’-phosphate)</td>
<td>100 mg</td>
</tr>
<tr>
<td>BioPQQ® Pyrroloquinoline quinone disodium salt</td>
<td>10 mg</td>
</tr>
<tr>
<td>Luteolin</td>
<td>8 mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>230 mg</td>
</tr>
<tr>
<td>Sodium</td>
<td>25 mg</td>
</tr>
</tbody>
</table>

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

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Folate helps maintain homocysteine levels within the normal range, thereby promoting cardiovascular health. Folate also supports neurotransmitter synthesis—which in turn helps maintain cognitive abilities.

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

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

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

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

References

To order either of these Optimized Folate formulas, 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.
The bacteria *Helicobacter pylori* found in the stomach may lead to gastritis, ulcers, and stomach cancer.
The discovery that *H. pylori* infection leads to serious stomach problems enabled two scientists to win the Nobel prize for their breakthrough research.¹⁻³

Perhaps even more meaningful, it was found that eradication of *H. pylori* can relieve symptoms of stomach distress, including gastritis, and prevent cancer.⁴

The ulcer-inducing bacteria *H. pylori* is now believed to affect up to 40% of Americans.⁵

The good news is that Japanese researchers developed a unique nutrient combination of zinc and carnosine to effectively counter the destructive impact of *H. pylori*. Sold as a prescription drug in Japan, this combination is available in the United States as a supplement. Scientists have now gone a step further and enhanced the Japanese formula by adding natural cranberry, licorice extract, and picrorhiza to provide synergistic support for stomach health, without the adverse side effects associated with over-the-counter and prescription stomach aids.

In this article, you will learn how this combination of novel agents protects stomach tissue from acids, the damaging effect of anti-inflammatory drugs, and helps inhibit inflammation and *H. pylori*. 
Once *H. pylori* takes hold in the stomach lining, it relies on its elaborate defense mechanisms that allow it to survive the potent acids.\(^{14}\)

The bacteria produces an influx of inflammatory cells by secreting powerful “virulence factors.”\(^{12}\) In a microscopic one-two punch,\(^{15}\) these bacterial proteins block normal function of free-radical scavengers, while boosting free-radical production from immune cells.\(^{16,17}\) *H. pylori* extends its damaging effects by stimulating yet another group of immune cells to produce inflammatory cytokines—the messengers that call new inflammatory cells into the region.\(^{12}\)

Antibiotic treatment can be effective against *H. pylori*. But there is powerful evidence for the role of two nutrients in alleviating the misery caused by this bacterium.\(^{18,19}\)

**Zinc-Carnosine**

**Zinc** supplementation has been repeatedly shown to provide potent gastroprotective effects\(^{20,21}\) and to improve the response to therapy of certain cancers.\(^{22}\)

Another nutrient called **carnosine** can boost these effects even further.

Japanese researchers have led the way in developing a unique **zinc-carnosine** compound, sold as a prescription anti-ulcer drug in Japan.\(^{23,24}\) This simple nutrient compound—comprising zinc and carnosine linked by a chemical bond—is available in the United States as a nonprescription dietary supplement that is safe for long-term use.\(^{22,23}\)

Researchers found that this zinc-carnosine combination adheres to the stomach wall much more tightly than either zinc or carnosine alone—allowing beneficial effects of both components to be delivered directly to the site where protection is most needed.\(^{25}\)

Some of the mechanisms behind zinc-carnosine’s protective effects against ulcers were found to be its free-radical-neutralizing effects\(^{26,27}\) and its capacity...
to boost production of a growth factor that may be important for gastric wound repair.\textsuperscript{28,29} Zinc-carnosine was also found to prevent the fragmentation of DNA in stomach-lining cells that can cause them to become cancerous.\textsuperscript{30} Animal and laboratory studies showed that zinc-carnosine stabilizes the membranes of inflammatory cells, preventing them from releasing cytokines and enzymes that can cause the stomach to begin digesting itself.\textsuperscript{31,32}

Additionally, this nutrient combination was shown to inhibit stomach inflammation and cytokine release caused by \textit{H. pylori} infection\textsuperscript{33} and to speed eradication of the infection itself\textsuperscript{34}—providing a nutritional way to break the infection-inflammation-cancer chain.

Numerous studies showed that in animals given even single doses of zinc-carnosine, ulcers caused by stress, ischemia (poor blood flow), alcohol, and other toxins were either prevented or rapidly healed.\textsuperscript{35-40}

A scientific team tested the effects of zinc-carnosine on rats with gastric cells damaged by stress or \textit{indomethacin}, a potent NSAID (nonsteroidal anti-inflammatory drug). The nutrient combination reduced rat stomach injury by \textit{75\%} and mice small-intestine injury by \textit{50\%}. It also stimulated migration and proliferation of cells at and near the injury sites by almost \textit{3-fold}.\textsuperscript{41}

A 2009 preclinical study found that a zinc-carnosine combination induces heme oxygenase-1 (HO-1)—an enzyme involved with protection against inflammation and oxidative stress\textsuperscript{42,43}—in the stomach mucosa and safely provides mucosal protective effects.\textsuperscript{44}

A 2013 preclinical study published in \textit{Life Sciences} concluded that a zinc-carnosine combination protects against gastric mucosa damage—not only by reducing inflammatory cytokines and increasing expression of free-radical-quelling enzymes and growth factors—but also through the cytoprotective effects of increasing the level of heat shock proteins (HSP).\textsuperscript{45}

In a clinical trial, 10 healthy volunteers took \textit{50 mg} of \textit{indomethacin} three times daily with either a placebo or zinc-carnosine. Indomethacin increased gut permeability—impaired barrier function of the gut’s lining that allows inflammation to get its start—by a factor of \textit{three} in the placebo group. But in the zinc-carnosine supplemented group, there was \textit{no} significant increase in permeability. The researchers concluded that zinc-carnosine stabilized the cells of the mucosal lining of the stomach and small intestine, suggesting potent gastroprotective effects.\textsuperscript{41}

\textbf{What You Need To Know}

\textbf{Natural Stomach Protection}

\begin{itemize}
  \item The short-term consequence of a lifestyle of alcohol, medications, fast food, and chronic stress is often gastric distress—but the long-term consequence is serious damage to delicate stomach tissue.
  \item Further magnifying these threats is the unrelenting spread of the ulcer-inducing agent \textit{H. pylori}, now believed to affect up to 40 percent of Americans.
  \item Zinc-carnosine, cranberry, licorice extract, and picrorhiza—provide safe, effective, synergistic support for stomach health, without the high cost and adverse side effects associated with over-the-counter and prescription stomach aids.
  \item Together, these nutrients powerfully protect stomach tissue from acids—in turn helping to prevent cancer—and inhibit free-radical damage and inflammation, stimulate immunity, fight \textit{H. pylori} infection, and speed healing.
\end{itemize}
Licorice

Licorice extracts provide anti-inflammatory activities, reduce cytokine production, and boost production of stomach mucus.53-55

These extracts were shown to be as effective as the NSAID diclofenac (Voltaren®) in reducing inflammation,56 and human and animal studies demonstrated that deglycyrrhizinated licorice can reduce aspirin-induced damage to the stomach lining57 and promote healing of duodenal ulcers.58

Researchers enrolled 100 patients with endoscopically confirmed gastric ulcers and gave them either a leading antacid medication or a deglycyrrhizinated licorice extract medication called Caved-(S). At 12 weeks, 91% of patients were healed, as proven by endoscopic examination, with no significant difference between the drug and the licorice compound59—and there were still no differences even when long-term effects were examined in a follow-up study several years later.60

Without eradication of H. pylori infection, peptic ulcer disease has a 50 to 80% recurrence rate within six to 12 months after initial healing. A double-blind trial on 60 patients with peptic ulcer disease demonstrated that licorice is as effective as bismuth at eradicating H. pylori—prompting researchers to suggest licorice as a safe alternative for patients for whom bismuth may be contraindicated.61

Cranberries

Mounting evidence indicates that cranberries and their potent compounds inhibit H. pylori—a dangerous link in the infection-inflammation-cancer chain.46-48

In research reported in the journal Helicobacter, about two cups of cranberry juice or a placebo were given to 189 adults with H. pylori infection per day. After 35 and 90 days of treatment, more than 14% of the cranberry group—but just 5% of the placebo group—showed test results that suggested complete eradication of the H. pylori organism.49

A double-blind, randomized, clinical study was carried out in which 177 patients with H. pylori infection were asked to take 250 mL of either cranberry juice or placebo drink twice daily for three weeks. During the first week only, all participants also took a triple-therapy drug treatment for this infection consisting of two antibiotics (amoxicillin and clarithromycin) and one proton-pump inhibitor (omeprazole). H. pylori was eradicated in more than 95% of the female subjects who took the cranberry juice, compared with only 80 to 86% of the non-supplemented patients. The H. pylori eradication rates were also lower in male subjects supplemented with the juice, but sampling was not large enough for statistical significance.50

A systematic review concluded that regular intake of cranberry juice and other dietary products “might constitute a low-cost, large-scale alternative solution applicable for populations at risk for H. pylori colonization.”51

A later review found that the array of potent compounds in cranberries—anthocyanins, flavonols, flavan-3-ols, proanthocyanidins, and phenolic acid derivatives—“appears to be responsible for the cranberry property of preventing many diseases and infections, including cardiovascular diseases, various cancers, and infections involving the urinary tract, dental health, and Helicobacter pylori-induced stomach ulcers and cancers.”52

Picrorhiza

Extracts of a perennial herb called picrorhiza (Picrorhiza kurroa), well-known in Ayurvedic medicine,62 have been found to have potent free-radical-quenching, immune-stimulating,67-70 and anti-inflammatory71-74 properties—activities central to gastric protection.
Scientists administered this extract to rats with ulcers induced by the potent NSAID indomethacin. Compared with the untreated group, picrorhiza-supplemented rats had much faster rates of ulcer healing, accompanied by a profound drop in levels of oxidized tissue components. And while free-radical-quenching enzyme activity decreased in the untreated animals, it was, in fact, boosted in treated rodents.\textsuperscript{75}

In a study on mice with acute stomach ulceration induced by indomethacin, the healing capacity of picrorhiza was tested. After three days, biochemical analysis of stomach tissues showed that ulcer indices were reduced by \textbf{45\%} in the picrorhiza subjects, compared to the untreated mice.\textsuperscript{76}

Together, zinc-carnosine, cranberry, deglycyrrhizinated licorice, and picrorhiza provide a multi-armed approach to gastric protection, improved stomach health, and cancer prevention.

\textbf{Summary}

Prescription drugs, fast food, alcohol, and chronic stress can lead quickly to gastric distress—and in the long term, can seriously damage delicate stomach tissue.

\textbf{Side Effects of Common Anti-Acid Drugs}

Over-the-counter antacids can be very effective against acid damage. However, they do come with many potentially serious side effects—especially with prolonged use. As an alternative, zinc-carnosine, cranberry, licorice extract, and picrorhiza are natural agents that powerfully protect stomach tissue from acids without notable side effects, even with long-term use. Please note that individuals with esophageal reflux often need to reduce stomach acid and block stomach contents from reaching the delicate tissues of the esophagus. Some of these individuals will require at least temporary use of some of the following drugs:

<table>
<thead>
<tr>
<th>Class Of Acid-Blocker</th>
<th>Drug Name</th>
<th>Long-Term Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum-Containing Antacids</td>
<td>Maalox\textsuperscript{®}</td>
<td>Bone-softening\textsuperscript{77,78}</td>
</tr>
<tr>
<td></td>
<td>Mylanta\textsuperscript{®}</td>
<td></td>
</tr>
<tr>
<td>H2 Blockers</td>
<td>Cimetidine</td>
<td>Vitamin B12 deficiency\textsuperscript{79,80}</td>
</tr>
<tr>
<td></td>
<td>Ranitidine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Famotidine</td>
<td></td>
</tr>
<tr>
<td>Proton-Pump Inhibitors</td>
<td>Omeprazole</td>
<td>Vitamin B12 deficiency\textsuperscript{80,81}</td>
</tr>
<tr>
<td></td>
<td>Esomeprazole</td>
<td>Reduced medication bioavailability\textsuperscript{82}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. difficile-associated diarrhea\textsuperscript{82}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pneumonia\textsuperscript{81,82}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Osteoporosis and vertebral and hip fracture\textsuperscript{81-83}</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rebound acid over-secretion\textsuperscript{83}</td>
</tr>
</tbody>
</table>
References


B-vitamins are water soluble and easily eliminated from the body. Stress, certain medications, and alcoholic beverages can quickly deplete the body’s B-vitamin reserves. Therefore, daily replenishment of the B-vitamins is essential.

Many B-vitamins function as coenzymes to help release energy from carbohydrates, fat, and protein. A deficiency of one B-vitamin can affect optimal functioning of organ systems throughout the body.

What distinguishes Complete B-Complex is that it provides enzymatically active forms of critical nutrients like the pyridoxal-5'-phosphate form of vitamin B6, a natural form of folate from lemon peel, and nutritionally balanced potencies of each B-vitamin.

A daily dose of two vegetarian capsules of Complete B-Complex provides:

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiamine (B1)</td>
<td>100 mg</td>
</tr>
<tr>
<td>Riboflavin (B2)</td>
<td>75 mg</td>
</tr>
<tr>
<td>(as riboflavin and riboflavin 5'-phosphate)</td>
<td></td>
</tr>
<tr>
<td>Niacin</td>
<td>100 mg</td>
</tr>
<tr>
<td>(as niacinamide and niacin)</td>
<td></td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>100 mg</td>
</tr>
<tr>
<td>(as pyridoxine HCl and pyridoxal 5'-phosphate)</td>
<td></td>
</tr>
<tr>
<td>Folate</td>
<td>400 mcg</td>
</tr>
<tr>
<td>(from lemon extract (peel))</td>
<td></td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>300 mcg</td>
</tr>
<tr>
<td>(as methylcobalamin)</td>
<td></td>
</tr>
<tr>
<td>Biotin</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Pantothenic acid</td>
<td>500 mg</td>
</tr>
<tr>
<td>(as D-calcium pantothenate)</td>
<td></td>
</tr>
<tr>
<td>Inositol</td>
<td>100 mg</td>
</tr>
<tr>
<td>PABA (para-aminobenzoic acid)</td>
<td>50 mg</td>
</tr>
<tr>
<td>Calcium</td>
<td>40 mg</td>
</tr>
<tr>
<td>(as D-calcium pantothenate)</td>
<td></td>
</tr>
</tbody>
</table>

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

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

**CarnoSoothe with PicroProtect™**

Millions of Americans suffer stomach discomfort caused by erosion of the protective mucosal lining. **CarnoSoothe with PicroProtect™** provides numerous nutrient compounds shown to maintain a healthy gastric lining.

A recommended daily dose of two **CarnoSoothe with PicroProtect™** vegetarian capsules supplies:

- **100 mg** of standardized **PicroProtect™ Picrorhiza kurroa**, a traditional plant extract from the Himalayan Mountains that helps circumvent the underlying causes of gastric lining damage and supports a healthy stomach wall.¹

- **50 mg** of **zinc L-carnosine**, a chelated compound of zinc and carnosine that works synergistically to support delicate stomach tissue.² In human trials, 70% of patients using chelated zinc-carnosine reported relief of stomach discomfort and 65% showed visible evidence of rejuvenation in gastro-intestinal imaging tests.³

- **500 mg** of standardized deglycyrrhizinated licorice extract, which inhibits pro-inflammatory molecules, stimulates the formation of prostaglandins that support healthy stomach tissue, and contains flavonoid compounds.⁴⁻⁷

- **750 mg** of **NutriCran™**, a patented blend of cranberry, blueberry, and grape seed extracts rich in proanthocyanidins.⁸⁻⁹

**Caution:**
Licorice should not be taken by women who have had breast cancer.

NutriCran™ is a registered trademark of Decas Botanical Synergies.

---

### CarnoSoothe with PicroProtect™

<table>
<thead>
<tr>
<th>Item #01258 • 60 vegetarian capsules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Price</td>
</tr>
<tr>
<td>1 bottle</td>
</tr>
<tr>
<td>4 bottles</td>
</tr>
</tbody>
</table>

**References**

To order **CarnoSoothe with PicroProtect™**, 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.*
YOUR PERSONAL TEAM OF HEALTH ADVISORS...
JUST A PHONE CALL AWAY!

When a question arises about a personal health issue, most people have nowhere to turn for a rapid and accurate response. To resolve this information deficit, Life Extension® provides a team of knowledgeable experts ranging from medical doctors, naturopaths, and other practitioners to help bring clarity to one’s health concerns.

These health advisors are available at no charge to answer questions on any health topic.

Whether you want the latest information on how fish oil can be used to support cognitive function, have a question regarding a blood test, or want to learn about the implications of a persistent inflammatory issue, the Life Extension Health Advisor service can provide prompt research-backed answers—at no charge!

Too often, people feel their doctor does not spend enough time explaining their particular condition or what lifestyle changes they can pursue to improve their state of wellbeing. Or, they read a news report and are interested in learning more about how the new finding applies to their personal health.

Life Extension Health Advisors tackle these questions and thousands more using the latest published scientific information. This free advisory service is a critical component of Life Extension’s mission to educate maturing individuals about how to live a longer, healthier life.

