

**NEW HEALTHY REWARDS PROGRAM**

# LifeExtension<sup>®</sup>

LifeExtension.com

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

October 2015

## 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.<sup>1</sup>

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

- **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.<sup>3</sup>

**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**

### Super K with Advanced K2 Complex

Item #01724 • 90 softgels

	Retail Price	Your Price
1 bottle	\$30	<b>\$22.50</b>
4 bottles		<b>\$20.25 each</b>

Each bottle lasts for three months.

[The same Super K formula of vitamin K1, vitamin K2 (MK-4), and vitamin K2 (MK-7) can be found in Life Extension® Once-Daily Health Booster (formerly Super Booster). If you take Once-Daily Health Booster, you do not need additional Super K with Advanced K2 formula.]

#### References

1. *Br J Nutr.* 2012 Nov 14;108(9):1652-7.
2. *Asia Pac J Clin Nutr.* 2013;22(3):492-6.
3. *Blood.* 2007 Apr 15;109(8):3279-83.

**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.



## REPORTS

**22 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.

**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!

**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. The objective is to accelerate scientific advances that will enable humans to enjoy longer and healthier life spans.

**58 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.

**68 LIFE EXTENSION® HEALTH EXPERTS—JUST A PHONE CALL AWAY!**

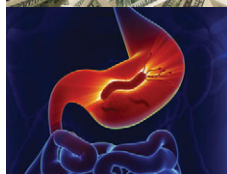
Life Extension® offers, at no cost, a highly trained team of medical doctors, nutritionists, cancer specialists, chiropractors, nurses, and naturopathic doctors who are available to answer your personal health questions based on scientific studies.

**78 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.

**7 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.

**15 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.

**87 WELLNESS PROFILE**

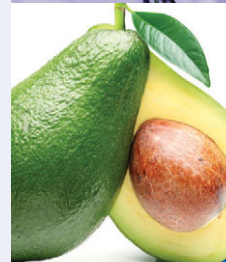
A bodybuilder for 40 years, 72-year-old Linda Reboh credits Life Extension® with providing her with cutting-edge health information. In this exclusive interview, she explains her personal regimen of healthy diet, supplements, exercise, mindfulness, and staying mentally active.

**93 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.

**99 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.







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- Blood Testing and Analysis
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FOR WHOLE-BODY SUPPORT

# Highly Absorbable CURCUMIN

Used medicinally for over 4,000 years, **curcumin** benefits almost every organ in the body.<sup>1,3</sup> 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.<sup>4</sup>

Studies comparing standard curcumin to **Super Bio-Curcumin**® and **Advanced Bio-Curcumin**® with Ginger & Turmerones found:<sup>5,6</sup>

- 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,<sup>7</sup>
  - ∞ **Turmerones** to increase the amount of curcumin inside cells, and
  - ∞ **Phospholipids** to further enhance absorption.<sup>8</sup>



## Super Bio-Curcumin®

Item #00407 • 60 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$38	<b>\$28.50</b>
4 bottles		<b>\$26.25 each</b>

Non-GMO



Bio-Curcumin® and BCM-95® are registered trademarks of Dolcas-Biotech, LLC. U.S. Patent Nos. 7,883,728, 7,736,679 and 7,879,373.

### References

1. *Br J Nutr.* 2010 Jun;103(11):1545-57.
2. *Nat Sci Biol Med.* Jan-Jun;4(1):3-7.
3. *Biofactors.* 2013 Jan-Feb;39(1):2-13.

## Advanced Bio-Curcumin® with Ginger & Turmerones

Item #01808 • 30 softgels

	Retail Price	Your Price
1 bottle	\$30	<b>\$22.50</b>
4 bottles		<b>\$20.25 each</b>

Contains soybeans.



4. *Indian J Pharm Sci.* 2008 Jul-Aug; 70(4):445-9.
5. *Int J Pharmacol.* 2009;5(6):333-45.
6. *Food Nutr Res.* 2009;48(3):148-52.

7. *J Med Food.* 2012 Mar;15(3):242-52.
8. *Cancer Chemother Pharmacol.* 2007;60:171-7.

To order **Super Bio-Curcumin**® or **Advanced Bio-Curcumin**® with Ginger & Turmerones, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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# LifeExtension®

Magazine

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



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



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



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



**Steven B. Harris, MD**, is president and director of research at Critical Care Research, a company that grew out of 21st Century Medicine in Rancho Cucamonga, CA. Dr. Harris participates in groundbreaking 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), FRCPPath., 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](http://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 X-Therma 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.

## Compare CENTRUM® to TWO-PER-DAY:

Sample Ingredient Comparison	Centrum® Silver® Adults 50+	Life Extension® Two-Per-Day
Vitamin C	60 mg	500 mg
Vitamin D3	1,000 IU	2,000 IU
Vitamin B1	1.5 mg	75 mg
Vitamin B2	1.7 mg	50 mg
Vitamin B6	3 mg	75 mg
Vitamin B12	25 mcg	300 mcg
Niacin (as niacinamide)	20 mg	50 mg
Pantothenic acid	10 mg	100 mg
Vitamin E	50 IU (synthetic)	100 IU (natural)
Folate	400 mcg (synthetic)	400 mcg (natural)
Zinc	11 mg	30 mg
Selenium	55 mcg (one form)	200 mcg (three forms)
Lutein	250 mcg	5,000 mcg
Lycopene	300 mcg	2,000 mcg
Biotin	30 mcg	300 mcg
Chromium	45 mcg	200 mcg
Molybdenum	45 mcg	100 mcg
Magnesium	50 mg	100 mg
Manganese	2.3 mg	2 mg
Iodine	150 mcg	150 mcg
Potassium	80 mg	25 mg
Vitamin A (as beta-carotene)	1,000 IU	4,500 IU
Vitamin A (preformed)	1,500 IU	500 IU
Choline (as bitartrate)	(none)	20 mg
Inositol	(none)	50 mg
Calcium	220 mg	12 mg
Alpha Lipoic Acid	(none)	25 mg
Natural Mixed Tocopherols (providing gamma, delta, alpha, and beta tocopherols)*	(none)	20 mg
Nicotinamide Riboside	(none)	1 mg