Life Extension offers free access to medical doctors, nutritionists, cancer specialists, chiropractors, nurses, and naturopathic doctors with no appointment needed—all just a phone call away.
Optimize Your Health Program  
Most commercial supplement companies sell a bottle of pills and that’s where their “service” stops!  
If you have ever tried to contact one of these companies, you’ve probably discovered that it is difficult if not impossible to get information beyond what’s printed on the label. This can make it challenging to develop a comprehensive program to address your whole health concerns.  
That’s not the case at Life Extension. Customers are fully supported by a battery of trained professionals who know their research, including the most recent studies, and who are committed to helping consumers achieve optimal longevity.  
Those who call Life Extension are pleasantly surprised that a live person usually answers and there are no recorded menus that mandate multiple “buttons” be pushed to reach the right department. Callers to Life Extension aren’t told to read the label again in response to a question about a product, and all messages for more sophisticated assistance receive a call back.  
Life Extension believes that total “support” is essential for successful human longevity. That’s why knowledgeable health advisors are available to assist consumers at a level that is unheard of in the commercial marketplace.

How Even Simple Information Saves Lives  
Lifesaving data published in the peer-reviewed medical journals is not always incorporated into conventional medical practice. The tragic result is that people needlessly die because simple-to-implement treatments are overlooked by hurried physicians.  
Take a diagnosis of colon cancer for instance. There is strong data in the published literature to show that the proper use of an over-the-counter drug called cimetidine can improve survival rates up to 6-fold.  
In order to duplicate the successful clinical studies, cimetidine should be taken five days before and up to a year after surgery is performed to remove the primary colon tumor. Once metastasis of the colon tumor cells occurs to the liver, lungs, and/or brain, cimetidine is of little value.  
What few people understand is that in response to surgery, there is a reduction in immune function that increases risks of metastasis. Taking steps to bolster immune health prior to surgery, such as using the drug cimetidine can make a substantial difference in one’s ability to achieve a favorable treatment outcome. (Cimetidine has other anticancer mechanisms to help thwart metastasis.)  
Upon diagnosis of any cancer, one call to a Life Extension Health Advisor could result in suggestions a patient can discuss with their oncologist that can markedly improve survival outcomes.

Highly Personalized And Detailed Answers  
Some people may hesitate to call the Life Extension advisory service, wondering whether the answers to their questions might be too technical or not fully geared to their highly specific situation.  
According to Dr. Scott Fogle, Director of Clinical Information and Laboratory Services, “They should banish those thoughts...we are here to help and really want our customers to make the best decisions with regard to their health.  
"Many calls start off with the words, ‘I’m confused. There are so many supplements, I’m not sure what I should take’ or ‘I don’t understand how to change my diet to reduce my blood sugar,’ says Dr. Fogle. “We tackle a wide range of topics from people who have questions about their health and how to improve it. We want to provide scientifically based information and suggestions to help empower people to make more informed choices and have more meaningful discussions with their doctors.”  
Calls typically come from consumers with no science training at all who are looking for individualized health advice, for help interpreting a recent diagnosis, or have questions about selecting the appropriate...
What You Need To Know

Some callers are eager for impartial, science-based information so that they can better understand how to move forward with their particular health strategy.

On the other hand, some calls come from doctors and scientists seeking up-to-the-minute, highly technical information on visionary trends in the world of medicine. Oftentimes, these physicians are calling on behalf of a patient. In certain situations, they want information on a specific blood test, supplement, drug, or hormone that they feel would be helpful for their patient. For example, they may have a patient with high triglyceride levels and want the latest studies on what dose of fish oil can most effectively lower triglycerides.

“Our health advisors are trained to handle either situation,” says Dr. Fogle. “We pride ourselves on excellent customer service and part of that great service is being able to speak with the person at their level. We want people to walk away with clarity about their health question. No one should ever feel they don’t know enough to call our advisors—the medical and scientific world is full of jargon that is challenging to wade through, but our advisors are here to help [consumers] with that and more.

“The objective of our advisors is to help empower a person with knowledge,” Fogle continues. “We make the best suggestions possible to help someone. The health of our customers is our priority.”

Benefits Of Using Our Health Advisory Service

Most callers are seeking more holistic approaches to their health concerns and seem to feel that the current medical system does not sincerely care about their individual needs— and instead puts them on one-size-fits-all prescription medications. Furthermore, physicians often don’t have up-to-date knowledge about supplements or how nutrition can benefit particular health conditions.

“Our advisors have detailed knowledge of individual nutrients and special-purpose formulations, enabling them to answer specific questions on topics such as timing, allergens, and how the nutrient may interact with other supplements or drugs,” says Fogle. “For example, they can explain how to time your consumption of fiber to be separate from the intake of certain nutrients or the benefits of specific nutrients.”

Advisors often explain what nutrient or formulation is best for each caller’s needs—taking into account the individual’s key lifestyle factors. Life Extension advisors provide a powerful tool to facilitate positive change.

Your Own Team Of Expert Health Advisors

- Life Extension magazine reports cutting-edge medical evidence first—but the details of your health situation are unique.
- Will certain supplements interfere with your prescription drugs? Could one supplement replace the several you now take? Do you need an expert to explain a new diagnosis from your own doctor—or to review your lab results?
- Health-conscious individuals need individualized answers to specific health questions that their own doctors do not have the time or ability to answer.
- Life Extension provides you with cost-free access to highly trained medical doctors, nutritionists, cancer specialists, chiropractors, nurses, and a naturopathic doctor—all just a toll-free phone call away at 1-866-864-3027, every day of the year.
“Our advisors are trained to ask questions and understand each caller’s unique health condition so as to provide them with the information they need. It’s amazing the changes that we see people make in their lives after speaking to our advisors. People call us back all the time to let us know how they have benefited from the suggestions they received on the phone,” says Fogle. “We encourage the caller to present the scientific evidence to their doctor and have a meaningful discussion with him or her. Interestingly, we have found that a person’s physician will often take more time to discuss details of a diagnosis or a treatment with patients who are armed with scientific studies and knowledge.”

Life Extension customers utilize health advisors to learn more about their personal options regarding a wide range of health-related topics. The ability to tap into this wealth of information helps keep customers the best informed health enthusiasts in the world.

In a typical day, an advisor might help a customer to find the best nutrients to maintain healthy blood sugar levels, clarify a question about cholesterol management, and assist in deciding what blood tests to order. Advisors also field questions about articles in Life Extension magazine and provide additional information on specific nutrient formulas mentioned.

**Understanding Blood Tests**

Many customers find a meticulous review of their blood test results is the greatest benefit they obtain from speaking with an advisor.

Each year, tens of thousands of customers have their blood tested through Life Extension’s low-cost and comprehensive blood-testing service. Many callers ask for clarification of their test results. In this case, an advisor will go through the caller’s blood test and explain each test result. While our advisors and physician assistant explain things to you. Don’t leave the office without understanding everything you need to know.

- If the doctor recommends drugs, inquire about alternative treatments. Discuss side effects, interactions, and dosing options. Ask if a generic version is available.
- When your doctor suggests surgery, be sure to get a second opinion.
- If there are issues you want to discuss that your doctor doesn’t mention, raise them yourself.
- If you later realize that you forgot to ask a question or if you think of a new one, call the doctor’s office right away. Politely insist that the doctor speak with you, although you will probably have to leave a message.
- If your symptoms get worse, or if you have problems with your medications, call the doctor. If he or she wants to see you again, schedule the appointment immediately.
- If you need a better explanation than you can get from your doctor and his or her staff—or if you still have hesitations about prescription drugs your doctor has recommended—or if your doctor does not seem to understand how a natural product functions in the body—feel free to call the Life Extension Health Advisor Helpline at 1-866-864-3027 and ask for assistance.

At Life Extension, we believe in complementary medicine, and we want to help you to obtain the best health information available.

---

**Tips For Visiting Your Doctor**

*Life Extension* magazine reports each month on numerous studies that have shown a positive correlation between certain nutrients, hormones, drugs, and diet and reduced risk of disease. But even the healthiest individuals occasionally need to visit their doctor about a condition. When this happens, here are some things to keep in mind:

- Give your doctor a complete list of the supplements and medications you’re taking. If your doctor is not knowledgeable about herbs and other natural products, he or she may not be the best doctor for you. And yet all doctors learn from experience—armed with our reports and cited studies, you may even be able to teach your doctor about various natural options.
- Prepare questions for your doctor beginning with the most important questions first. This way, you’ll be sure to get the information you need.
- Bring a list of symptoms if you are not feeling well. Include anything that is out of the ordinary. Doctors are highly educated, but they are not mind readers.
- If you need help understanding medical terminology or if you tend to avoid confrontations, bring along a friend or family customer for support.
- Never withhold information—even if you find it embarrassing or uncomfortable. Doctors are professionals and the law ensures doctor-patient confidentiality.
- Take notes and do not let the doctor rush you. If he or she does not have the time, ask to have a nurse or physician assistant explain things to you. Don’t leave the office without understanding everything you need to know.
- If the doctor recommends drugs, inquire about alternative treatments. Discuss side effects, interactions, and dosing options. Ask if a generic version is available.
- When your doctor suggests surgery, be sure to get a second opinion.
- If there are issues you want to discuss that your doctor doesn’t mention, raise them yourself.
- If you later realize that you forgot to ask a question or if you think of a new one, call the doctor’s office right away. Politely insist that the doctor speak with you, although you will probably have to leave a message.
- If your symptoms get worse, or if you have problems with your medications, call the doctor. If he or she wants to see you again, schedule the appointment immediately.
- If you need a better explanation than you can get from your doctor and his or her staff—or if you still have hesitations about prescription drugs your doctor has recommended—or if your doctor does not seem to understand how a natural product functions in the body—feel free to call the Life Extension Health Advisor Helpline at 1-866-864-3027 and ask for assistance.

At Life Extension, we believe in complementary medicine, and we want to help you to obtain the best health information available.
doctor cannot diagnose a medical condition based on these results, they can explain what each test measures and provide information to help each customer intelligently discuss a particular topic with his or her doctor.

Many customers use the Life Extension blood test service to create a more comprehensive picture of their current health status.

Life Extension’s blood tests enable customers to learn more about issues that are often not covered by insurance—allowing customers to become active participants in their own health care.

Wondering whether your question is out of the norm? The range of customers’ questions commonly handled by advisors is an extensive one, says Fogle. In an average day, people call with questions about:

- Understanding a new diagnosis from their doctor,
- Blood work results or what blood tests to order,
- Details about a product or the best way or time to take it,
- Designing a targeted supplement wellness regimen,
- More information on a new product they’ve heard about from a friend or on the news,
- An article in Life Extension or another magazine or newly discovered medical information,
- Product quality questions such as testing for heavy metals and purity,
- Whether to take more or less of a supplement or whether or not it conflicts with other supplements or drugs,
- Why they’re tired all the time or the best way to lose weight,
- Condensing or simplifying their supplement regimen, or
- How to find a holistic doctor in the caller’s area or one that can prescribe BHRT (bio-identical hormone therapy).

There is extensive misinformation out there—some accidental and some very much intentional.

Serious flaws have been identified in studies that, on the surface, appear to question the lifesaving value of certain nutrients and hormones. In some cases, statistical manipulation is employed to take raw data showing a nutrient to be beneficial and turn it around so that the nutrient appears to be ineffective. Studies financed by drug companies are often slanted in a particular direction, and even when a neutral researcher is involved, the mainstream media can misinterpret a study in order to create fear and boost ratings.

It can be hard to determine what to believe. Life Extension helps to fill the gap by providing a scientific analysis of the most widely disseminated studies. Working with our medical review staff, a comprehensive examination of the statistical data is performed that cuts through the morass of misinformation in the media.

When confused by competing claims or what may be media misinformation, our team of health advisors provides clarity and contextual analysis rarely performed in today’s world of sound bite news stories.

### Intensive Training Of Our Advisory Team

If you’re imagining yourself endlessly waiting on hold to get brief answers from a few overwhelmed advisors—think again.

Life Extension currently employs a staff of 62 advisors and 14 doctor-advisors, including skilled professionals with up to several decades of experience. Even when we are exceptionally busy with other calls, your time on hold will typically only range from 30 to 120 seconds. The best time to contact our advisors is between 8am to 7pm EST on the weekdays and 9am to 1pm EST on the weekends.

Life Extension health advisors are highly screened and thoroughly trained to ensure that they not only have up-to-date scientific and clinical knowledge but also the ability to communicate that information to customers. They undergo an intensive, three-month training program and are continually tested to meet specific performance criteria, followed by weekly continuing education meetings. The advisory team is comprised of a unique combination of knowledgeable and talented professionals—they know the science behind healthy lifestyle choices and how to help with a variety of personal issues.

“We go to great lengths to hire only the best people and then train them to such a degree they feel like they went to medical school boot camp. But we don’t stop there,” says Dr. Fogle.
"We have weekly meetings for the ongoing scientific and clinical education of our staff, which is why callers can’t believe the quality and level of information our health advisors provide. Many customers have told us that the information they got was far more understandable, detailed, and complete than what they got from their own doctor!"

Whether your joints ache or you want to design a program to keep them from starting to ache, our health advisors have the dedication and expertise to work with you to give you access to the latest scientific studies. They are on the frontline of the longevity movement, dedicated to showing you how to live a long, healthy, and vibrant life.

By calling our Advisor Helpline at 1-866-864-3027 (seven days a week), you can ensure that you get the latest information on how to best approach your own health issue. Our advisors will gladly suggest a regimen of nutrients, hormones, diet, exercise, and even certain medications to ask your doctor about that’s customized for your particular needs.

**Summary**

When it comes to cutting-edge medical breakthrough, *Life Extension* magazine reports it first—but the details of your personal health situation are unique. Common questions are: Will certain supplements interfere with prescription medications? Could a single supplement replace several you now take? Perhaps you’d like further explanation about a diagnosis that your own doctor made, or would like to review your lab results.

Sometimes, you may need the individualized answers to specific health questions—questions that your own physician doesn’t have the time to answer. In other situations, you might need an expert to design a targeted supplement/lifestyle regimen for your particular needs—something most doctors cannot or will not do.

Life Extension provides cost-free access to a highly trained team of medical doctors, nutritionists, cancer specialists, chiropractors, nurses, and naturopathic doctors, all just a toll-free phone call away—at 1-866-864-3027—*every* day of the year.

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

**Reference**

These days, antidepressant and anti-anxiety drugs are about as common as water and coffee. To the detriment of their patients, many prescribers lead people to believe that these powerful drugs will “fix” their patients’ problems. Many of these drugs are highly addictive and have long-term side effects that are serious and harmful. Fortunately, there are safe and effective natural therapies to treat depression and anxiety.

Ross Pelton is a pharmacist (RPh), a certified clinical nutritionist (CCN), an author, and a long-time member of the Life Extension® Medical Advisory Board. He has created a four-hour online course titled Natural Therapies for Depression & Anxiety. The course consists of 39 video segments and it is posted on Udemy.com, which is a WEB site that hosts a large number of online courses.

The retail price for this four-hour course is $99, but it is offered to Life Extension® customers (as well as family and friends) at a 50% discount ($49) along with a 100% money-back guarantee. In order to take advantage of this discount offer, go to Udemy.com and put the name PELTON in the search field to access the course, then enter the code LEF50 to take the course at a 50% discount.

Ross, who has been studying antidepressants and anti-anxiety drugs for over 20 years says, “The more I delve into the biochemistry and the mechanisms of action of these drugs, the more alarmed I become. For example, examining animals given human-equivalent doses of SSRI antidepressants reveals a 40 to 60% decline in the number of serotonin receptors in their brains. Pharmaceutical companies call this ‘down regulation.’ I call it brain damage.”

Robert Whitaker, who wrote the amazing book Anatomy of an Epidemic, has stated, “Antidepressants and other psychiatric drugs have directly contributed to an alarming new epidemic of drug-induced mental illness.”

Pelton believes that people with mild-to-moderate depression/anxiety should NEVER be put on these drugs. The drugs often end up turning short-term suffering into long-term disability and all too frequently these drugs trigger manic and psychotic instability, episodes of mass shootings, and suicide.

If you or someone you know suffers from depression and/or anxiety, this online course may be extremely valuable. In addition to presenting controversies in psychiatry and exposing the failings of conventional medicine in the treatment of depression/anxiety, this course offers people hope with a wide range of safe and effective natural therapies.

To take this course, go to Udemy.com, search Pelton, and use the coupon code LEF50 to get started on the path to better health. If you take this course, please consider posting a review.
Taurine, a free amino acid, has been described by scientists as “one of the most essential substances in the body.”¹ But as we age, taurine levels decline.

**Cognitive Function and Brain Cell Regeneration**

The benefits of taurine on brain cell growth are especially evident in those with a taurine deficiency, which includes *aging individuals*.

Promising research has found that taurine can promote **new brain cell formation** in the area of the brain associated with **learning** and **memory**. It does so by activating hibernating **stem cells** that are capable of growing into several different kinds of cells.²

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

**Whole-Body Health**

Past research has also shown the ability of taurine to maintain and support:³⁶

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

One capsule taken one to three times daily on an empty stomach, or as recommended by a health care practitioner, supports optimal cardiovascular levels.