# Are You Getting The Maximum Potency From Your Daily Vitamin?

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

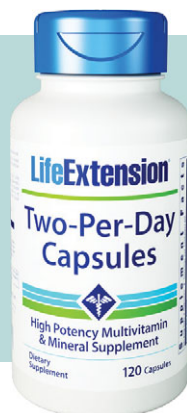
Twice as much zinc

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.

## Two-Per-Day Capsules

Item #01914 • 120 capsules (2 month supply)

	Retail Price	Your Price	You Save*
1 bottle	\$22	<b>\$16.50</b>	<b>25%</b>
4 bottles		<b>\$15 each</b>	<b>31%</b>



## Two-Per-Day Tablets

Item #01915 • 120 tablets (2 month supply)

	Retail Price	Your Price	You Save*
1 bottle	\$20	<b>\$15.00</b>	<b>25%</b>
4 bottles		<b>\$13.50 each</b>	<b>32%</b>



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](http://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](http://www.ChromaDexPatents.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.



# After 35 Years... A Major Change



BY WILLIAM FALOON

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.<sup>1</sup>

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 any time 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.





## Your Healthy Rewards Benefits Saves Members Even More Dollars



### Current Member Benefits

- 25% to 60% Discount
- Health Advisor Access
- *Life Extension* Magazine
- Support Medical Research

### Transitional Benefits (Free To Current Members)

- 25% to 60% Discount
- Health Advisor Access
- *Life Extension* Magazine
- Support Medical Research
- PLUS**
- **Double Bonus Reward Dollars**  
(4% earnings)
- **\$25 LE Rewards Bonus**  
(This \$25 Bonus has already been credited to your account)



### Premier Benefits (\$49.95 A Year)

- 25% to 60% Discount
- Health Advisor Access
- *Life Extension* Magazine
- Support Medical Research
- PLUS**
- **Double Bonus Reward Dollars**  
(4% earnings)
- **\$50 LE Rewards Yearly Bonus**  
(You earn this \$50 credit when enrolling in the Premier program and each year you renew)
- **Free Shipping\***

NOTE: Transitional benefits valid until current membership expiration date. Basic Reward Dollars are 2%. Transitional Double Reward Dollars are 4%.

\*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.

### 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.



## What If You Are Not Already A Member?

If you are not a **Life Extension** member, but want to join the new **Your Healthy Rewards Premier** program, just call **1-888-224-8239** (24 hours) or go online to **LifeExtension.com/Premier** and sign up for **\$49.95**.

This will immediately entitle you to:

- **Discounts of 25% to 60%** on the highest-quality **nutritional supplements**,
- **Free \$50 rewards bonus** to be used when purchasing any supplement or blood test,
- **Free shipping**\*,
- **Premier reward dollars (4% earnings on spend)** that never expire and can be used for future orders of supplements, blood tests, and everything else we offer. (Note **basic program reward dollars** are **2%** and are available to you without paying \$49.95);\*
- **Free access** to knowledgeable **health advisors**;
- **Discount pricing** on comprehensive **blood tests**;
- **Life Extension Magazine**...with an unparalleled track record of introducing lifesaving medical discoveries.

## Option For Members To Upgrade Now

Current members who want to take advantage of the **free shipping** program may consider upgrading to the new **Premier** program now. The reason is that for **\$49.95**, you'll receive the immediate **\$50 credit**, and **free shipping**. If you are already a **Choice Standard Shipping** member, no need to upgrade now. Just wait for your Choice free shipping renewal notice.

\* 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.

## Seamless Transition

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.





### *Simplicity With Savings!*

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.

# LifeExtension®

# LE

YOUR  
HEALTHY  
REWARDS

Because good health  
is the real reward.



A long, healthy life starts with good nutrition, but a good rewards program can make life even better. Enjoy Life Extension's advanced formulas, and start earning rewards.

..... INTRODUCING .....

# 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.\*

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,<sup>†</sup> 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**.

\*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 participants receive a free 1-year subscription to *Life Extension Magazine* with their first purchase of Life Extension products or blood tests. †† CHOICE Standard pre-paid shipping offers unlimited shipping to any mailing address within the 50 states, excluding US 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 international distributors of Life Extension products.





## 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!<sup>††</sup>

✓ **\$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!