**References**

THE MOST COMPLETE PROSTATE PROTECTION

Ultra Natural Prostate formula provides the latest scientifically-validated botanical extracts shown to promote healthy prostate function.

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

- **Standardized lignans** provide support for prostate cells against excess estrogen levels.1-3
- **AprèsFlex** supports normal inhibition of 5-lipoxygenase or 5-LOX, an enzyme associated with undesirable cell division changes.4-6
- **Stinging and Dwarf nettle root extracts** help support prostate cells against excess estrogen levels.6,7
- **Saw Palmetto CO2 extract** helps support dihydrotestosterone (DHT) activity in the prostate, helps support normal urinary flow, and helps regulate inflammatory reactions in the prostate.8,11
- **Pygeum** extract helps suppress prostaglandin production in the prostate and supports healthy urine patterns.2,3,13
- **Pumpkin seed oil**, enhances the composition of free fatty acids and augments saw palmetto’s benefits.14-16
- **Beta-sitosterol** enhances the protective effects of other botanical extracts and helps improve quality of life.17-19
- **Graminex® Flower Pollen Extract™**, has been shown to help relax the smooth muscles of the urethra and help regulate inflammatory reactions.20-22
- **Boron** has been shown to slow elevation of prostate-specific antigen (PSA).23-25
- **Lycopene** supports efficient cellular communication, helps maintain healthy DNA, regulates hormonal metabolism, and promotes healthy prostate size and structure.26-32
- **Phospholipids** enhance absorption of active compounds.

**Ultra Natural Prostate**

Item #01898 • 60 softgels

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$38</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$26.25 each</td>
</tr>
</tbody>
</table>

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

- **Saw Palmetto CO2 extract** (fruit) [providing 272 mg total fatty acids] 320 mg
- **Graminex® Flower Pollen Extract™** (from rye) 252 mg
- **Stinging and Dwarf nettle extracts** (root) 240 mg
- **Beta-Sitosterol** 180 mg
- **Phospholipids** 160 mg
- **Pygeum extract** (bark) 100 mg
- **Pumpkin seed oil** [providing 170 mg total fatty acids] 200 mg

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

**Life Extension**

Contains soybeans.

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.
NOVEL STEM CELL TREATMENT FOR SCLERODERMA
Imagine living in a body that is turning to stone. Your skin becomes so tight to the bone that it can’t be pinched. Your fingers, once nimble and dexterous, become frozen in a claw-like position. Your internal organs begin to function less efficiently, and you’re faced with chronic heartburn, shortness of breath, fatigue, and much more.

These are all symptoms of an autoimmune disease called scleroderma. There is no known cause for scleroderma—and worse, no cure.

But for the 300,000 Americans living with this disease, hope is on the horizon. Life Extension Scientific Advisory Board member Dipnarine Maharaj, M.D., of the South Florida Bone Marrow/Stem Cell Transplant Institute, is making dramatic inroads into a disease that has otherwise baffled the medical community.
Dr. Maharaj’s novel approach to scleroderma is the first treatment designed to fight scleroderma at its root.

**Stem Cell Mobilization Protocol**

Dr. Maharaj performs stem cell transplants at the South Florida Bone Marrow/Stem Cell Transplant Institute. A stem cell transplant involves taking stem cells from the patient’s own bone marrow, giving them chemotherapy that wipes out their bone marrow immune system, and then reinjecting the stem cells back into the patient in order to restore bone marrow and immune function.

In addition to the chemo, patients are given an FDA-approved protein to help them recover their blood count or to be used as a stem cell mobilizing agent. While it can be lifesaving, a stem cell transplant is a long process that is very taxing on patients who are already very sick.

Over the years, as he treated cancer patients, Dr. Maharaj discovered something remarkable. In the process of using this treatment for cancer patients, he found that it was leading to extraordinary improvements in autoimmune diseases such as rheumatoid arthritis, systemic lupus erythematosus—and even scleroderma.

However, while stem cell transplants are often successful for cancer patients, they are too risky to use as a primary treatment for autoimmune diseases because the high-dose chemo can cause further damage to the organs.

That’s when Dr. Maharaj had his lightbulb moment. “Instead of using the high-dose chemo first, why not eliminate the chemo, and instead [use the protein alone] to utilize the ability of the stem cells to regenerate the immune system, repair inflammation, and repair skin and other organs,” said Dr. Maharaj.
This process pioneered by Dr. Maharaj is called **stem cell mobilization**. Different from a stem cell transplant, stem cell mobilization doesn’t use chemotherapy, and stem cells don’t need to be removed from the body. Instead, the process involves using the specialized protein that works to release disease-fighting stem cells from the patient’s own bone marrow.

In this way, you’re mobilizing—or activating—the stem cells, instead of transplanting them. This would be a much less risky procedure, with no toxicity because instead of the wiping out the immune system, you’re enhancing it.

“With my protocol, we are able to mobilize the patient’s stem cells from the bone marrow into the blood,” said Dr. Maharaj. “This allows those stem cells to go into areas where there is inflammation, or damage to the skin or organs, and repair it.”

Now Dr. Maharaj’s next step was to find pilot patients to use the protocol as a primary treatment for scleroderma.

That’s when he met Gale.

**Gale’s Story**

When 59-year-old Gale Sylvester-De Mello first heard about Dr. Maharaj's treatment, she was at the end of her rope. She had suffered from scleroderma for 24 years and had traveled all over the country seeking new treatments—but nothing had worked, and her time was running out.

“My doctor didn’t know what more to do,” said Gale. “He told me I would have to start looking for hospice in the not too distant future.”

Instead, Gale kept looking for a solution. That’s when she heard Dr. Maharaj as a guest speaker at the Southeast Florida Chapter of the Scleroderma Foundation. He was talking about his novel treatment called stem cell mobilization.

Everything he said made sense to her, Gale said, but there was just one catch: The treatment was experimental, and Dr. Maharaj offered no guarantees of success.

“We had no other option,” said Gale. “We had done everything conventional we could have done.”

That’s why Gale decided to move forward and become the pioneer scleroderma patient for Dr. Maharaj’s stem cell mobilization protocol.

After the six weeks of treatment, Gale’s results were nothing short of remarkable. Her immune function (as measured by natural killer T cell percentage) rose significantly from 10 to **27%**, putting her in the normal range (which is between 17 and 39). And most incredible of all, one of her most debilitating symptoms was almost completely reversed.

**What You Need To Know**

**Novel Stem Cell Treatment For Scleroderma**

- Scleroderma is an incurable autoimmune disease characterized by hardening and tightening of the skin and connective tissues in the body. It can also affect internal organs such as esophagus, gastrointestinal tract, lungs, kidneys, and heart.

- It causes chronic heartburn, shortness of breath, fatigue, and much more.

- A novel treatment approach was developed by Dr. Dipnarine Maharaj. Called stem cell mobilization, the process uses a specialized protein that works to release disease-fighting stem cells from a patient’s own bone marrow. The stem cells travel to inflamed areas to repair damage to skin or organs.

- Unlike a stem cell transplant, no chemotherapy is necessary; therefore, there is no toxicity. Instead of destroying the immune system, it is enhanced.

- Patients who have undergone the experimental treatment report dramatic results.
For nearly 30 years, she had been living with severe heartburn and nearly constant acid in her throat, forcing her to sleep propped up on three to four pillows and to take numerous medications. But beyond the pain and discomfort, she was only months away from needing a permanent feeding tube because of the damage done to her esophagus.

“My doctor told me he had never seen an endoscopy that looked like mine. He had never seen it get that bad that fast,” said Gale.

But all that changed after the stem cell mobilization protocol. When she had a follow-up endoscopy after undergoing the treatment, Gale’s doctor came in the room with tears in his eyes.

“T’ ve never seen anything like this,” he told her. “Your esophagus is 99% normal.”

As a result, Gale has decreased her heartburn meds from six to three, she no longer needs to sleep propped up, and she can finally enjoy food without the taste of acid in her throat.

The scleroderma had also caused tightening of the skin on her face, arms, and hands—all of which have become noticeably looser after the treatment. In addition, Gale is off of seven major medications, she’s sleeping better, has experienced a decrease in pain, and doesn’t experience as much brain fog.

“The stem cell mobilization treatment has given me my life back,” said Gale. “My quality of life was given back to me, where I had none before.”

Jessica’s Story

Four months after Gale started treatment, 27-year-old Jessica Massengale became the second scleroderma patient to undergo Dr. Maharaj’s stem cell mobilization protocol.

“My disease had progressed little by little,” said Jessica, “but it was at a point where I was really frightened at the direction the disease was taking me.”

Though she had only had the disease for seven years, she had developed tight skin from head to toe. The skin on her hands was so tight that they had curled into a permanent claw-like position, and she had developed painful ulcers on her knuckles because of lack of blood flow through the body.

Like Gale, Jessica also suffered from severe heartburn.

She had tried immunosuppressant drugs, but was forced to stop because of the side effects. And she had even tried a form of low-dose chemo, but it had little effect. Jessica was out of options.

“I didn’t want to be on medication,” said Jessica. “I wanted something that could heal me. I was drawn to Dr. Maharaj’s approach because his practice is to use the body to heal—that way it can continue to heal itself after treatment is over.”

Jessica has experienced numerous benefits as a result of the stem cell mobilization protocol. Her skin has loosened up all over her body. Her mouth, which had gotten smaller due to the tightening of the skin, has increased by one inch. The skin on her shoulders used to feel like bricks, but has softened up completely. She was also able to stop taking Nexium altogether.

“I felt like someone was injecting life back in me,” said Jessica. “I hadn’t felt like that in so long.”

Perhaps most exciting of all, her lung function had improved from 69% to 84%! This is especially noteworthy considering lung failure is the number one way patients die from scleroderma. In addition, her heart results were 100% normal.

Unfortunately, Jessica’s worst complication—her hands—has not improved, and she is planning on undergoing a second round of treatment.

“I believe in it that much that I’m willing to do it again,” said Jessica.

What’s Next?

To date, Dr. Maharaj has treated five scleroderma patients. He has seen consistent results, and the patients have maintained their improvements. However, it’s still very early in the process, and the patients will need to be followed for several years in order to determine long-term effects.

Currently, because the stem cell mobilization protocol is still considered experimental, it is not covered by insurance, making its $65,000 price tag out of reach for many patients. In order to help this important procedure become standard of care—and accessible for the majority of scleroderma patients—the next step is to conduct a formal study.

Unfortunately, many scleroderma patients can’t wait the five to 10 years a study would take to complete. So in the meantime, Dr. Maharaj is going to continue to provide this lifesaving treatment that many would say you can’t put a price tag on.
The Bigger Picture

The beauty of a technique that mobilizes the body’s own disease-fighters is that its benefits are not limited to scleroderma. Dr. Maharaj believes his stem cell mobilization protocol could also become a broader treatment for chronic disease.

“Chronic diseases occur on the backbone of inflammation and deterioration of the immune system,” said Dr. Maharaj. “What the stem cell mobilization protocol does is to reduce inflammation, repair the immune system, and help damaged tissues recover.”

Diseases that have a basis of inflammation—such as heart, lung, autoimmune, and neurological diseases—are all examples of diseases that could be helped by the stem cell mobilization protocol. And in fact, they already have. According to Dr. Maharaj, he’s seen improvements in patients with diabetes, Parkinson’s, Alzheimer’s, lupus, and rheumatoid arthritis.

“My objective for the future is for us all to have health and wellness and to be free of diseases as we age,” said Dr. Maharaj. “My goal is to find solutions so our quality of life remains good well into our later years. That’s what we call healthy aging.”

Summary

Scleroderma is an incurable disease that affects 300,000 Americans. This autoimmune disease not only causes hardening of the skin, it also affects internal organs, including lungs, kidneys, and heart.

Dipnarine Maharaj, MD is a hematologist/oncologist. His vast experience in doing stem cell transplants to treat leukemia patients led him to develop this novel stem cell mobilization approach that uses a specialized protein to release disease-fighting stem cells from a patient’s own bone marrow to suppress inflammation and repair the horrific damage inflicted by scleroderma, a current incurable disease.

The fact that conventional medical insurance will not cover this potential life saving therapy is a tragic example of a broken health care system that needs a radical overhaul.

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

Scleroderma Strong

The stem cell mobilization protocol is making a real difference in the lives of scleroderma patients. Unfortunately, its $65,000 price tag—and the fact that it’s not covered by insurance—puts it out of reach for many who are living with this disease.

Gale Sylvester-De Mello, the first patient to receive this pioneer therapy—knows firsthand the sacrifices involved in paying out of pocket—but also knows it was worth every penny. That’s why she and her husband, Tony, have started a 501c foundation called the Gale and Tony De Mello Scleroderma and Madelungs Foundation.

“There was no foundation for scleroderma where people could turn to for financial help,” said Gale. “Our goal is to help cover the medical and practical costs not covered by medical insurance, such as lodging, food, gas, and wheelchairs.”

Jessica Massengale, the second patient to receive the stem cell mobilization protocol, is helping fellow scleroderma patients in a different way.

“I try to empower patients because of what we go through,” said Jessica. “We are a community of survivors who do not give up. It’s not even part of our vocabulary.”

She has a Facebook page that supports other patients (www.Facebook.com/MyJourneyWithSclerodermaByJessica), and has built a website that highlights the warriors who do battle with this disease every day—and that also provides critical information on Dr. Maharaj’s treatment.

Both women are on a mission to make a difference in the lives of fellow scleroderma sufferers—and informing people about the stem cell mobilization protocol is part of that mission.

“The best thing Dr. Maharaj’s treatment has done for me is that it has given us hope,” said Gale. “Now we can give hope to other people.”

For more information, visit: www.scleroderma-strong.org.

Dr. Dipnarine Maharaj and Gale Sylvester-DeMello.
Pycnogenol®—a potent plant extract from French Maritime pine bark—is formulated with proantho-cyanidins, bioflavonoids, and other health-promoting compounds to boost the body’s natural defenses against five major promoters of premature aging.

Backed by 40 years of study and the subject of over 300 publications, Pycnogenol®:

- Maintains healthy circulation by supporting relaxation of arteries and improving endothelial function
- Defends skin against free radicals produced by sun, stress, and environmental damage
- Maintains healthy joint mobility and flexibility, and supports a healthy inflammatory response
- Supports retinal capillaries and helps maintain healthy eyesight
- Supports healthy blood sugar levels and cellular metabolism of sugar

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.
Scientists continue to find healthy benefits—including DNA protection—in cruciferous plants.

But it’s not always easy to get in five servings of cruciferous vegetables a day—and even if you do, cooking can destroy many of the protective compounds found in broccoli, Brussels sprouts, cauliflower, and cabbage.

Life Extension®’s Triple Action Cruciferous Vegetable Extract combines vital plant extracts into a comprehensive formula to provide optimal DNA protection. Each capsule also contains:

1. **Indole-3-carbinol** (I3C) and **di-indolyl-methane** (DIM) to encourage liver detoxification and modulate estrogen metabolism
2. Bioactive **cruciferous** compounds like **glucosinolates** have favorable effects on healthy cell division
3. **Apigenin**, a powerful plant flavonoid, that boosts cell protection

Those who want the additional benefits of **trans**-resveratrol can order Triple Action Cruciferous Vegetable Extract with Resveratrol. Each vegetarian capsule contains **20 mg** of trans-resveratrol in addition to the vegetable extract.

### References:

### Price List

<table>
<thead>
<tr>
<th>Product</th>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triple Action Cruciferous Vegetable Extract</strong> Item #01468 • 60 vegetarian capsules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$24</td>
<td>$18</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$16.50 each</td>
<td></td>
</tr>
<tr>
<td><strong>Triple Action Cruciferous Vegetable Extract with Resveratrol</strong> Item #01469 • 60 vegetarian capsules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 bottle</td>
<td>$32</td>
<td>$24</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$22.20 each</td>
<td></td>
</tr>
</tbody>
</table>

To order Triple Action Cruciferous Vegetable Extract, call 1-800-544-4440 or visit www.LifeExtension.com

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.
What if you are living as healthfully as possible but your body finally fails and today’s doctors give up on you? Give medicine of the future a chance to repair and rejuvenate you. Let us help you get there.

Call for the facts on cryopreservation.

Cryopreservation is the science of using ultra-cold temperature to preserve human life with the intent of restoring good health when technology becomes available to do so. Call Alcor or visit our website today for your free information package.

Consider opting for the most advanced protection science currently offers to help you preserve your life!

480-905-1906 ext. 101
alcor.org
At age 72, Life Extension® customer Linda Reboh is living proof that if you take care of your body, your body will take care of you. After enduring a traumatic accident in 2014 when her 70-pound dog suddenly ran into her from behind, causing a fall that broke three ankle bones, Reboh stunned her doctor when all three bones healed in just seven weeks. She credits her dramatic recovery on her 40 years of bodybuilding and other exercise, a wholesome diet, supplements, and expert advice from Life Extension® advisors. In an exclusive interview, Reboh tells us exactly how she did it.

Reboh had a great start in life. The trouble was, it took her a while to realize it. Born in New York to immigrants, she lived in Morocco between the ages of 6 and 10, and then returned to California with her parents and sister.

“My parents were into yoga and my father was a vegetarian, so I thought they were weird,” Reboh recalls. “Nobody else’s parents were like that: ‘Eat your vegetables,’ when I was saying, ‘Give me some meat.’”

Reboh’s mother and sister were both asthmatics and she says she grew up in a very sick home. “I wanted to be healthy,” she remembers. But it was only many years later that she began to discover what that meant—and altered her lifestyle.
Earning a degree in psychology, Reboh decided it wasn’t her field after all and later went back to school for a law degree. Then at 32, her life took a dramatic turn. She met a businessman and bodybuilder who introduced her to Joe Gold’s Gym and she quickly became one of the first women allowed to train there. She has never stopped.

Reboh also met her husband at Gold’s and eventually ran his business, doing all the legal work. Currently a licensed real estate agent in Arizona, she maintains her fitness routines.

A Life-Changing Accident

In May 2014, Reboh was walking her 7-month-old, 70-pound Doberman puppy. Removing his leash when they reached the dog park, she was talking to a friend when the dog suddenly ran into her at full speed from behind, knocking her up in the air, then hard onto the ground.

“I think he was playing,” she says, but she nevertheless sustained three severely broken bones in her ankle. Nine days later, when the swelling had gone down, Reboh underwent surgery. “I thought I knew it all,” she comments, “but I had never been injured before. I’d always been healthy, but not always consistent about taking my vitamins.”

A longtime Life Extension® customer, Reboh called a health advisor and was given a list of vitamins that helped her quickly heal. “Every time I went to the doctor for x-rays, he’d say ‘You’re coming along really well,’ and after seven weeks, he said, ‘You’re healed, you’re healed!’”

Reboh adds that she now takes her supplements “religiously,” and she is determined to get back to where she was before the accident. She knows several people who have had the same surgery and have required four or five additional operations, simply because their bones didn’t heal properly.

The World of Women’s Bodybuilding

Reboh once questioned why some people started to look old in their 40s and 50s—and a few in their 30s. “At Gold’s Gym,” she explains, “I was surrounded by people who didn’t look like that, though there weren’t a lot were women at the beginning.” Although she had been working out at that point, she had never used weights. “If a woman used weights,” she says, “she was a ‘weirdo.’ The women would say, ‘What are you doing? You want to build muscle?’ Back then, it was very new for a woman to be into bodybuilding.”

She soon discovered that many of those early women bodybuilders were taking steroids, testosterone, and other drugs, which she fortunately recognized were dangerous. “They were growing beards, they had to shave,” she recalls.

Reboh was determined to stay away from any of these substances. “Professional bodybuilding is not about health,” she states. “When you take all those drugs, it can’t be about health.”

After first starting bodybuilding at age 32, Reboh has never stopped training. A glance at her photo-
Reboh sees maintaining youth as both physical and mental. “I never thought about age,” she states. “I feel we are in control of that and you can change your mindset. People who read Life Extension® magazine and take vitamins think that way; they get it.”

The keys are eating right, taking supplements, and exercising. Reboh is also an advocate of mindfulness and living in the present. “You go into the past, you go into depression. You go into the future, you go into anxiety. The only thing we have is right now.” She meditates, listens to audio tapes, including those from Buddhist Thich Nhat Hanh, and believes in a higher protective power.

Reboh also takes responsibility for her own health and never waits until a doctor tells her something is wrong. “Prevent it,” she advises, “don’t wait until you’re sick.”

Additionally, she stays mentally active by learning something new as often as possible. Here she quotes Gandhi: “Learn like you’re going to live forever and live like you’re going to die tomorrow.”

Creating goals for yourself is vital to health and longevity, says Reboh. “My day-to-day goal is to walk 15,000 to 20,000 steps a day, which is about eight miles.”
It sounds like a lot, but she has a calculator to count her steps and says when you factor in daily routines such as walking around your home, it really isn’t that much. She adds that if you sit a lot for work or relaxation, it’s important to get up every hour and take a walk.

Having had many different professions in her lifetime, Reboh is once again considering a change—this time to being a personal trainer, using her large home gym. “I could train people starting slowly. The privacy of my home is an advantage because a lot of people who haven’t worked out are embarrassed and don’t want to go to a gym.”

Advice For Others

Reboh is also seriously considering writing a book on how to be healthy at any age. She offers the following advice in her own words:

• **There’s no such thing as dieting.** There’s only healthy eating or unhealthy eating. People who diet reach their goal, and then gain back the weight.

• **Clean up your diet.** Look at food as fuel, not recreation.

• **Take supplements.** Your food alone can’t provide all the nutrients you need. Get advice to find out what you need individually.

• **Start now.** It’s best to start eating, exercising, and weight training when you’re young, but you can start at any age and in any condition. Find the right trainer to teach you what to do. If you can’t afford a gym, do your exercises at home. Don’t forget walking and don’t sit for hours in front of a television.

• **If you don’t feel like working out, do it anyway.** “I don’t allow that side of me to dictate what I’m going to do.”

• **You can build muscle after 50.** Remember that doctors once said you couldn’t and that diet had nothing to do with disease.

• **Make the most of every day and focus on the present.**

Life Extension’s Importance

Linda Reboh credits Life Extension® for consistently supporting her and teaching her about health and longevity. “When people tell me about some health problem, I urge them to call a Life Extension® advisor. They did so much for me.” She says she has often read about a scientific advance in nutrition or health care in Life Extension® magazine—such as the importance of vitamin D—and then hears about it from her doctor five or more years later.

“I was in Whole Foods before my accident,” Reboh says, “and this woman came up to me and said I was in great shape. I told her my age and she said, ‘Wow, you’re like those people in Life Extension®.’ The medical profession is so far behind and that’s why I feel fortunate I found Life Extension®. I’m reading important information that the medical profession doesn’t even know yet.”

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

You can contact Linda Reboh at: reboh@cox.net
CoQ10 Energizes Aging Cells by Enhancing Mitochondria Activity

Published studies on CoQ10 absorption clearly show that ubiquinol CoQ10 is superior to the conventional ubiquinone form. In middle-age mice, ubiquinol proved 40% more effective in slowing measurements of aging compared to ubiquinone.\(^1\)

A 2014 study further validates that ubiquinol activates mitochondrial functions to slow aging in mouse models.\(^2\)

**Life Extension** goes one step further and adds shilajit to its ubiquinol formula in a product called Super Ubiquinol CoQ10. Shilajit has been shown to promote mitochondrial metabolism, helping mitochondria convert fats and sugars into ATP—the main source of cellular energy.\(3,4\) When combined with ubiquinol CoQ10, it has been shown to double levels of CoQ10 in the mitochondria.\(^5\)

The latest studies reveal that when shilajit is combined with CoQ10, cellular energy substantially increases. Combining the two ingredients produced a 56% increase in energy production in the brain—40% more than CoQ10 alone! In the muscles, there was a 144% increase.\(^6\)

**References**

Kaneka QH\(^\text{®}\) is a registered trademark of Kaneka Corporation. PrimaVie\(^\text{®}\) is a registered trademark of Natreon, Inc.
Magnesium is the most important mineral in the body, yet most Americans do not obtain sufficient magnesium from their diet.

Magnesium is required for more than 300 biochemical reactions and many of the body’s critical functions are dependent upon it. Magnesium helps:¹,²

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

The recommended intake of magnesium to maintain vascular health is 500 mg or more a day. With Life Extension® Magnesium Caps, you can easily obtain 500 mg of elemental magnesium for less than 7 cents a day!

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

References
Finding A High Quality FISH OIL

BY SCOTT FOGLE, ND

Q: How can I tell if I’m getting a high-quality fish oil product since there are so many fish oil products on the market?

A: In the wake of recent news that some dietary supplement products may not contain what they say on their labels, consumers are becoming more cautious and concerned about the products they spend their money on. They want to know if they are getting what it says on the label. They also want to know if there are any contaminants or toxins in the product. Equally important, consumers do not want to be misled into using a product that lacks the potency necessary to meet their health needs. Thus, there is a growing focus by consumers on potency and purity, now more than ever.

Request A Certificate Of Analysis

To ensure that a product meets its label claims, an array of analytical equipment is required to verify ingredient identity and potency. Unfortunately, unless you have your own analytical lab in your basement, there is no way to conveniently perform the testing necessary to verify these claims. Many companies tout their purity and potency with claims in their marketing literature, but how can you verify those claims? Fortunately, there are several ways that you can obtain key information about product quality to make an informed purchasing decision.

The best way is to request a certificate of analysis (COA) from the company. If a company cannot, or will not, provide you with a COA for the product, this should raise a big red flag. Once the company provides a certificate of analysis, look carefully at the COA you received. Is it a representative COA or is it a lot-specific COA? Representative COAs generally reflect the best COA that was obtained for all of the product’s various batches or lots (production runs). The company picks the best COA to represent the product and this is what they send. Unfortunately, product quality often changes between production runs, which means that although a representative COA is a good start, it does not provide the lot-specific information necessary to determine how pure and potent the specific bottle you purchased is.
Obtaining a lot-specific COA that matches the exact lot number for the product you have in your hand is much more meaningful. A company that can provide you with a lot-specific COA is a top-tiered company with a focus and proficiency in creating and delivering high quality products to its customers. A lot of effort is needed in order to provide lot specific COAs so it also typically means these companies have their own in-house quality control and quality assurance team constantly checking their products and performing quality audits at their manufacturing facilities.

Q: So what does a COA tell me?
A: It tells you a lot about product potency and purity. It even contains other important information like disintegration times.

Typically, a COA starts off with a section that identifies the product. It has a description section that includes details such as capsule size, fill color, lot number, and manufacture date.

The next section contains information regarding potency testing, often called the “assay section.” The claims made on the product label, including ingredient identity and strength, are what will be tested for and listed in the assay section of the COA. It contains a list of specific markers (ingredients or standardized constituents), such as EPA and DHA for fish oils, and their respective strengths as verified through analytic techniques like high performance liquid chromatography or gas chromatography–mass spectrometry (HPLC or GC/MS).

At a minimum, each product should meet its label claims for identity and potency. What few people realize, however, is that premium-grade products are often formulated with extra potency (overage). Top quality companies typically err on the side of providing extra potency to ensure they always meet or exceed their label claim and to ensure they can still meet label claim at end of the “best by” date as well. This means that products from top companies will often have an overage that would look like 117%, meaning it has 17% over the amount claimed on the label. So you can actually be getting more than you paid for, something that doesn’t happen often nowadays!

The assay section will also have a disintegration section that tells you how long it takes to dissolve. The solutions used in the testing can be water with a pH around 7, a buffered solution with a pH of 6, or a solution that stimulates gastric acid with a much lower pH. The solution used in the test is determined by United States Pharmacopeial guidelines for the supplement being tested. Generally, quality companies set a disintegration time limit of <30 minutes for optimal effectiveness. This means in less than 30 minutes, the capsule, tablet, or softgel should degrade enough to release its contents. The disintegration test is making sure the capsule, tablet, or softgel will release its contents so that they can be utilized by the body and exert their effects. Note that the disintegration time does not mean all the material will dissolve in the solution; that is a common misconception. The purpose of the test is to ensure that the capsule, tablet, or softgel will release its beneficial contents in that time. You don’t want capsules or tablets passing through your system without releasing their contents.

The next section of a COA is microbiological testing because no one wants mold, yeast, or bacteria growing in their products. The first component listed in this section of the COA is the total plate count. This is a very important test since it looks at the total growth of all the microbes that can grow on an agar plate (a Petri dish containing food for them to grow). Additionally, the product is tested separately for total yeast and mold to assess growth of these particular organisms. Finally, agar plates are tested for three bacterial species known to be of greatest concern: E. coli, Salmonella, and Staphylococcus aureus. If agar plates show any
growth of these harmful bacteria, the product is rejected.

The final section of a COA typically contains heavy metal testing results. There are four metals to be concerned about in the world today and it is growing ever harder to avoid them. These heavy metals—arsenic, cadmium, mercury, and lead—are tested for and reported; and if any of these are above a strict threshold, then the product is rejected. Unfortunately our planet is polluted far more than most people realize. Our soil and water are ever increasing in these persistent toxins and not much is being done about it. Thus it is important to test for arsenic, cadmium, mercury, and lead in your supplements.

Testing For Toxins

Q: This sounds great! But with fish oils don’t you have to worry about even more toxins than most supplements?

A: Yes, that is correct. Fish oils have other components that can be tested and the best dietary supplement companies spend the extra money to get them tested by the International Fish Oil Standards (IFOS) program. This is an independent laboratory that specializes in testing and rating fish oils. They provide a very important consumer function in doing this specialized testing. Consumers should look for a fish oil that has a Five-Star rating given by IFOS. If they aren’t tested by IFOS, you simply don’t know what you are getting when you take that fish oil supplement.

IFOS provides a star for achieving each of the following criteria: A first star is awarded for passing all the stringent testing categories set by three influential organizations—the Council for Responsible Nutrition, Global Organization for EPA and DHA Omega-3, and the World Health Organization. Passing all those is no easy task! A second star is awarded if the omega-3 concentrations exceed 60% of the fish oil contained in the formula. This star helps weed out the products that don’t have the higher concentrations of the beneficial components of fish oil, the omega-3s. If you are buying a generic fish oil product, it may not get a star in this important category. Three more stars are awarded for categories dealing with three toxic markers. After all, we take fish oils to obtain their numerous health benefits, not to add more toxins into our bodies.

One marker IFOS looks for is overall oxidation of the fish oil. Fish oil is beneficial because it contains numerous double bonds in its hydrocarbon chain, making it “polyunsaturated.” Since fish oils are rich in these polyunsaturated fatty acids, fish oils are much more susceptible to oxidation than other oils, like olive or coconut. These wonderful double bonds enable fish oil’s amazing biological effectiveness, but it comes at a cost. Those double bonds are the same places were oxidation can attack. If that happens, the oil will become rancid and is no longer beneficial. Thus, it is more important to test for oxidation in fish oil than other oils that don’t have as many double bonds. IFOS does this by testing not just total oxidation of the oil but also by looking at specific levels of peroxide and anisidine in the fish oil as individual markers of oxidation. As anisidine levels increase in an oil, so does its rancid smell, a marker of its degree of oxidation.

Another important, but less well known test, is the total acid value of the oil. When free fatty acids are cleaved off their parent molecules (triglycerides or phospholipids), this process will increase the total acid value of the oil. Guess what is great at initiating this cleavage of free fatty acids? Microorganisms! Thus, an increase in the total acid level generally indicates an excess of microbes, which is not what you want to find in your fish oil.
Testing For Pollutants

Q: What about PCBs? I’ve heard they can be a concern in fish oil products.

A: Yes, another common concern amongst consumers is whether or not their fish oil contains persistent organic pollutants (POPs), such as polychlorinated biphenyls (PCBs). Human exposure to these contaminants has been associated with a wide range of toxic effects including endocrine disruption, immune suppression, and neurological changes. These contaminants are industrial byproducts, so although not naturally present in fish oil, they can find their way into the water supply from industrial pollution, and the fish become contaminated. POPs tend to accumulate in the fatty tissue of fish, so it is particularly important to test for them in fish oil. Fortunately, IFOS tests fish oils for common POPs including total PCBs, dioxins and furans, and dioxin-like PCBs to ensure that levels fall below strict limits. Ensuring fish oil is free of these toxins is critical when evaluating fish oil quality and safety.

The final category for IFOS testing is heavy metal testing. It looks at the same four toxic metals found on a certificate of analysis (COA). It checks levels of mercury, lead, arsenic, and cadmium. It must pass the stringent standards for these toxic metals as described by the Council for Responsible Nutrition as well as the Global Organization for EPA and DHA Omega-3s.

Testing For Radiation

Q: Is radiation a concern given past events like the Fukushima disaster?

A: In 2015, IFOS also added a new category to its extensive testing menu, this one for radiation. Concern about the dangers of radiation in fish oils, primarily from recent events like the Fukushima Daiichi nuclear power plant disaster of 2011, have persisted among consumers. To help ease consumer concern regarding radiation, IFOS took the initiative to start testing fish oil for radiation. IFOS will now test fish oil samples against more stringent criteria than the guidelines set by the FDA, Health Canada, and CODEX. Fortunately, so far the testing is not showing radiation to be a concern in most fish oils, but IFOS is remaining vigilant to make sure.

Summary

Only when a product can pass ALL of the categories mentioned previously, will it achieve a Five-Star rating. Thus, consumers would be wise to make sure the fish oil they are taking is one that has a lot-specific COA and has also been awarded a Five-Star rating by IFOS. This is a powerful combination of quality testing to help assure the potency and purity of a fish oil product.

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

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

Ceramides are essential for preserving healthy-looking skin.\(^1\,^2\) They play an important role in maintaining the skin’s moisture balance and protecting the skin’s surface.\(^3\)

Unfortunately, your body’s production of ceramides declines with age.\(^4\) Many anti-aging face creams include ceramides. The problem is that topical application cannot penetrate deeply enough to have a long-term impact on your skin’s appearance.

Restoring Youthful Ceramide Levels

Researchers have discovered that the ceramides naturally produced by young skin are identical to those present in wheat—and that these wheat-derived oils can be taken orally.

Skin Restoring Phytoceramides with Lipowheat\(^\circledR\) can reach the deepest layers of skin all over the body—not just where creams are applied—where it can offset the visible impact of the body’s gradual decline in ceramides. The hydrating action of Lipowheat\(^\circledR\) ceramides has proved effective in clinical trials.