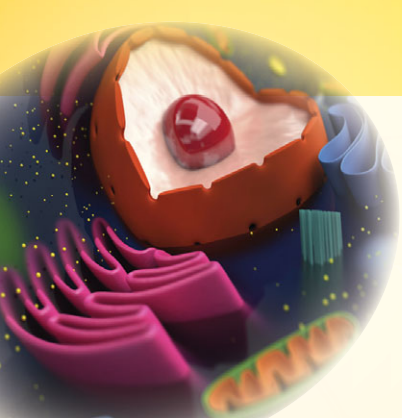
To learn more about **Your Healthy Rewards**, call toll-free

**1-888-224-8239**

Mention Code YRG523A

[www.LifeExtension.com/Rewards](http://www.LifeExtension.com/Rewards)

**LifeExtension®**



# AMPK Activator

A PARADIGM IN CONTROLLING AGING

Found in every cell,<sup>1,2</sup> **AMPK** promotes **longevity factors** that have been shown to extend life span in numerous organisms.<sup>3,4</sup> Increasing AMPK signaling “turns off” many damaging effects of aging, thus enabling cells to return to their youthful vitality.<sup>5</sup>

## Importance Of AMPK

Studies show **increased** AMPK activity supports reduced fat storage,<sup>6</sup> new mitochondria production,<sup>7</sup> and the promotion of healthy blood glucose and lipids already within normal range.<sup>4</sup>

## Gynostemma Pentaphyllum

An extract of the plant *Gynostemma pentaphyllum* promotes **AMPK** activation!<sup>8-10</sup> 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.<sup>11</sup>

## Trans-Tiliroside

*Trans-tiliroside*, extracted from plants such as **rose hips**, boosts **AMPK** activation, but triggers different downstream metabolic benefits than *G. pentaphyllum*.<sup>12-14</sup> 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.<sup>15</sup>

## 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:

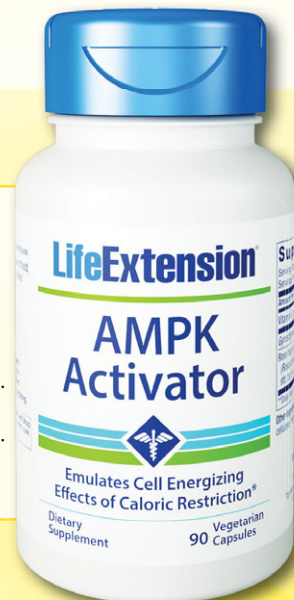
<b>ActivAMP®</b>	
<i>Gynostemma pentaphyllum</i> extract	450 mg
Rose hip extract	1,119 mg
Standardized to 5% <i>trans-tiliroside</i>	56 mg

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

## AMPK Activator

Item #01907 • 90 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$48	<b>\$36</b>
4 bottles		<b>\$33 each</b>



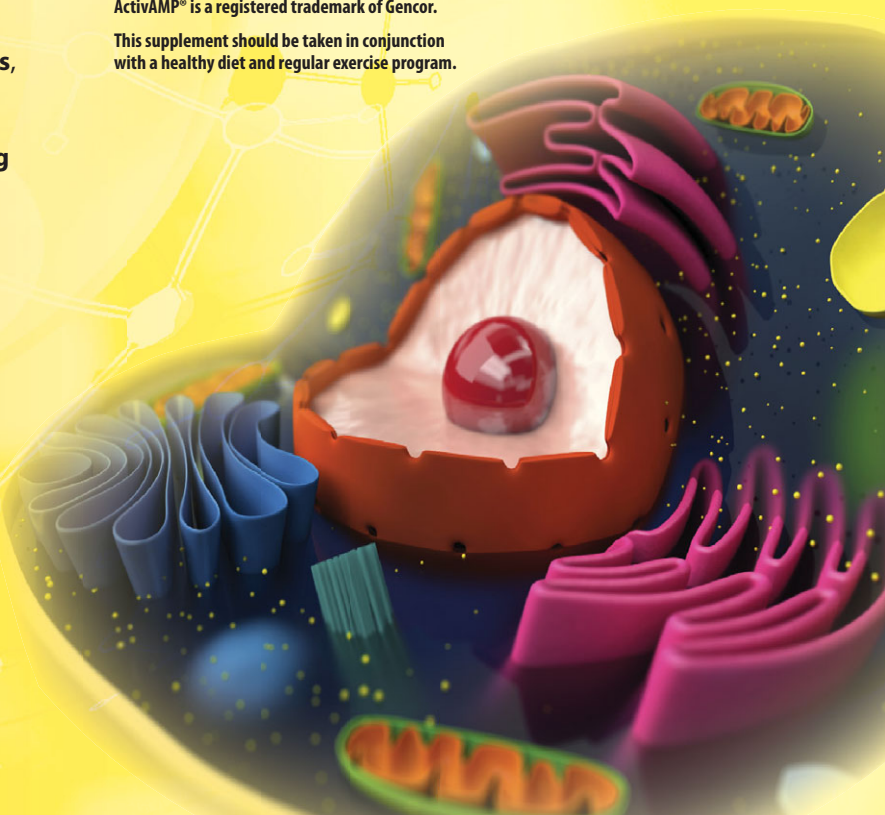
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15. *Bioorg Med Chem Lett* 2007;17(11):3059-64.

## Non-GMO

ActivAMP® is a registered trademark of Gencor.

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







## IN THE NEWS

### 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.

\* *Adv Integr Med.* 2015 Apr;2(1):56-62.



### 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.

\* *Lab Invest.* 2015 Apr 13.



## Melatonin Improves Bone Density

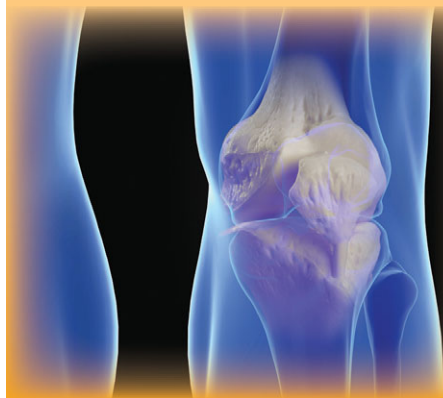
A study published in the *Journal of Pineal Research* of postmenopausal women with osteopenia has shown that long-term treatment with **melatonin**, which naturally decreases in the body with age, can improve the density of bone at the neck of the femur, in proportion to the level of treatment.\*

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.