Just One Capsule Daily

Life Extension\(^\circledR\) has brought together these skin-nourishing oils in a concentrated oral formula called Skin Restoring Phytoceramides with Lipowheat\(^\circledR\).

References

Non-GMO
Contains wheat. Gluten-free.
Lipowheat\(^\circledR\) is a registered trademark of Arco, Robertet Group, France.

Skin Restoring Phytoceramides with Lipowheat\(^\circledR\)
Item #01596 • 30 vegetarian liquid capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$25</td>
<td>$18.75</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$17.25 each</td>
</tr>
</tbody>
</table>

To order Skin Restoring Phytoceramides with Lipowheat\(^\circledR\)
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.
Jump Start Your Weight-Loss Program with Mediterranean Trim

People today pursue diets to lose weight, often with unsatisfactory results. A Mediterranean diet and a lifestyle can not only make you look and feel great but help you live longer and healthier.

**Jump-Start Your Weight-Loss Program**

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

Studies reveal that biologically active flavonoids from Mediterranean citrus fruits and South American seed extracts initiate a chain of events that helps support the function of this fat-removing cellular enzyme. Clinical research demonstrates that taking 450 mg twice daily at breakfast and lunch for 12 weeks resulted in a 5.8-pound weight loss on average and a 6.6% greater reduction in body fat, while placebo subjects experienced no significant weight or body fat loss. The extract group also lost on average two inches off their waist and hip circumference.

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

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

**Mediterranean Trim: Low-Cost Support For Healthy Weight Management**

Mediterranean Trim contains a synergistic blend of polyphenolic compounds specially selected from potent Mediterranean citrus fruits that have been shown to aid in the breakdown of stored body fat. Mediterranean Trim also contains an extract from the Brazilian guarana seed that has been shown to reduce localized fat deposits via similar mechanisms.

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

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

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

**Mediterranean Trim with Sinetrol™-XPur**

<table>
<thead>
<tr>
<th>Item #01908 • 60 vegetarian capsules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Price</td>
</tr>
<tr>
<td>1 bottle</td>
</tr>
<tr>
<td>4 bottles</td>
</tr>
</tbody>
</table>

To order Mediterranean Trim with Sinetrol™-XPur, 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.
AVOCADOS
Super-Enhanced Carotenoid Absorption

While most people think of avocado as simply the main ingredient in guacamole, it is certainly a superfood in its own right. The avocado is rich in monounsaturated fatty acids—including the powerful oleic acid also found in olive oil—and in fiber, folate, glutathione, phytosterols, flavonoids, and carotenoids, which are the pigments found in plants that contain a wealth of health benefits. In fact, this creamy, green fruit is packed with a host of different carotenoids, ranging from alpha-carotene to zeaxanthin, while also including lesser-known beneficial carotenoids such as neochrome.

Most importantly, the amount and combination of dietary fats found in avocado, as well as its abundant supply of oleic acid, provide optimal absorption of carotenoids—not just the carotenoids found in the avocado itself, but also the carotenoids found in other foods eaten at the same time.¹

Exciting research indicates that the avocado’s rich content of carotenoids, fatty acids, and other nutrients promote joint, eye, and skin health and help prevent cancer, cardiovascular disease, metabolic syndrome, and obesity.
Also in high supply in avocado are the following:
- Phytosterols, including beta-sitosterol, stigmasterol, and campesterol,
- Non-carotenoid antioxidants, including the flavonoids epicatechin and epigallocatechin 3-0-gallate, vitamins C and E, and the minerals manganese, selenium, zinc, and boron,
- The omega-3 fatty acid, alpha-linolenic acid (about 160 mg per cup of sliced avocado),
- Polyhydroxylated fatty alcohols, and
- Glutathione, a tripeptide compound.

However, the greatest nutritional punch from avocado derives from its spectacular array of carotenoids, which scavenge free radicals and play an important role in eye health. Scientists believe that this carotenoid diversity is a key factor in avocado’s anti-inflammatory properties.4

When hearing of carotenoids, many people think of bright orange or red vegetables such as carrots or tomatoes. But the green pulp of avocado contains an assortment of carotenoids that includes:4
- Alpha-carotene,
- Beta-carotene,
- Beta-cryptoxanthin,
- Chrysanthenaxanthin,
- Lutein,
- Neochrome,
- Neoxanthin,
- Violaxanthin, and
- Zeaxanthin.

In fact, the lutein content of the California Hass avocado (Persea americana Mill.) was found to be the highest among all commonly eaten fruits.5

Furthermore, carotenoid absorption from avocado is enhanced by its fatty acid profile. The high content of oleic acid is a crucial element of this enhancement. Within the digestive tract, oleic acid promotes the formation of chylomicrons, which are transport molecules that carry carotenoids up into the body.4

An impressive 80% of avocado is dietary fiber, of which 70% is insoluble and 30% is soluble. The average serving is half an avocado, which provides a full 4.6 grams of fiber.2

Avocado is particularly abundant in oleic acid, a monounsaturated fatty acid that has been found to be the potent compound in olive oil responsible for its blood pressure-reducing effects.3

Critically, avocado also contains a high supply of other monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA). The oil of avocado consists of 71% MUFA, 13% PUFA, and 16% saturated fatty acids—a profile that has been shown to help “promote healthy blood lipid profiles and enhance the bioavailability of fat-soluble vitamins and phytochemicals from the avocado or other fruits and vegetables, naturally low in fat, which are consumed with avocados.”2 It is not necessary to consume avocado oil to benefit from these potent fatty acids; researchers comparing avocado with avocado oil have found that the fruit matrix of the avocado pulp has no negative effect on lipid release.1

In one phase of this clinical study, either one cup (150 grams) of fresh avocado or 24 grams of avocado oil was added to a simple salad of romaine lettuce, spinach, and carrots that was consumed by the volunteers in one half of the crossover cycle, while the other half consumed avocado-free salads. In each case, the absorption of carotenoids was measured and compared nine-and-a-half hours after consumption. After eating the salad with added avocado, absorption of alpha-carotene increased 720%; absorption of beta-carotene increased 1,530%; and absorption of lutein increased 510%, compared to ingesting the avocado-free salad.
If you want to get the maximum nutrition from avocados, ensure that you eat them very ripe and peel them correctly, using what is known as the nick-and-peel method. Research shows that the highest concentration of carotenoids in an avocado lies immediately below the peel.

So for optimum benefits from this super food, follow these steps:

Do not eat avocado when the outer peel is still green. If the peel on the avocado you bring home is green, do not refrigerate them. Store them at room temperature in a fruit basket or a brown paper bag until the peel has turned very dark greenish-black—but well before it begins to crack. If the avocado is ripe, the flesh will be definite green instead of a yellowish-green.

Once the peel has turned dark, it can be eaten right away or refrigerated for up to a week. If storing in the fridge, it is best to store avocados whole, because the green flesh quickly becomes oxidized when exposed to air and turns brown.

When eating a ripe avocado—with a greenish black peel—the best way to ensure that you do not lose the carotenoid-rich flesh just beneath the peel is to use what the California Avocado Commission calls the “nick-and-peel” method.

The complementary effects of avocado’s nutrients—carotenoid abundance and variety, beneficial fatty acid content and profile, phytosterols, non-carotenoid antioxidants, omega-3 fats, and polyhydroxylated fatty alcohols—have an ability to inhibit unwanted inflammation that is unquestioned among health researchers. Avocado’s phytosterols (stigmasterol, campesterol, and beta-sitosterol) are believed to help prevent excess synthesis of pro-inflammatory PGE2 by the connective tissue. These effects help to explain avocado’s ability to help prevent osteoarthritis and rheumatoid arthritis.

Cartilage defects are an early indicator of osteoarthritis, the most common of joint disorders. They develop when inflammation and oxidative stress trigger cartilage deterioration.

Scientists reporting in Arthritis Research and Therapy found that consumption of fruits and vegetables rich in lutein and zeaxanthin—two key carotenoids in avocado—are associated with decreased risk of cartilage defects.

In other studies, certain avocado extracts known as unsaponifiables have been shown to improve osteoarthritis pain and overall disability in people with...
In other research, diets rich in monounsaturated fatty acid—found in avocado—were shown to be protective of age-related eye dysfunction.2

Avocado’s Cancer-Blocking Ability

According to researchers, the same lutein and zeaxanthin content that enables avocado to protect eye health also inhibits Helicobacter pylori—a bacterium associated with development of stomach cancer.13

Higher intakes of glutathione—found abundantly in avocado—have been associated with a decreased risk of oral cancer. This anticancer effect is believed to derive from glutathione’s ability to neutralize oxidants and bind with cellular mutagens. Surprisingly, this reduction in oral cancer risk was only observed when the glutathione was derived from fruit or vegetables commonly consumed raw, as is usually the case with avocado.14

An acetone extract of avocado, containing carotenoids and tocopherols, was found to inhibit, in vitro, the growth of both androgen-dependent (LNCaP) and androgen-independent (PC-3) prostate cancer cell lines. Also, scientists suggested that the monounsaturated fat-boosted absorption of avocado’s carotenoids into the blood stream is likely to combine with other diet-derived phytochemicals to contribute to the significant cancer risk reduction commonly associated with a diet high in fruits and vegetables.5

Scientists have shown that phytochemicals extracted from avocado selectively induce cell cycle arrest, inhibit growth, and trigger apoptosis in both precancerous and cancer cell lines. Several studies indicate that avocado-extracted phytochemicals promote proliferation of human lymphocyte cells and decrease chromosomal aberrations, such as chromosomal breaks.15

Avocado’s boron content also plays a role. Research shows boron can shrink prostate tumor size, lower PSA, and potentially help to prevent prostate cancer. Men who ingested the greatest amount of boron were found to be 64% less likely to develop prostate cancer compared to men who consumed the least amount of boron.16

Protection Against Cardiovascular Disease

Avocado is an excellent source of fiber and folate, both associated with cardiovascular system protection. Epidemiological and clinical studies suggest that fiber reduces levels of LDL cholesterol and that...
folic acid helps decrease high homocysteine levels, a well-known risk factor for heart disease. Also, the phytosterols in avocado are structurally similar to cholesterol and act in the intestine to inhibit cholesterol absorption.13

Monounsaturated fatty acids—found in extremely rich supply in avocado—have been shown to reduce total cholesterol levels. In one study in the *American Journal of Clinical Nutrition*, scientists compared the effects of an avocado-enriched diet high in monounsaturated fatty acids with a diet high in complex carbohydrates. After three weeks, the avocado diet lowered total cholesterol by 8.2%, while the complex carbohydrate diet decreased total cholesterol by only 4.9%. The avocado diet also decreased LDL cholesterol levels, while the complex carbohydrate diet did not.17

In a study published in 2015, a research team compared three diets: a low-fat diet (24% fat), and two moderate-fat diets (34%). The moderate-fat diets were almost identical except that one included an avocado per day while the other provided a similar amount of oleic acid from other sources such as olive oil. The low-fat diet reduced LDL cholesterol by 7.4 mg/dL, and the non-avocado moderate-fat diet reduced LDL by 8.3 mg/dL—but the avocado diet slashed LDL by 13.5 mg/dL.18

**Metabolic Syndrome And Weight Maintenance**

An epidemiological study found avocado consumption to be associated with improved overall diet quality, nutrient intake, and reduced risk of metabolic syndrome.19 Monounsaturated fatty acids—robustly found in avocado—have been linked to the maintenance of glycemic control among type II diabetic patients. Researchers found that avocado can provide preventive effects against both obesity and diabetes.20

Scientists have found that avocados have a medium-level of energy density (1.7 calories per gram) and a matrix of viscous water, dietary fiber, and fruit oil—both of which promote a feeling of fullness that may benefit overweight individuals.21

More remarkable, a key monounsaturated fat in avocado acts directly on the brain as a natural hunger suppressant. Oleic acid, when it reaches the small intestine, converts into oleylethanolamide (OEA), a lipid compound that activates a brain area responsible for greater feelings of satiety. This compound modulates feeding, body weight, and lipid metabolism.22,23

A randomized, single-blind crossover study of 26 healthy overweight adults that was published...
in *Nutrition Journal* demonstrated that, compared to a control meal, half of a Hass avocado eaten at lunch significantly reduced self-reported hunger and desire to eat and boosted satiety over the five-hour period after lunch.24

## Slower Skin Aging

Internal health benefits aside, avocado may deliver skin beautifying effects. The concentration of carotenoids in the skin is directly linked to the level of fruit and vegetable consumption. Specifically, a higher intake of vegetables that are yellow or green—such as avocado—has been associated with significantly fewer skin wrinkles.2

The monounsaturated fatty acids abundant in avocado moisturize skin from the inside. Its vitamin E, carotenoid, and glutathione scavenger free radicals, which can prematurely age and wrinkle the skin. Preclinical studies suggest that avocado compounds, including its polyhydroxylated fatty alcohols, can protect skin health by promoting wound healing and inhibiting UV damage. Avocado’s highly bioavailable carotenoids lutein and zeaxanthin may help also protect the skin from damage from both UV and visible radiation.2

### Summary

The avocado is rich in monounsaturated fatty acids, a diverse array of carotenoids, fiber, folate, glutathione, and phytosterols. Critically, the amount and combination of dietary fats in avocado provide optimal absorption of carotenoids—not just the carotenoids found in the avocado itself, but also the carotenoids found in other foods eaten at the same time. Research demonstrates that avocado’s unique nutrient profile promotes joint, eye, and skin health and helps prevent cancer, cardiovascular disease, metabolic syndrome, and obesity.

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

### References


Blueberry Extract Boosts DNA Function

Studies show that blueberries delay the aging process through a variety of mechanisms, including maintaining healthy DNA structure and favorably modulating genes associated with aging.¹²

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

• Enhance heart health¹
• Maintain brain function²,³
• Sustain healthy blood sugar levels already within normal range⁴
• Support smooth firm skin⁷
• Maintain a healthy weight⁵ and stable cholesterol levels already within normal range⁹

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

Blueberry Extract Capsules
Item #01214 • 60 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$22.50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$15 each</td>
</tr>
</tbody>
</table>

Suggested dose is one capsule daily. Each bottle lasts two months.

References

Non-GMO
AuroraBlue® is a registered trademark of Denali BioTechnologies, Inc.

To order Blueberry Extract Capsules, call 1-800-544-4440 or visit www.LifeExtension.com

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

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

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

For Our Local 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.

### Blood Testing

#### The Ultimate Information

**COMPREHENSIVE PANELS**

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALE LIFE EXTENSION PANEL (LC225582)</strong></td>
<td>$269</td>
</tr>
<tr>
<td>Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: C-Reactive Protein, DHE-A-S, Homocysteine, TSH for thyroid function Free Testosterone, Estradiol, Total Testosterone, Vitamin D 25-hydroxy, PSA (prostate-specific antigen), Hemoglobin A1c.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FEMALE LIFE EXTENSION PANEL (LC322535)</strong></td>
<td>$269</td>
</tr>
<tr>
<td>Chemistry Profile includes glucose, cholesterol, LDL, HDL, triglycerides, liver and kidney function tests PLUS 20 additional tests. CBC includes immune (white) cell count, red blood cell count and platelet count. Also includes: C-Reactive Protein, DHE-A-S, Homocysteine, TSH for thyroid function Free Testosterone, Estradiol, Total Testosterone, Progesterone, Vitamin D 25-hydroxy, Hemoglobin A1c.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WEIGHT LOSS PANEL-COMPREHENSIVE (LC100029)</strong></td>
<td>$275</td>
</tr>
<tr>
<td>CBC/Chemistry profile (see description at right), DHE-A-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.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>MALE ELITE PANEL</em> (LC100016)</em>*</td>
<td>$575</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>FEMALE ELITE PANEL</em> (LC100017)</em>*</td>
<td>$575</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MALE HORMONE ADD-ON PANEL (LCADDMP)</strong></td>
<td>$120</td>
</tr>
<tr>
<td>Pregnenalone and Dihdrotestosteron (DHT) To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the male Life Extension Panel. This panel provides valuable information about a testosterone metabolite that can affect the prostate, and the mother hormone that acts as a precursor to all other hormones.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FEMALE HORMONE ADD-ON PANEL (LCADDAP)</strong></td>
<td>$125</td>
</tr>
<tr>
<td>Pregnenalone and Total Estrogens To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides valuable information about total estrogen status, and the mother hormone that acts as a precursor to all other hormones.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LIFE EXTENSION THYROID PANEL (LC304131)</strong></td>
<td>$75</td>
</tr>
<tr>
<td>TSH, Free T4, Free T3.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>FEMALE COMPREHENSIVE HORMONE PANEL</em> (LC100001)</em>*</td>
<td>$299</td>
</tr>
<tr>
<td>CBC/Chemistry profile (see description above right), DHE-A-S, Estradiol, Progesterone, Pregnenalone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.</td>
<td></td>
</tr>
</tbody>
</table>

### MOST POPULAR PANELS

All of the blood test prices you see here are 25% off retail.

- **MALE COMPREHENSIVE HORMONE PANEL**
  - Price: $299
  - Description: CBC/Chemistry profile (see description above right), DHE-A-S, Estradiol, HRT, PSA, Pregnenalone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.