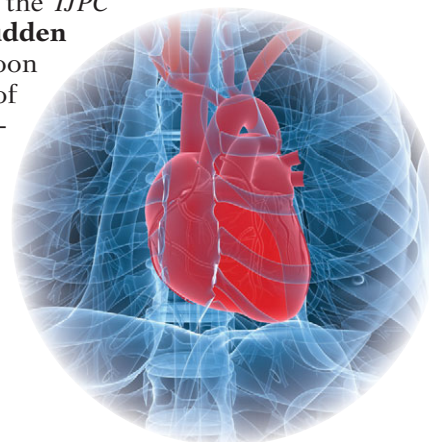
## Life Extension®’s Co-Founder Has Editorial Cited In Peer-Reviewed Journal

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.





### Periodic Low-Calorie Diet Might Be All That's Necessary To Obtain Benefits Of Prolonged Fasting

An article in *Cell Metabolism* reports that periodic fasting could provide some of the same benefits as prolonged fasting. Fasting, an intensive form of dietary restriction, has been associated with numerous health benefits and has prolonged life span in experimental models.\*

Following positive findings in yeast, mice were administered diets that included bimonthly cycles of four days of a low-calorie regimen or a control diet that provided the same amount of calories per month beginning in middle age. The researchers, led by Valter Longo of the University of Southern California, observed a decrease in visceral fat, skin lesions, and cancer, accompanied by slowed bone mineral density loss, immune system rejuvenation, and greater longevity in the periodically-fasted group compared with a control group. In older mice, the treatment group also had enhanced hippocampal neurogenesis and better cognitive performance compared to the control animals.

**Editor's Note:** In a pilot study involving 19 human participants, three cycles of a similar diet for five days was associated with a reduction in biomarkers for aging, cardiovascular disease, cancer, and diabetes. "It's about reprogramming the body so it enters a slower aging mode, but also rejuvenating it through stem cell-based regeneration," Dr. Longo explained. "It's not a typical diet because it isn't something you need to stay on."

\* *Cell Metab.* 2015 Jun 18.

### 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."

\* *Int J Clin Exp Med.* 2015 Mar 15;8(3):3924-34.

### Higher Carotenoid Levels Associated With Breast Cancer Protection

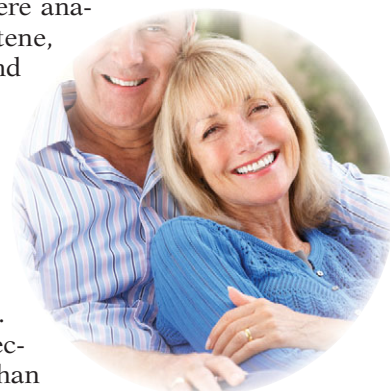
A case-control study reported in the *American Journal of Clinical Nutrition* found a protective effect for high plasma levels of carotenoids against the risk of developing breast cancer.\*

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, 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.

\* *Am J Clin Nutr.* 2015 Jun;101(6):1197-205.



## 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.

\* *Am J Clin Nutr.* 2015 May 20.

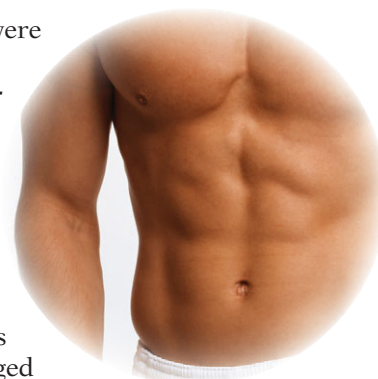


## AMPK Slows Age-Related Muscle Loss

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.



# SAMe

## FOR BRAIN HEALTH

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.

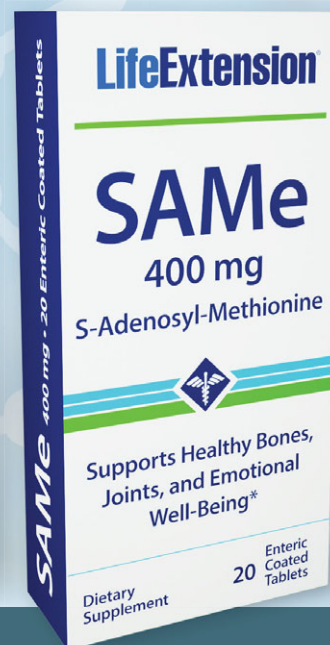
A study by Harvard Medical School and Massachusetts General Hospital cited the impressive benefits of SAMe for mood elevation.<sup>1</sup> A report published in Germany showed that SAMe may help maintain healthy neurological function. This impressive report found that SAMe:<sup>2</sup>

- **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

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2. *Naunyn Schmiedebergs Arch Pharmacol*. 2000 Jan;361(1):47-52.



#### SAMe 400 mg

Item #00557 • 20 enteric coated tablets

	Retail Price	Your Price
1 box	\$28	\$21
4 boxes		\$18 each

(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.

# Dual-Action Support For Aging Joints!

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

You now have a more potent option to provide broad-spectrum support for aging joints.

**ArthroMax® Advanced with UC-II® and AprèsFlex®** is a multi-nutrient formula based on scientific data on natural support for joint health. The ArthroMax® formula provides more joint support than ever before, enhanced with two innovative, clinically validated ingredients: AprèsFlex® and UC-II®.

## Better Absorption For Optimum Benefit

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

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

**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.

### ArthroMax® Advanced with UC-II® & AprèsFlex®

Item #01618 • 60 capsules

	Retail Price	Your Price
1 bottle	\$36	<b>\$27</b>
4 bottles	\$32 each	<b>\$24 each</b>

#### Non-GMO

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

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2. *J Ethnopharmacol.* 2006 Sep 19;107(2):249-53.



To order ArthroMax® Advanced with UC-II® and AprèsFlex® call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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



Advanced Defense Against Cellular Aging

# OPTIMIZED RESVERATROL

## with NAD+ Cell Regenerator

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**.<sup>1</sup>

**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!<sup>2</sup>

**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.



### Optimized Resveratrol with NAD+ Cell Regenerator

Item #01930 • 30 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$42	<b>\$31.50</b>
4 bottles		<b>\$27 each</b>

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

Trans-Resveratrol	250 mg
NIAGEN® Nicotinamide Riboside	100 mg
Grape-Berry Actives	40 mg
Quercetin	60 mg
Trans-Pterostilbene (from pTeroPure®)	0.5 mg
Fisetin	10 mg

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

Non-GMO

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**To order Optimized Resveratrol with NAD+ Cell Regenerator, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

#### References

1. *Cell Metab.* 2011 Nov 2;14(5):612-22
2. Available at: [https://chromadex.com/wpresources/Upload/Article/Literature/Ingredient/IngredientSaleSheets\\_NIAGEN\\_V0114b\\_pw.pdf](https://chromadex.com/wpresources/Upload/Article/Literature/Ingredient/IngredientSaleSheets_NIAGEN_V0114b_pw.pdf). Accessed July 15, 2014.

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.







# PROBIOTICS

## Provide ANTI-AGING DEFENSE

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**.<sup>1,2</sup>

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.<sup>3</sup>

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.<sup>4-13</sup>

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.

## Minor Factors Trigger Massive, Long-Term Effects

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

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!<sup>23-27</sup>

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.<sup>3,14,28</sup>

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,<sup>29,30</sup> and their genes outnumber your own genes by 100 to one.<sup>30</sup>

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.<sup>3</sup>

## 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.<sup>31</sup>

Intestinal bacteria produce **proteins** that have powerful influences on these chemical detectors.<sup>32</sup> 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—not just those associated with the gut.

Fortunately, **probiotic supplements** can restore a healthy balance to gut bacteria and reverse these disruptions to intestine-based signaling mechanisms. This, in turn, reverses the negative influence that triggers the development of chronic disease.<sup>33</sup>

In other words, probiotics can restore your body's natural, intestine-based protection against a host of non-intestinal diseases and shield you from the diseases of aging.<sup>4-7,11,18,20</sup>

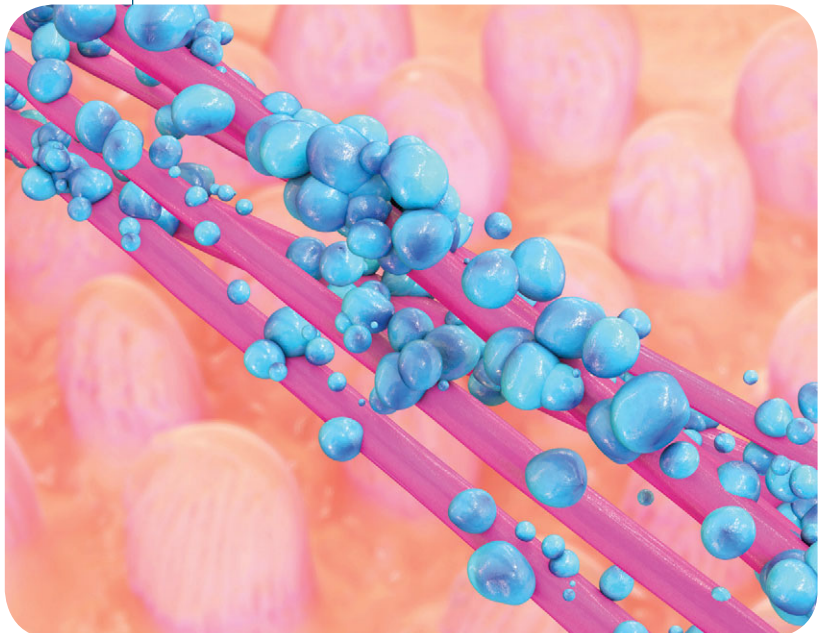
## Targeted Probiotics

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

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

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

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.<sup>43</sup>





## 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.<sup>44</sup> As a result, gastrointestinal secretions are as rich as breast milk in health-supporting and disease-preventing factors.<sup>45</sup>

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.<sup>46</sup> These friendly bacteria stimulate healthy immune surveillance, boosting populations of cells that seek out and destroy infecting organisms and cancers.<sup>47-49</sup> 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.<sup>48,50</sup>

## Reducing Cancer With Probiotics

The risk of cancer, especially in the colon, can be reduced through the use of probiotics.<sup>51</sup>

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.<sup>36</sup> 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.<sup>51-53</sup>