- **THE CBC/CHEMISTRY PROFILE**
  - Price: $35
### Other Popular Tests and Panels

<table>
<thead>
<tr>
<th>Test Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTRIENT PANEL* (LC100024)</td>
<td>$49</td>
</tr>
<tr>
<td>Vitamin B12, Folate, Vitamin D 25-hydroxy, Vitamin C, Vitamin A, Selenium, Zinc, CoQ10, and RBC Magnesium.</td>
<td></td>
</tr>
<tr>
<td>CHRONIC FATIGUE PROFILE (LC100005)</td>
<td>$375</td>
</tr>
<tr>
<td>CBC/Chemistry Profile (see description previous page), Epstein–Barr Virus antibodies (IgG and IgM), Cytomegalovirus Antibodies (IgG and IgM), Ferritin, Total and Free Testosterone, DHEA-S, Free T3, Free T4, Cortisol, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Insulin.</td>
<td></td>
</tr>
<tr>
<td>ANEMIA PANEL* (LC100006)</td>
<td>$79</td>
</tr>
<tr>
<td>CBC/Chemistry Profile (see description previous page), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.</td>
<td></td>
</tr>
<tr>
<td>AUTOIMMUNE DISEASE SCREEN* (L100041)</td>
<td>$199</td>
</tr>
<tr>
<td>ANA screen, hs-CRP, TNF, Immunoglobulins, IgA, IgG, IgM.</td>
<td></td>
</tr>
<tr>
<td>DIABETES MANAGEMENT PROFILE – COMPREHENSIVE (LC100040)</td>
<td>$129</td>
</tr>
<tr>
<td>DIABETES MANAGEMENT PROFILE – BASIC (LC100039)</td>
<td>$39</td>
</tr>
<tr>
<td>Hemoglobin A1C, Glucose, Insulin.</td>
<td></td>
</tr>
<tr>
<td>ADVANCED CARDIAC BIOMARKERS</td>
<td>$285</td>
</tr>
<tr>
<td>ADVANCED OXIDIZED LDL PANEL* (LC100035)</td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>OXIDIZED LDL PANEL* (LC100034)</td>
<td>$175</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>OXIDIZED LDL* (LC817472)</td>
<td>$75</td>
</tr>
<tr>
<td>OxLDL is a powerful initiator of inflammatory changes in the artery wall, which eventually lead to the formation of plaque.</td>
<td></td>
</tr>
<tr>
<td>HORMONES</td>
<td></td>
</tr>
<tr>
<td>DHEA-SULFATE (LC004020)</td>
<td>$61</td>
</tr>
<tr>
<td>This test shows if you are taking the proper amount of DHEA. This test normally costs $100 or more at commercial laboratories.</td>
<td></td>
</tr>
<tr>
<td>MALE BASIC HORMONE PANEL (LC100012)</td>
<td>$75</td>
</tr>
<tr>
<td>DHEA-S, Estradiol, Free and Total Testosterone, PSA.</td>
<td></td>
</tr>
<tr>
<td>FEMALE BASIC HORMONE PANEL (LC100013)</td>
<td>$75</td>
</tr>
<tr>
<td>DHEA-S, Estradiol, Free and Total Testosterone, Progesterone.</td>
<td></td>
</tr>
<tr>
<td>OXYDROTESTOSTERONE (DHT)* (LC500142)</td>
<td>$50</td>
</tr>
<tr>
<td>Measures serum concentrations of DHT.</td>
<td></td>
</tr>
<tr>
<td>ESTRADIOL (LC004515)</td>
<td>$33</td>
</tr>
<tr>
<td>For men and women. Determines the proper amount in the body.</td>
<td></td>
</tr>
<tr>
<td>INSULIN FASTING (LC004333)</td>
<td>$29.90</td>
</tr>
<tr>
<td>Can predict those at risk of diabetes, obesity, heart and other diseases.</td>
<td></td>
</tr>
<tr>
<td>PREGNENOLONE* (LC140707)</td>
<td>$116</td>
</tr>
<tr>
<td>Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushings’s syndrome.</td>
<td></td>
</tr>
<tr>
<td>PROGESTERONE (LC004317)</td>
<td>$55</td>
</tr>
<tr>
<td>Primarily for women. Determines the proper amount in the body.</td>
<td></td>
</tr>
<tr>
<td>SEX HORMONE BINDING GLOBULIN (SHBG) (LC002016)</td>
<td>$33</td>
</tr>
<tr>
<td>This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens.</td>
<td></td>
</tr>
<tr>
<td>GENERAL HEALTH</td>
<td></td>
</tr>
<tr>
<td>VITAMIN D (25OH) (LC0081950)</td>
<td>$47</td>
</tr>
<tr>
<td>This test is used to rule out vitamin D deficiency as a cause of bone disease. It can also be used to identify hypercalcemia.</td>
<td></td>
</tr>
<tr>
<td>FERRITIN (LC004596)</td>
<td>$28</td>
</tr>
<tr>
<td>Ferritin levels reflect your bodys iron stores and is also a biomarker for insulin resistance.</td>
<td></td>
</tr>
<tr>
<td>VITAMIN B12/FOLATE* (LC008810)</td>
<td>$39.68</td>
</tr>
<tr>
<td>Measurements of B12 and Folate help evaluate your general health and nutritional status since the B vitamins are important for cardiac health as well as energy production.</td>
<td></td>
</tr>
<tr>
<td>PSA (PROSTATE SPECIFIC ANTIGEN) (LC010322)</td>
<td>$31</td>
</tr>
<tr>
<td>Screening test for prostate disorders and possible cancer.</td>
<td></td>
</tr>
</tbody>
</table>

### Other Popular Tests and Panels

**Blood tests available in the continental United States only. Restrictions apply in NY, NJ, PA, RI, and MA. Not available in Maryland.**

### 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.**

- Male  
- Female

**Name**

- Date of Birth (required)  

**Address**

- City  

**State**  

**Zip**

**Phone**

**Credit Card No.**

**Expiration Date**  

**Mail your order form to:**

LifeExtension 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

With Your Healthy Rewards, you earn LE Dollars back on every purchase you make — including blood tests! See www.LifeExtension.com/Rewards for details.

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

** This test is packaged as a kit, requiring a finger stick performed at home.
**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
- Blood Pressure Monitor Arm Cuff
- Endothelial Defense™ with Full-Spectrum Pomegranate™ and CORDIART™
- Endothelial Defense™ with GluSODIn
- Full-Spectrum Pomegranate™
- Natural BP Management
- NitroVasc with Cordiart
- Pomegranate Extract Capsules

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

**Books and Media**
- CR Way Edition Advanced Dietary Software

**Brain Health**
- Acetyl-L-Carnitine
- Acetyl-L-Carnitine Arginate
- Blast
- Brain Shield® Gastrodin
- Cognitex® Basics
- Cognitex® with Brain Shield®
- Cognizin® CDP-Choline Caps
- DMAE Bitartrate (dimethylaminoethanol)
- Ginkgo Biloba Certified Extract™
- Huperzine A
- Lecithin Granules
- MigrA-Ease®
- MigrA-Mag with Brain Shield®
- Neuro-Mag® Magnesium L-Theionate
- Neuro-Mag® Magnesium L-Theionate with Calcium and Vitamin D3
- Optimized Ashwagandha Extract
- PreVagen™ (Phosphatidylserine) Caps
- Super Ginkgo Extract 28/7
- Vinpocetine

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

**Digestion Support**
- Artichoke Leaf Extract
- Carnossothe with PicromProtect™
- Digest RC®
- Effervescent Vitamin C - Magnesium Crystals
- Enhanced Super Digestive Enzymes
- Esophageal Guardian
- Extraordinary Enzymes
- Fem Dophilus

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

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

**Fish Oil & Omegas**
- EPA/DHA
- 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, Kili & Astaxanthin
- Organic Golden Flax Seed
- Proven® Purified Omega-7
- Vegetarian Sourced DHA

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

**Glucose Management**
- CinSulin® with InSea3® and Crominrex® 3+ CoffeeGenic® Green Coffee Extract
- Glycation Protection Formula
- Mega Benfotiamine
- Natural Glucose Absorption Control
- Tri Sugar Shield®

**Heart Health**
- Aspirin (Enteric Coated)
- Cardio Peak® with Standardized Hawthorn and Arjuna
- Fibrinogen Resist™ with Nattokinase
- Folate & Vitamin B12 Caps
- Optimized Carnitine with GlycoCam®
- 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 Lozenges
- 26 Hyperimmune Egg
- Immune Modulator with Tinofend®
- Immune Protect with PARACTIN®
- Immune Senescence Protection Formula™
- Kyolic® Garlic Formula 102
- Kyolic® Garlic Formula 105
- Kyolic® Reserve
- Lactoferin (apolaactoferrin) 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 with Bio-Curcumin®
- Black Cumin Seed Oil
- Boswellia
- Cytokine Supress™ with EgcG
- Nervia®
- Serrafreeze
- 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®
- 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™
- Water-Soluble Pumpkin Seed Extract

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

**Longevity & Wellness**
- AMPK Activator
- AppleWise Polyphenol Extract
- Berry Complete
- Blueberry Extract
- Blueberry Extract with Pomegranate
- CR Mimetic Longevity Formula
DNA Protection Formula
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 with NAD+
Cell Regenerator™
Optimized Resveratrol with Synergistic Grape-Berry Actives
pTeroPure®
Pycnogenol® French Maritime Pine Bark Extract
Resveratrol with Pterostilbene
RNA (Ribonucleic Acid)
Super Alpha-Lipoic Acid
Super R-Lipoic Acid
Wholesale Grape Extract

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

Minerals
Boron
Chromium Ultra MK
Copper
Iron Protein Plus
Magnesium (Citrate)
Magnesium Caps
Only Trace Minerals
Optimized Chromium with Cremix® 3+ Sea-Iodine™
Se-Methyl L-Selenocysteine
Super Selenium Complex
Vanadyl Sulfate
Zinc Caps

Miscellaneous
Advanced Iodine Complete
Potassium Iodide
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
Life Extension Mix™ Tablets with Extra Niacin
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
Advanced Oral Hygiene
Anti-Aging Rejuvenating Scalp Serum
Biosil
Dr. Proctor’s Advanced Hair Formula
Dr. Proctor’s Shampoo
European Leg Solution Featuring Certified Diosmin 95
Face Master Platinum
Facial Toning System

Pet Care
Cat Mix
Dog Mix

Probiotics
Bifido GI Balance
FlorAssist® Heart Health Probiotic
FlorAssist®
Jarro-Dophilus EPS®
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 Face Cream
Anti-Glycation Serum with Blueberry & Pomegranate Extracts
Antioxidant Facial Mist
Anti-Oxidant Rejuvenating Foot Cream
Anti-Oxidant Rejuvenating Foot Scrub
Anti-Oxidant Rejuvenating Hand Cream
Anti-Redness & Adult Blemish Lotion
Bioflavonoid Cream
Broccoli Sprout Cream
Collagen Boosting Peptide Serum
Corrective Clearing Mask
DNA Repair Cream
Dual-Action MicroDermAbrasion
Enhanced FernBlock® with Red Orange Complex
Essential Plant Lipids Reparative Serum
Face Rejuvenation 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
Hydromer
Lifting & Tightening Complex
Lycopene Cream
Melatonin Cream
Mild Facial Cleanser
Neck Rejuvenating Anti-Oxidant Cream
Pigment Correcting Cream
Rejuvenating Serum
Rejuvenex® Body Lotion
Rejuvenex® Factor Firming Serum
Renewing Eye Cream
Resveratrol Anti-Oxidant Serum
Skin Lightening Serum
Skin Rejuvening Phytoceamides with Lipowheat®
Skin Stem Cell Serum
Stem Cell Cream with Alpine Rose
Tightening & Firming Neck Cream
Ultra Lip Plumper
Ultra Rejuvenex®
Ultra Rejuvenex Night®
Ultra Wrinkle Relaxer
Under Eye Refining Serum
Under Eye Rescue Cream
Vitamin C Serum
Vitamin D Lotion
Vitamin E-ssential Cream

Sleep
Bioactive Milk Peptides
Enhanced Natural Sleep® with Melatonin
Enhanced Natural Sleep® without Melatonin

Sports Performance
Creatine Capsules
Creatine Whey Glutamine Powder (Vanilla Flavor)
DMG (N,N-dimethylglycine)
New Zealand Whey Protein Concentrate,
(Chocolate and Vanilla Flavor)
Pure Plant Protein
Tart Cherry Extract
Whey Protein Isolate
(Chocolate and Vanilla Flavor)

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

Weight Management
7-Keto® DHEA Metabolite
Advanced Anti-Adipocyte Formula
Advanced Natural Appetite Suppress CalReduce Selective Fat Binder
DHEA Complete
Garcinia HCA
HCActive™ Garcinia Cambogia Extract
Integra-Lean®
Mediterranean Trim with Sinetrol™ XPur
Optimized Irvingia with Phase 3rd Calorie Control Complex
Optimized Saffron with Satiereal®
Super Citrimax®
Super CLA Blend with Guaraná and Sesame Lignans
Super CLA Blend with Sesame Lignans
Waist-Line Control™
Weight Management Formula

Women’s Health
Advanced Natural Sex for Women® 50+
Breast Health Formula
Fenmessence MacaPause®
Natural Estrogen without Soy Isoflavones
Natural Estrogen
Progesterone® for Women
Super-Absorbable Soy Isoflavones
Ultra Soy Extract
<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>01524</td>
<td>ACETYLCARNITINE 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>01525</td>
<td>ACETYLCARNITINE ARGINATE 100 veg. caps</td>
<td>$59.00</td>
<td>44.25</td>
<td>38.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01628</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>01828</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>01521</td>
<td>ADVANCED ORAL HYALURONIC 60 mint lozenges</td>
<td>$20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00681</td>
<td>AHCC 500 mg, 30 caps</td>
<td>$91.98</td>
<td>44.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00457</td>
<td>ALPHA-LIPOIC ACID W/BIOTIN (Super) 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>01440</td>
<td>ANTI-ALCOHOL ANTIOXIDANTS W/HEPATO Prep 100 caps</td>
<td>$26.00</td>
<td>19.50</td>
<td>17.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01509</td>
<td>ANTI-OXIDANTE FORMULA W/NERATRIM INTEGRALLEAN 60 veg. caps</td>
<td>$39.00</td>
<td>29.25</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01625</td>
<td>APPLE 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>01817</td>
<td>ARTHROMAX W/THAFLAVINS &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>01618</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>01404</td>
<td>ARTHRO-IMMUNE JOINT SUPPORT 60 veg. caps</td>
<td>$32.00</td>
<td>24.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00919</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>01533</td>
<td>ASCORBYL PALMITYL 500 mg, 100 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 veg. 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>01720</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>

<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>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/ACAI Enhanced 60 veg. 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 25000 IU, 100 softgels</td>
<td>$11.25</td>
<td>8.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01822</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>01073</td>
<td>BILBERRY EXTRACT 100 mg, 100 veg. caps</td>
<td>$42.00</td>
<td>31.50</td>
<td>28.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01512</td>
<td>BIOACTIVE MILK PEPTIDES 150 grams</td>
<td>$18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01831</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>01006</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>01007</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>01008</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>00700</td>
<td>BLOOD PRESSURE MONITOR ACCUFIT</td>
<td>$79.99</td>
<td>49.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00004</td>
<td>BLOOD PRESSURE MONITOR 60 Caps</td>
<td>$69.95</td>
<td>52.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01214</td>
<td>BLUEBERRY EXTRACT 60 veg. caps</td>
<td>$22.50</td>
<td>16.88</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 1**

<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>01438</td>
<td>BLUEBERRY EXTRACT W/POMERANATE 60 veg. caps</td>
<td>$30.00</td>
<td>22.50</td>
<td>20.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01506</td>
<td>BONE FORMULA OR STRUM’S INTENSIVE 300 caps</td>
<td>$56.00</td>
<td>42.00</td>
<td>37.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01726</td>
<td>BONE RESTORE 120 caps</td>
<td>$22.00</td>
<td>16.50</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01727</td>
<td>BONE RESTORE W/VITAMIN K2 120 caps</td>
<td>$24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01725</td>
<td>BONE STRENGTH FORMULA W/KDCT 120 caps</td>
<td>$45.00</td>
<td>33.75</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00313</td>
<td>BONE UP 240 caps</td>
<td>$28.95</td>
<td>21.71</td>
<td>20.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01661</td>
<td>BORON 3 mg, 100 veg. caps</td>
<td>$5.95</td>
<td>4.46</td>
<td>3.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00202</td>
<td>BOSWELLIA 100 caps</td>
<td>$38.00</td>
<td>28.50</td>
<td>25.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01820</td>
<td>BRAIN SHIELD GASTRODIN 300 mg, 60 veg. caps</td>
<td>$33.00</td>
<td>24.75</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01253</td>
<td>BRANCHED CHAIN AMINO ACIDS 90 caps</td>
<td>$19.50</td>
<td>14.63</td>
<td>12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01699</td>
<td>BREAST HEALTH FORMULA 60 caps</td>
<td>$34.00</td>
<td>25.50</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00983</td>
<td>BRUTE EYES III 2 vials, 5 ml each</td>
<td>$34.00</td>
<td>25.50</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01203</td>
<td>BROMELAIN (Specially-coated) 500 mg, 60 enteric coated tablets</td>
<td>$21.00</td>
<td>15.75</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 2**

**RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS**
## Item No. | PRODUCT
---|---
00119 | COPPER CAPSULES • 2 mg, 100 caps
00949 | COQ10 w/ LIMONENE (Super-absorbable) 50 mg, 60 softgels
00950 | COQ10 w/ LIMONENE (Super-absorbable) 100 mg, 100 softgels
01226 | COQ10 (Super ubiquinol) • 100 mg, 60 softgels
01733 | COQ10 w/ BIPQO (Super ubiquinol) • 100 mg, 30 softgels
01426 | COQ10 w/ ENH MITOCHONDRIAL SUPPORT (Super ubiquinol) 100 mg, 60 softgels
01425 | COQ10 w/ ENH MITOCHONDRIAL SUPPORT (Super ubiquinol) • 50 mg, 100 softgels
01427 | COQ10 w/ ENH MITOCHONDRIAL SUPPORT (Super ubiquinol) • 200 mg, 30 softgels
01431 | COQ10 w/ ENH MITOCHONDRIAL SUPPORT (Super ubiquinol) • 100 mg, 60 softgels
00862 | CRAN-MAX® • 500 mg, 60 veg. caps
01424 | CRAN-MAX® WITH ELLIPOSE (Optimized) • 60 veg. caps
01529 | CREATINE CAPSULES • 120 veg. caps
01746 | CREATINE WHEY GLUTAMINE POWDER • 454 grams (vanilla)
01429 | CR MIMETIC LONGEVITY FORMULA • 60 veg. caps
*3840 | CRWY GREAT GLUCOSE CONTROL CD
*CRWY | CR WY OPTIMAL HEALTH PROGRAM SOFTWARE
00407 | CUMCURMIN® (Super bio) • 400 mg, 60 veg. caps
01808 | CUMCUMIN® W/ GINGER & TURMEROINES (Advanced bio) 30 softgels
01804 | CYTOKINE SUPPRESS™ W/ESCG • 30 veg. caps

### COSMETICS

<table>
<thead>
<tr>
<th>Item No.</th>
<th>PRODUCT</th>
</tr>
</thead>
</table>
80154 | ADVANCED LIGHTENING CREAM • 1 oz |
80155 | ADVANCED PEPTIDE HAND THERAPY • 4 oz |
80152 | ADVANCED TRIPLE PEPTIDE SERUM • 1 oz |
80140 | ADVANCED UNDER EYE SERUM W/STEM CELLS • .33 oz |
80139 | AMBER SELF MICRODERMABRASIION • 2 oz |
80158 | ANTI-AGING FACE OIL • 1 oz |
80118 | ANTI-AGING MASK • 2 oz |
80151 | ANTI-AGING REJUVENATING FACE CREAM • 2 oz |
80153 | ANTI-AGING REJUVENATING SCALP SERUM • 2 oz |
80157 | ANTI-GLYCATION PEPTIDE SERUM • 1 oz |
80134 | ANTI-GLYCOLIC SERUM W/ BLUEBERRY & POMEGRANATE EXTRACTS • 1 oz |
80133 | ANTIOXIDANT FACIAL MIST • 2 oz |
80127 | ANTIOXIDANT REJUVENATING FOOT CREAM • 2 oz |
80128 | ANTIOXIDANT REJUVENATING FOOT SCRUB • 2 oz |
80117 | ANTIOXIDANT REJUVENATING HAND CREAM • 2 oz |
80105 | ANTI-REDNESS & ADULT BLEMISH LOTION • 1 oz |
80147 | BIOFLAVONOID CREAM • 1 oz |
80144 | BROCCOLI SPIRUT CREAM • 1 oz |
80156 | COLLAGEN BOOSTING PEPTIDE SERUM • 1 oz |
80120 | CORRECTIVE CLEARING MASK • 2 oz |
80141 | DNA REPAIR CREAM • 1 oz |
80108 | ESSENTIAL PLANT LIPIDS REPARATIVE SERUM • 1 oz |

**SUB-TOTAL OF COLUMN 3**

**SUB-TOTAL OF COLUMN 4**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>PRODUCT</th>
</tr>
</thead>
</table>
80123 | FACE REJUVENATING ANTIOXIDANT CREAM • 2 oz |
80107 | FINE LINE-LESS • 1 oz |
80131 | HAIR SUPPRESS FORMULA • 4 oz |
80137 | HEALING FORMULA ALL-IN-ONE CREAM • 1 oz |
80115 | HEALING MASK • 2 oz |
80102 | HEALING VITAMIN K CREAM • 1 oz |
80109 | HYALURONIC FACIAL MOISTURIZER • 1 oz |
80110 | HYALURONIC OIL-FREE FACIAL MOISTURIZER • 1 oz |
80138 | HYDRATING ANTIOXIDANT FACE MIST • 4 oz |
80103 | LIFTING & TIGHTENING COMPLEX • 1 oz |
80146 | Lycopene CREAM • 1 oz |
80135 | MEATONIN CREAM • 1 oz |
80114 | MILD FACIAL CLEANSER • 8 oz |
80112 | NECK REJUVENATING ANTIOXIDANT CREAM • 2 oz |
80111 | PIGMENT CORRECTING CREAM • 1/2 oz |
80106 | REJUVENATING SERUM • 1 oz |
80150 | RENEWING EYE CREAM • 1/2 oz |
80142 | RESVERATROL ANTI-OXIDANT SERUM • 1 oz |
80112 | SKIN LIGHTENING SERUM • 1/2 oz |
80130 | SKIN STEM CELL SERUM • 1 oz |
80143 | STEL CELL CREAM W/ALPINE ROSE • 1 oz |
80148 | TIGHTENING & FIRMING NECK CREAM • 2 oz |
80116 | ULTRA LIP PLUMPER • 1/3 oz |
80101 | ULTRA WRINKLE RELAXER • 1 oz |
80113 | UNDER EYE REFINING SERUM • 1/2 oz |
80104 | UNDER EYE RESCUE CREAM • 1 oz |
80129 | VITAMIN C SERUM • 1 oz |
80138 | VITAMIN D LOTION • 4 oz |
80145 | VITAMIN E-ESSENTIAL CREAM • 1 oz |
80149 | YOUTH SERUM • 1 oz |

**D**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>PRODUCT</th>
</tr>
</thead>
</table>
01912 | DAILY C+ CITRUS FLAVOR • 30 stick packs |
00658 | 7-KETO® DHEA METABOLITE • 25 mg, 100 veg. caps |
01479 | 7-KETO® DHEA METABOLITE • 100 mg, 60 veg. caps |
01640 | DNA (Vegetarian sourced) • 30 veg. softgels |
00607 | DHEA • 25 mg, 100 tablets (Dissolve in mouth) |
01478 | DHEA COMPLETE • 60 veg. caps |
00335 | DHEA • 25 mg, 100 caps |
00454 | DHEA • 15 mg, 100 caps |
00882 | DHEA • 50 mg, 60 caps |
01689 | DHEA • 100 mg, 60 veg. caps |
01358 | DIGEST RC® • 30 tablets |
01272 | DIGESTIVE ENZYMES (Enhanced Super) • 100 veg. caps |
01671 | D.L-PHENYLALANINE • 500 mg, 100 veg. caps |
01540 | DMAE BITARTRATE • 150 mg, 200 veg. caps |
00059 | DMG • 125 mg, 60 tablets |

**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>GY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01570</td>
<td>DNA PROTECTION FORMULA • 60 veg. caps</td>
<td>34.00</td>
<td>25.50</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01831</td>
<td>DOG MIX • 100 grams powder</td>
<td>18.00</td>
<td>13.50</td>
<td>11.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00321</td>
<td>DR. PROCTOR’S ADVANCED HAIR FORMULA • 2 oz</td>
<td>39.95</td>
<td>29.96</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00320</td>
<td>DR. PROCTOR’S HAIR SHAMPOO • 8 oz</td>
<td>24.95</td>
<td>18.71</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00898</td>
<td>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE • 2.4 oz</td>
<td>39.95</td>
<td>29.96</td>
<td>29.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01528</td>
<td>ECHINACEA EXTRACT • 250 mg, 60 veg. caps</td>
<td>14.35</td>
<td>10.76</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01997</td>
<td>ENDOTHelial DEFENSE™ W/FULL-SPECTRum POMEgranATE™ AND CORDiART™ • 60 softgels</td>
<td>68.00</td>
<td>51.00</td>
<td>46.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00997</td>
<td>ENDOTHelial DEFENSE™ W/GLISODIN® • 60 veg. caps</td>
<td>54.00</td>
<td>40.50</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00625</td>
<td>EPA/DHA (Mega) • 120 softgels</td>
<td>19.95</td>
<td>14.96</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01737</td>
<td>ESOPHAGEAL GUARDIAN (Berry flavor) • 60 chewable tablets</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01042</td>
<td>EUROPEAN LEG SOLUTION DIOSMhydrin 95 • 600 mg, 30 veg. tabs</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01706</td>
<td>EXTRAORDINARY ENZYMES • 60 caps</td>
<td>26.00</td>
<td>19.50</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01514</td>
<td>EYE PRESSURE SUPPORT W/MIRTGENOL® • 30 veg. caps</td>
<td>38.00</td>
<td>28.50</td>
<td>25.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00154</td>
<td>FACE MASTER® PLATINUM • Facial Toning System</td>
<td>199.00</td>
<td>199.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00965</td>
<td>FAST-ACTING JOINT FORMULA • 30 caps</td>
<td>39.00</td>
<td>29.25</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01717</td>
<td>FAST-C® W/DIHYDROQUERCETIN • 120 veg. tabs</td>
<td>26.00</td>
<td>19.50</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02053</td>
<td>FEM DOPHILUS® • 30 caps</td>
<td>25.95</td>
<td>19.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02055</td>
<td>FEM DOPHILUS® • 60 caps</td>
<td>39.95</td>
<td>29.96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01864</td>
<td>FEMMENESSENCE MACAPAUSE® • 120 veg. caps</td>
<td>34.99</td>
<td>26.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01728</td>
<td>FERNBLOCK® W/RED ORANGE COMPLEX (Enhanced) 30 veg. caps</td>
<td>42.00</td>
<td>31.50</td>
<td>28.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00718</td>
<td>FIBRINogenous RESIST® • 30 veg. caps</td>
<td>49.00</td>
<td>36.75</td>
<td>33.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01749</td>
<td>FLAX SEED (Organic golden) • 14 oz</td>
<td>11.67</td>
<td>8.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01821</td>
<td>FLORASSIST® HEART HEALTH PROBIOTIC • 60 veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01825</td>
<td>FLORASSIST® PROBIOTIC • 30 liquid veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td>21.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01913</td>
<td>FOLATE (Optimized) • 5,000 mg, 30 veg. tablets</td>
<td>25.00</td>
<td>18.75</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01939</td>
<td>FOLATE (Optimized) • 1,000 mcg, 100 veg. tablets</td>
<td>19.00</td>
<td>14.25</td>
<td>12.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01841</td>
<td>FOLATE + VITAMIN B12 CAPS • 200 veg. caps</td>
<td>10.50</td>
<td>7.88</td>
<td>7.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01544</td>
<td>FORSKOLIN • 10 mg, 60 veg. caps</td>
<td>16.00</td>
<td>12.00</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01513</td>
<td>FUCOIDAN W/MARITECH™ 926 (Optimized) • 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00559</td>
<td>GAMMA E TocoPHEROL/TocoHEIROLs • 60 softgels</td>
<td>42.00</td>
<td>31.50</td>
<td>27.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00759</td>
<td>GAMMA E TocoPEROL W/Sesame LIGNANS • 60 softgels</td>
<td>32.00</td>
<td>24.00</td>
<td>21.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01394</td>
<td>GARLIC (Optimized) • 200 veg. caps</td>
<td>24.95</td>
<td>18.71</td>
<td>15.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;10122</td>
<td>GINGER FORCE® • 60 softgels</td>
<td>34.95</td>
<td>26.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01658</td>
<td>GINKGO BILOBA CERTIFIED EXTRACT™ • 120 mg, 365 veg. caps</td>
<td>46.00</td>
<td>34.50</td>
<td>31.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01648</td>
<td>GINKGO EXTRACT 24/7 (Super) • 120 mg, 100 veg. caps</td>
<td>29.00</td>
<td>21.75</td>
<td>19.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00756</td>
<td>GLA WITH SESAME LIGNANS (Mega) • 60 softgels</td>
<td>19.50</td>
<td>14.63</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00345</td>
<td>(L-) GLUTAMINE CAPSULES • 500 mg, 100 softgels</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 • 100 grams</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00522</td>
<td>GLUCOSAMINE/CHONDROITIN CAPSULES • 100 caps</td>
<td>38.00</td>
<td>28.50</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01541</td>
<td>GLUTATHIONE, CYSTEINE &amp; C • 100 caps</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00314</td>
<td>L-GLUTATHIONE (Mega) • 250 mg, 60 caps</td>
<td>39.64</td>
<td>29.73</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 5**

<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>GY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01387</td>
<td>GLYCATION PROTECTION FORMULA • 60 veg. caps</td>
<td>44.00</td>
<td>33.00</td>
<td>29.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01669</td>
<td>GLYCINE • 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>01091</td>
<td>GRAPE EXTRACT W/RESVERATROL (Whole) • 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>25.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01411</td>
<td>GRAPE SEED EXTRACT W/RESVERATROL &amp; PTEROSITLBNE • 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>01604</td>
<td>GREEN COFFEE EXTRACT COFFEEOGENIC® 200 mg, 90 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01620</td>
<td>GREEN COFFEE EXTRACT COFFEEOGENIC® 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) • lightly caffeinated,100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00954</td>
<td>GREEN TEA EXTRACT (Mega) • decaffeinated, 100 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01545</td>
<td>GUTSY CHEWY DIGESTIVE (Citrus flavor) • 8 tablets</td>
<td>11.50</td>
<td>8.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01546</td>
<td>GUTSY CHEWY DIGESTIVE (Wildberry flavor) • 8 tablets</td>
<td>11.50</td>
<td>8.63</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 6**

**Receive 25% off the retail price of all products.**
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01309</td>
<td>QUERCETIN (Optimized) • 250 mg, 60 veg. caps</td>
<td>22.00</td>
<td>16.00</td>
<td>15.00</td>
<td>15.00</td>
<td>$0.21</td>
</tr>
<tr>
<td>01300</td>
<td>RED YEAST RICE (Bluebonnet) • 600 mg, 60 veg. caps</td>
<td>16.95</td>
<td>13.65</td>
<td>13.65</td>
<td>13.65</td>
<td>$0.03</td>
</tr>
<tr>
<td>00605</td>
<td>REGIMINT • 60 enteric-coated caps</td>
<td>19.95</td>
<td>14.96</td>
<td>14.96</td>
<td>14.96</td>
<td>$0.04</td>
</tr>
<tr>
<td>01708</td>
<td>REISHI EXTRACT MUSHROOM COMPLEX • 60 veg. caps</td>
<td>30.00</td>
<td>22.50</td>
<td>22.50</td>
<td>22.50</td>
<td>$0.15</td>
</tr>
<tr>
<td>01448</td>
<td>REJUVENEX® BODY LOTION • 6 oz</td>
<td>24.00</td>
<td>18.00</td>
<td>18.00</td>
<td>18.00</td>
<td>$0.09</td>
</tr>
<tr>
<td>01621</td>
<td>REJUVENEX® FACTOR FIRMING SERUM • 1.7 oz</td>
<td>65.00</td>
<td>48.75</td>
<td>48.75</td>
<td>48.75</td>
<td>$3.00</td>
</tr>
<tr>
<td>01220</td>
<td>REJUVENEX® (Ultra) • 2 oz</td>
<td>52.00</td>
<td>39.00</td>
<td>39.00</td>
<td>39.00</td>
<td>$2.60</td>
</tr>
<tr>
<td>00676</td>
<td>REJUVENIGHT® (Ultra) • 2 oz</td>
<td>39.25</td>
<td>29.00</td>
<td>29.00</td>
<td>29.00</td>
<td>$1.60</td>
</tr>
<tr>
<td>01410</td>
<td>RESVERATROL W/PTEROSTILBENE • 100 mg, 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>27.00</td>
<td>27.00</td>
<td>$0.45</td>
</tr>
<tr>
<td>01930</td>
<td>RESVERATROL W/NAO+® CELL REGENERATOR™ (Optimized) • 30 veg. caps</td>
<td>42.00</td>
<td>31.50</td>
<td>31.50</td>
<td>31.50</td>
<td>$1.40</td>
</tr>
<tr>
<td>01430</td>
<td>RESVERATROL W/SYNERGISTIC GRAPE-BERRY ACTIVES (Optimized) • 250 mg, 60 veg. caps</td>
<td>46.00</td>
<td>34.50</td>
<td>34.50</td>
<td>34.50</td>
<td>$0.50</td>
</tr>
<tr>
<td>00889</td>
<td>RHODIOULA EXTRACT • 250 mg, 60 veg. caps</td>
<td>14.00</td>
<td>10.50</td>
<td>10.50</td>
<td>10.50</td>
<td>$0.06</td>
</tr>
<tr>
<td>01900</td>
<td>RIBOGEN® FRENCH OAK WOOD EXTRACT • 200 mg, 30 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>27.00</td>
<td>27.00</td>
<td>$0.95</td>
</tr>
<tr>
<td>00972</td>
<td>(D) RIBOSE POWDER • 150 grams</td>
<td>27.50</td>
<td>20.63</td>
<td>20.63</td>
<td>20.63</td>
<td>$0.20</td>
</tr>
<tr>
<td>01473</td>
<td>(D) RIBOSE TABLETS • 100 veg. tabs</td>
<td>32.00</td>
<td>24.00</td>
<td>24.00</td>
<td>24.00</td>
<td>$0.30</td>
</tr>
<tr>
<td>01609</td>
<td>RICH REWARDS® BREAKFAST GROUND COFFEE • 12 oz. bag</td>
<td>13.00</td>
<td>9.75</td>
<td>9.75</td>
<td>9.75</td>
<td>$0.40</td>
</tr>
<tr>
<td>01730</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Mocha • 12 oz. bag</td>
<td>15.00</td>
<td>11.25</td>
<td>11.25</td>
<td>11.25</td>
<td>$0.80</td>
</tr>
<tr>
<td>01729</td>
<td>RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Vanilla • 12 oz. bag</td>
<td>15.00</td>
<td>11.25</td>
<td>11.25</td>
<td>11.25</td>
<td>$0.90</td>
</tr>
<tr>
<td>01612</td>
<td>RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE 12 oz. bag</td>
<td>13.00</td>
<td>9.75</td>
<td>9.75</td>
<td>9.75</td>
<td>$0.40</td>
</tr>
<tr>
<td>01610</td>
<td>RICH REWARDS® DECAFENIATED ROAST GROUND COFFEE 12 oz. bag</td>
<td>14.00</td>
<td>10.50</td>
<td>10.50</td>
<td>10.50</td>
<td>$0.60</td>
</tr>
<tr>
<td>01530</td>
<td>RICH REWARDS® CRUCIFEROUS VEGETABLE SOUP • 32 oz.</td>
<td>11.95</td>
<td>8.96</td>
<td>8.96</td>
<td>8.96</td>
<td>$0.35</td>
</tr>
<tr>
<td>01208</td>
<td>R-LIPIC ACID (Super) • 240 mg, 60 veg. caps</td>
<td>49.00</td>
<td>36.75</td>
<td>36.75</td>
<td>36.75</td>
<td>$0.20</td>
</tr>
<tr>
<td>00070</td>
<td>RNA CAPSULES • 500 mg, 100 caps</td>
<td>17.95</td>
<td>13.46</td>
<td>13.46</td>
<td>13.46</td>
<td>$0.20</td>
</tr>
</tbody>
</table>