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).<sup>54</sup>



What You Need To Know

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

### 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.<sup>86</sup>

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.<sup>55-57</sup>

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.<sup>54</sup>

### 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).<sup>17,58-65</sup>

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!<sup>66</sup>





Human and animal studies show that probiotics also attenuate nonalcoholic fatty liver disease (NAFLD) due to obesity and a high-fat diet.<sup>33,67-71</sup>

### 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.<sup>72,73</sup>

*Lactobacillus* and *Bifidobacteria* have been shown to support intestinal function and improve both diarrhea and constipation.<sup>74-76</sup> 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.<sup>75,77-79</sup>

*Helicobacter pylori* is a common bacterium infecting about half of the world's population.<sup>80</sup> 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*.<sup>81</sup>

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.<sup>82</sup>

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.<sup>83-85</sup>

### 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!



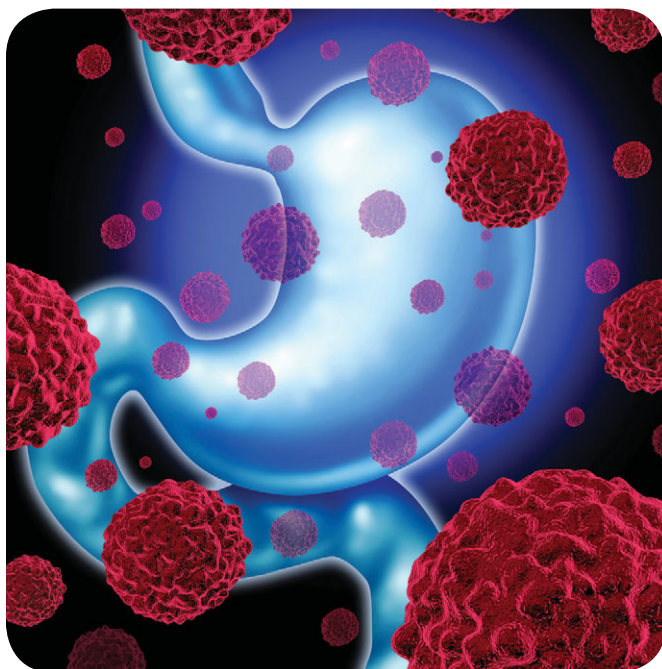
An increase in diseases is now linked to the increasingly distorted microbial balance in the human gut (known as dysbiosis). These diseases include type II diabetes, cancer, Crohn's disease, ulcerative colitis, celiac disease, nonalcoholic fatty liver disease, gastroenteritis, rheumatoid arthritis, asthma, 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.

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## The Powerful Role Of Probiotics In Cancer Prevention

As an example of the powerful effects of probiotics, have a look at their inhibitory effects against just one deadly disease: cancer. Scientists have demonstrated that probiotic organisms switch on your body's protective signaling mechanisms to:

- *Suppress* bacteria that convert pro-carcinogen molecules into carcinogens,<sup>48,55</sup>
- *Bind* to potential carcinogens, promoting their excretion,<sup>55</sup>
- *Decrease* enzymes implicated in the development of carcinogens,<sup>55</sup>
- *Boost* populations of immune cells that play a role in tumor inhibition,<sup>48,87</sup>
- *Upregulate* immune cytokines to battle the early stage of cancer or other threats,<sup>48</sup> and
- *Suppress* the inflammatory response as the cancer or infection threat fades.<sup>48,88</sup>

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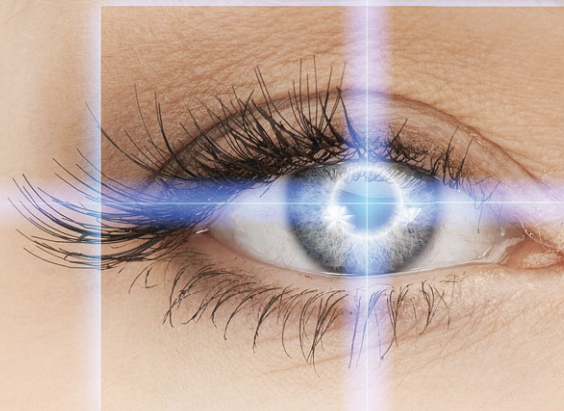
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Provides  
Powerful  
Eye Protection



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:<sup>1-7</sup>

- 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.**

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## MacuGuard® Ocular Support with Astaxanthin

Item #01886 • 60 softgels

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4 bottles		<b>\$28.50 each</b>

Suggested dose is one softgel daily with or without food. Each bottle of **MacuGuard** provides a **two-month** supply.

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To order **MacuGuard® Ocular Support with Astaxanthin**, call **1-800-544-4440** or visit **www.LifeExtension.com**



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**DHEA** PRODUCT!

# DHEA

## Supports Total-Body Health

**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.<sup>1-4</sup>

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 function<sup>5,6</sup>
- Support endothelial health by helping with blood flow<sup>7</sup>
- Promote insulin sensitivity<sup>8,9</sup>
- Benefit the normal aging brain<sup>10-12</sup>
- Improve mood and alleviate melancholy<sup>13</sup>
- Protect hip bone and spine bone mineral density<sup>14</sup>
- Enhance the increases in muscle mass and strength in the elderly with resistance exercise<sup>15</sup>
- Boost a broad array of immune system cells and signaling molecules<sup>16</sup>

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

	Retail Price	Your Price
1 bottle	\$18	<b>\$13.50</b>
4 bottles		<b>\$11.25 each</b>

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

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**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**

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 Most Advanced Probiotic On The Market



WITH UNIQUE  
DUAL  
ENCAPSULATION  
TECHNOLOGY

Scientists are increasingly discovering that probiotics impact the health of our entire body.<sup>1-6</sup> Unfortunately, most commercial probiotics are destroyed by the stomach's natural digestive acids before they reach their destination.<sup>7</sup>

**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.

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4 bottles		<b>\$21 each</b>

Non-GMO



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

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# 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<sup>1-10</sup> and promotion of brain health.<sup>11-32</sup>

Emerging evidence shows that consumption of omega-3s provides an even wider spectrum of critical health benefits.<sup>6,14,33-59</sup>

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

We at **Life Extension**<sup>®</sup> have long argued that optimal supplemental intake of **omega-3s** should be around **2,400 mg** of **EPA/DHA** per day.<sup>60</sup>

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.<sup>60</sup>

## 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.<sup>61,62</sup>

The latest fish oil harvesting strategy involves using fish obtained from pristine ocean waters that have lower levels of contaminants to begin with.



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 **cold extraction** process gently concentrates the fish oil to provide a **higher percentage** of EPA/DHA omega-3 fatty acids.
- 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.



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 milliequivalent** 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 milliequivalent** 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**.

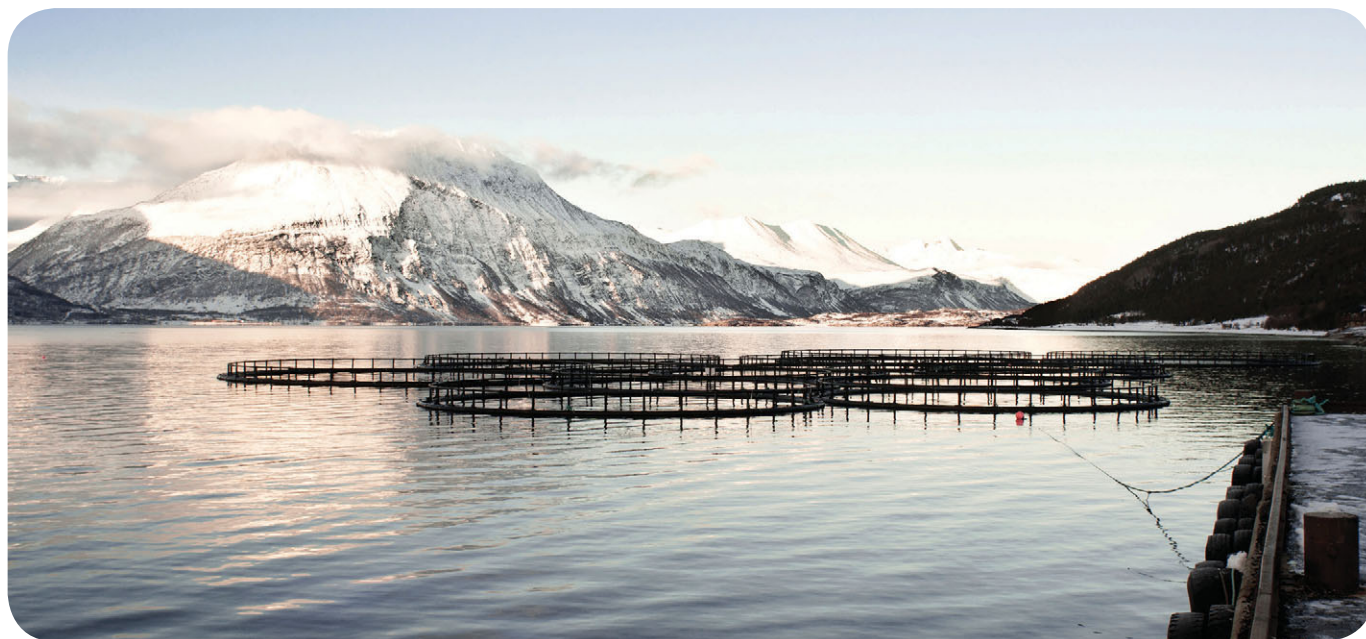
These ultra-low oxidation standards are obtained by using only freshly caught fish, carefully removing all traces of oxidation through multiple refining processes, and then aggressively purging **oxygen** using **nitrogen** and **argon** gases to prevent rancidity from initiating in storage. This ensures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

This 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.<sup>63</sup>

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 stan-**

**dard** 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!<sup>64</sup>

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.<sup>65</sup>

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.<sup>66</sup>

This fishing technique does not drag the bottom of the ocean indiscriminately, but is very specific, so that less than **1%** of the total catch consists of other species.<sup>67</sup>

Furthermore, most of the non-target species are other sustainably managed Alaskan fish, such as Cod or Salmon, not birds, sea lions, seals, or other apex predators. Bycatch is a huge problem for the health of sustainable fisheries around the world.<sup>68</sup>

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).<sup>69</sup>



## 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.

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# NEW HIGHLY PURIFIED ALASKAN FISH OIL

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.<sup>1</sup>

## 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:

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

## 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.<sup>2-4</sup>

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.<sup>5</sup> **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.<sup>6</sup>

### 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:

**Alaskan Wild Fish Oil Concentrate** 4,000 mg

**Omega-3s** 2,400 mg

EPA 1,400 mg

DHA 1,000 mg

**Polyphen-Oil™ Olive extract** (fruit and leaf) 600 mg

**Sesame seed lignan extract** 20 mg

To order Super Omega-3,  
call 1-800-544-4440 or  
visit [www.LifeExtension.com](http://www.LifeExtension.com)



#### Super Omega-3

Item #01982 • 120 softgels

	Retail Price	Your Price
1 bottle	\$32	\$24
4 bottles		\$21 each
10 bottles		\$17.05 each

#### Non-GMO

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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.