**SUB-TOTAL OF COLUMN 9**
<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>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01051</td>
<td>TWO-PER-DAY • 120 caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00326</td>
<td>L-TYROSINE • 500 mg, 100 tablets</td>
<td>12.96</td>
<td>9.74</td>
<td></td>
<td></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>
<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>
<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>
<td></td>
</tr>
<tr>
<td>00372</td>
<td>VITAMIN B3 Niacin • 500 mg, 100 caps</td>
<td>7.65</td>
<td>5.74</td>
<td>4.99</td>
<td></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>
<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>
<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>
<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>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>VITAMIN C w/DIHYDROQUERCETIN • 1,000 mg, 250 veg. tablets</td>
<td>25.50</td>
<td>19.13</td>
<td>17.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00084</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>
<td></td>
</tr>
<tr>
<td>01736</td>
<td>VITAMIN C-Magnesium Crystals (EFFERVESCENT) • 180 grams</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></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>
<td></td>
</tr>
<tr>
<td>01753</td>
<td>VITAMIN D3 • 1,000 IU, 80 softgels</td>
<td>7.00</td>
<td>5.25</td>
<td>4.50</td>
<td></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>
<td></td>
</tr>
<tr>
<td>01713</td>
<td>VITAMIN D3 • 5,000 IU, 60 softgels</td>
<td>11.00</td>
<td>8.25</td>
<td>7.43</td>
<td></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>
<td></td>
</tr>
<tr>
<td>01758</td>
<td>VITAMIN D3 w/SEA-IODINETM • 5,000 IU, 60 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00864</td>
<td>VITAMIN D3 Liquid Emulsion • 2,000 IU, 1 oz</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01840</td>
<td>VITAMIN D AND K w/SEA-IODINETM • 60 caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01763</td>
<td>VITAMIN E (Natural) • 400 IU, 100 softgels</td>
<td>30.00</td>
<td>22.50</td>
<td>21.00</td>
<td>19.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01225</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>
<td></td>
</tr>
<tr>
<td>00409</td>
<td>XYLIOWHITE™ MOUTHWASH • 16 oz</td>
<td>10.00</td>
<td>7.50</td>
<td></td>
<td></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>
<td></td>
</tr>
<tr>
<td>01826</td>
<td>WEIGHT MANAGEMENT FORMULA • 60 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</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>
<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>
<td></td>
</tr>
<tr>
<td>01961</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>
<td></td>
</tr>
<tr>
<td><strong>01051</strong></td>
<td>ZYFLAMEND® WHOLE BODY • 120 softgels</td>
<td>64.95</td>
<td>48.71</td>
<td></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>QTY Total</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>33880</td>
<td>OUTSTANDING HEALTH: THE 6 ESSENTIAL KEYS TO MAXIMIZE YOUR ENERGY AND WELL 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>
<td></td>
</tr>
<tr>
<td>33878</td>
<td>TESTOSTERONE REPLACEMENT THERAPY • by Dr. John Cotsier • 2015</td>
<td>19.99</td>
<td>14.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33877</td>
<td>THE TRUTH ABOUT MEN AND SEX • by Abraham Morgentaler, MD, FACS • 2015</td>
<td>16.99</td>
<td>12.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33876</td>
<td>TOX-SICK • by Suzanne Somers • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33875</td>
<td>DOCTORED: THE DISILLUSIONMENT OF AN AMERICAN PHYSICIAN • by Sandeep Jauhar • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></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>
<td></td>
</tr>
<tr>
<td>33873</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>
<td></td>
</tr>
</tbody>
</table>

** SUB-TOTAL OF COLUMN 11 **

---

* 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 Canada.
† Due to license restrictions, this product is not for sale to customers outside of the USA and Canada.

Not sure exactly which supplements you need?
Talk to a Health Advisor toll-free at 1-800-226-2370
ORDER SUBTOTALS

<table>
<thead>
<tr>
<th>SUB-TOTAL COLUMN 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUB-TOTAL COLUMN 2</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 3</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 4</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 5</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 6</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 7</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 8</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 9</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 10</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 11</td>
</tr>
<tr>
<td>SUB-TOTAL COLUMN 12</td>
</tr>
</tbody>
</table>

ORDER TOTALS

| SUB-TOTAL OF COLUMNS 1 - 12 |

POSTAGE & HANDLING (Any size order, contiguous U.S. includes Alaska & Hawaii) $5.50

C.O.D.s (ADD $7 FOR C.O.D. ORDERS)

UPS OVERNIGHT add $16, UPS 2nd DAY AIR add $7. For Puerto Rico, US Virgin Islands, add $7. CANADA UPS EXPRESS Flat rate $17.50. UK Flat rate $25 USD. ALL OTHER INTERNATIONAL AIR WILL BE ADDED.

SHIPPING (MUST BE IN U.S. DOLLARS)

GRAND TOTAL

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

INTRODUCING YOUR HEALTHY REWARDS
Because You Deserve More

Introducing Your Healthy Rewards—the exciting new program exclusively for Life Extension customers. Your Healthy Rewards earns you 2% LE Dollars back on every purchase you make…and the best part is, Your Healthy Rewards is FREE—no membership involved, no commitment required. The reason behind Your Healthy Rewards is simple: we believe that you deserve more. (Current Life Extension members earn 4%.)

And earn even more benefits when you upgrade to Your Healthy Rewards Premier!

For $49.95, you get an immediate $50 LE Dollar enrollment bonus, double LE Dollars (4%) back on purchases, complimentary CHOICE unlimited standard shipping service†, and more. Your Healthy Rewards Premier is the ultimate way to earn LE Dollars and enjoy exclusive Premier-only perks! At the annual rate of just $49.95 US/$59.95 International, Premier pays for itself.

Learn more about YOUR HEALTHY REWARDS
Call toll-free 1-888-224-8239
www.LifeExtension.com/Rewards

* You earn LE Dollars on all your Life Extension purchases (except shipping fees, CHOICE and Premier program fees, Life Extension Magazine® subscriptions, or any purchases made with LE Dollars or gift card). Redeem LE Dollars for any purchase such as products, labs, sale items, and shipping fees. LE Dollars may not be redeemed for Premier program fees, CHOICE program fees, Life Extension Magazine® subscriptions, or to purchase Gift Cards. LE Dollars have no cash value and are not redeemable for cash, transferable, or assignable for any reason.

† CHOICE Standard pre-paid shipping offers unlimited shipping to any mailing address within the 50 U.S. states, excluding U.S. territories. CHOICE also gives you discounts on non-standard shipping, shipping outside of the United States, and expedited shipping costs. CHOICE pre-paid unlimited shipping excludes blood test products and gift cards. This offer is not available to international customers serviced by distributors of Life Extension products.

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>COUNTRY</td>
<td></td>
</tr>
<tr>
<td>PHONE</td>
<td>FAX</td>
</tr>
<tr>
<td>SIGNATURE</td>
<td></td>
</tr>
</tbody>
</table>

Prices subject to change without notice. Please notify Life Extension of any address change.
For more than 40 years, the antioxidant compound **N-acetyl-L-cysteine**, or NAC, has been recognized for its role in supporting bronchial and respiratory health. Today, a burst of renewed scientific interest has yielded fresh insights into its role in supporting overall health.

At the core of N-acetyl-L-cysteine’s power is its ability to support healthy cellular levels of **glutathione** (GSH), a nutrient utilized by all cells for protection against free radical damage and insults from foreign compounds.

N-acetyl-L-cysteine directly contributes to glutathione production and stimulates enzymes involved in maintaining glutathione, providing critical energy and support for cell function across multiple systems of the body.

Over 30 placebo-controlled clinical trials involving cellular glutathione have indicated beneficial effects of oral **N-acetyl-L-cysteine** on health, quality of life, and well-being.

Aside from its role in glutathione synthesis, N-acetyl-L-cysteine serves as a highly bioavailable nutrient in its own right. Upon ingestion, it is readily absorbed and promotes direct cellular protection throughout the body via multiple physiological pathways. It provides immune support, helps liver cells to efficiently metabolize lipids and neutralize free radicals, and has been shown to supply nutritional support to neurons in the presence of oxidative stress.

Individuals seeking support for system-wide health with **Life Extension® N-Acetyl-L-Cysteine** may choose to ingest between 600-1,800 mg per day.

**References**

**To order N-Acetyl-L-Cysteine, 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.
We have always been about Quality.

You care about the quality of your family’s supplements. We do too.

Master Supplements Inc. is proud that we have been posting online test results for every single lot of our products for over ten years. These tests verify the purity, potency and high quality of our powerful product line. We rely on ingredients that are backed with scientific research, clinical studies and years of efficacy. We have protected our unique technology with 16 U.S. patents, providing formulas that support digestive and immune health. Our probiotics, fiber and enzyme supplements all help restore digestive comfort, regularity, and energy*.

Call your Life Extension® advisor to learn more.

Call Life Extension to place your order today. 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.
A FULL SPECTRUM PHOSPHOLIPID—OMEGA-3 COMPLEX

KRILLPOWER

HEALTHY LIPID MANAGEMENT*  BRAIN NUTRITION*  METABOLIC HEALTH*

KRILL OIL: A UNIQUE & POWERFUL ALTERNATIVE TO FISH OIL

Jarrow Formulas® Krill Oil is a traceable, sustainable, and eco-friendly low temperature extract of the abundant Antarctic krill (Euphausia superba). It contains unique phospholipids rich in Omega-3 PUFAs (EPA and DHA) as well as astaxanthin.

Kreal Oil is clinically documented to enhance lipid management, brain nutrition, and liver and glucose metabolism.*
FINALLY AN IMMUNE FORMULA THAT SCORES A PERFECT 10

Ten Mushroom® Formula

- All Season, Year-Round Immune Support*
- Safe for Everyday Use*
- Organically Grown in the Pacific Northwest*

Ten Mushroom® is a synergistic blend of ten organic mushroom varieties, carefully selected based on their broad-spectrum benefits for immune and overall health. Additional beta-glucans give an extra boost to help optimize immune function.

For thousands of years, traditional cultures have relied on medicinal mushrooms to promote optimal health and longevity. Ten Mushroom® is designed based on this time-honored wisdom, and substantiated with extensive research on the broad-spectrum health benefits offered by each mushroom in this unique formula.

This synergistic mushroom blend delivers powerful yet gentle support for immune health, with additional organ-specific benefits to help you reach optimal vitality. Organically grown in a controlled indoor environment and packaged under strict GMP guidelines, Ten Mushroom® uses the vegetative mycelium of each mushroom, rather than the spore-containing fruiting body (which often cause allergic reactions).

Gentle, nourishing and pure, Ten Mushroom® is an ideal formula to protect and promote long-term health.*

Finally, an immune formula that scores a perfect Ten!

To order Ten Mushroom®, call 1-800-544-4440 or visit www.LifeExtension.com

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.
Life Extension®'s Once-Daily Health Booster is a cost-effective nutrient formula that combines a variety of valuable nutrients in just one softgel.

**Once-Daily Health Booster** provides the following nutrients:

- **Vitamins K1 and K2**, including the rapidly absorbed MK-4 and the 24-hour bioavailable MK-7, to keep calcium in the bones and out of the arteries.
- **MacuGuard® Carotenoid Phospholipid Blend**, which contains trans-zeaxanthin, meso-zeaxanthin, and lutein to support eye health and healthy vision.
- **Gamma tocopherol**, a highly effective form of vitamin E, which quenches a dangerous free radical (peroxynitrite) that plays a major role in age-related decline.¹,²
- **Vitamin E** as D-alpha tocopherol to suppress lipid peroxidation.³,⁴
- **Blueberry extract** to boost DNA repair and sustain healthy blood sugar levels already within normal range.⁵,⁶
- **Sesame lignans** to boost tissue levels of gamma tocopherol.⁷
- **Lycopene** to support prostate health and guard against LDL oxidation.⁸,⁹
- **Chlorophyllin**, which offers protection against environmentally induced DNA damage.¹⁰
- **Black currant extract** anthocyanins to promote eye health.¹¹
- **Vitamin B12** to help maintain a healthy nervous system and metabolism.¹²

**Fat-Soluble Nutrients NOT Found In Most Multi-Vitamin Formulas**

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Your Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$52</td>
</tr>
<tr>
<td>$39</td>
<td>4 bottles</td>
</tr>
</tbody>
</table>

**Super Cost Effective!**

Just one softgel of the new Health Booster taken with a heavy meal provides optimized potencies of fat-soluble vitamins, carotenoids, and other nutrients in just one softgel cap. If these nutrients were taken separately, one would have to swallow many capsules and spend 2-3 times more money. Each bottle of Health Booster lasts two months.

---

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

Contains soybeans.

Caution: If taking anticoagulant or antiplatelet medication, consult your health care provider before taking this product. Those with inborn errors of copper metabolism (e.g., Wilson's disease) should avoid daily, chronic use of this product.

Tomat-O-Red® is a registered trademark of LycoRed, LTD. LuteinPlus® and Mz® are registered trademarks of NutriProducts Ltd., UK, licensed under U.S. Patent 8,023,428.

Caution: If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

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

22  ENHANCED DELIVERY OF FRIENDLY BACTERIA
Probiotics are rapidly becoming one of the most popular dietary supplements because of their role in maintaining all aspects of physical health. Dual-capsule technology protects probiotics from destructive stomach acid.

34  HIGHLY PURIFIED FISH OIL FROM ALASKA
Fish oil derived from pristine Alaskan waters creates new meaning to the word “fresh.” Meticulous steps are taken to produce an omega-3-rich oil with a 5-fold reduction in the upper threshold standard of oxidation. The best has just gotten better!

58  NATURAL SUPPORT FOR STOMACH HEALTH
Japanese researchers have developed a unique nutrient combination that counters H. pylori, protects against excess acid, and guards the gastric lining from the damaging effects of certain drugs.

46  BILLIONAIRES WHO FUND ANTI-AGING RESEARCH
Far-thinking billionaires are funding innovative research aimed at discovering methods to slow and reverse pathological aging processes.

7  NEW LOYALTY REWARDS PROGRAM
In a dramatic transition to enhance supplement buying power, all Life Extension® members are automatically enrolled in a new Your Healthy Rewards program. Loyal supporters now have more benefits than ever—at no cost!

78  PIONEERING TREATMENT FOR SCLERODERMA
Dr. Dipnarine Maharaj has developed an innovative nontoxic treatment that uses a patient’s stem cell-mobilized bone marrow to suppress inflammation and reverse lethal scleroderma tissue damage.

Visit us at www.LifeExtension.com