# BUILD BONE DENSITY AND INCREASE SKELETAL STRENGTH

With A Complete Combination  
of Critical Bone-Boosting Nutrients

**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 of 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.

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## Bone Restore with Vitamin K2

Item #01727 • 120 capsules

	Retail Price	Your Price
1 bottle	\$24	<b>\$18</b>
4 bottles		<b>\$16.50 each</b>



To order **Bone Restore**,  
call **1-800-544-4440** or visit  
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These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.



**H**undreds 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
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**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.

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Sensoril® Ashwagandha Extract	125 mg
BlueActiv™ Wild Blueberry Extract	150 mg
Uridine-5'-Monophosphate (disodium)	50 mg
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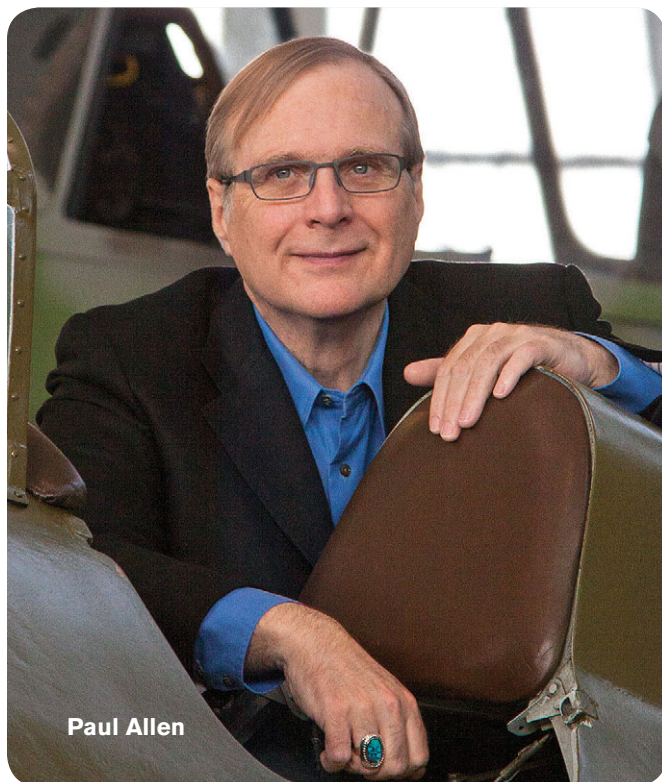


# Billionaire Philanthropists **FUNDING** Anti-Aging Research

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.



Paul Allen

### Rare Visionaries

Forty years ago, Paul Allen and Bill Gates co-founded Microsoft.<sup>2</sup> Today, Allen's net worth is \$17.5 billion,<sup>3,4</sup> and Gates' worth is \$79.2 billion<sup>5</sup>—the world's highest.

Allen donated \$100 million to establish the Allen Institute for Cell Science, which models the complex mechanisms of living cells.<sup>6</sup> 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.<sup>7</sup> However, this wealthiest of all of the world's charitable foundations, with assets exceeding \$42.3 billion,<sup>8</sup> 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.<sup>9</sup>

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.

### 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).<sup>10</sup>

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

Shouldn't the goal of the NIA be slowing down aging itself?<sup>12</sup>

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.<sup>13</sup>

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

### 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<sup>13</sup>—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.<sup>14</sup> 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.<sup>14</sup>

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.



## 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.<sup>15</sup>

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.<sup>16</sup>

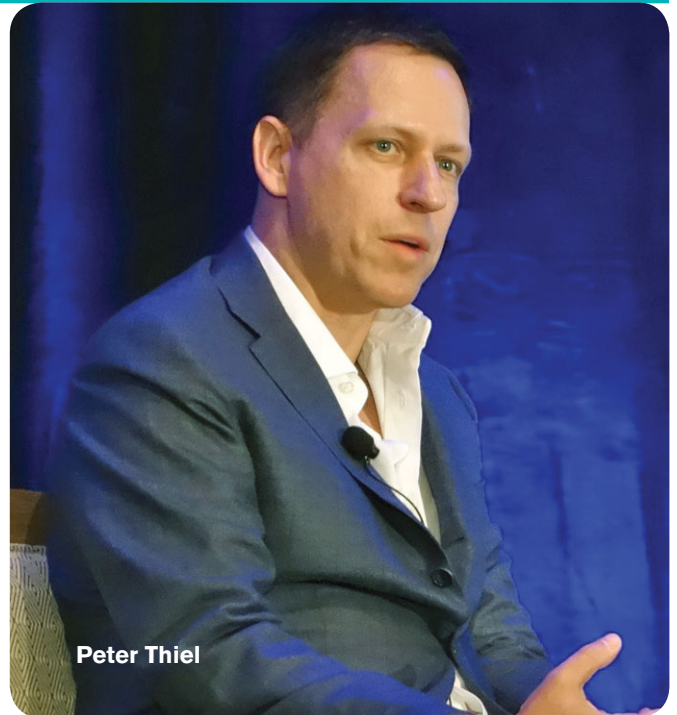
This study found that investing in delaying aging would increase the number of healthy adults over age 65 by more than 11 million by 2060—while investing in cures for the various diseases of aging would have an effect barely better than *doing nothing at all!*<sup>16</sup>

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.

### 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.



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Peter Thiel

### The Few Billionaires Who “Get It”

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

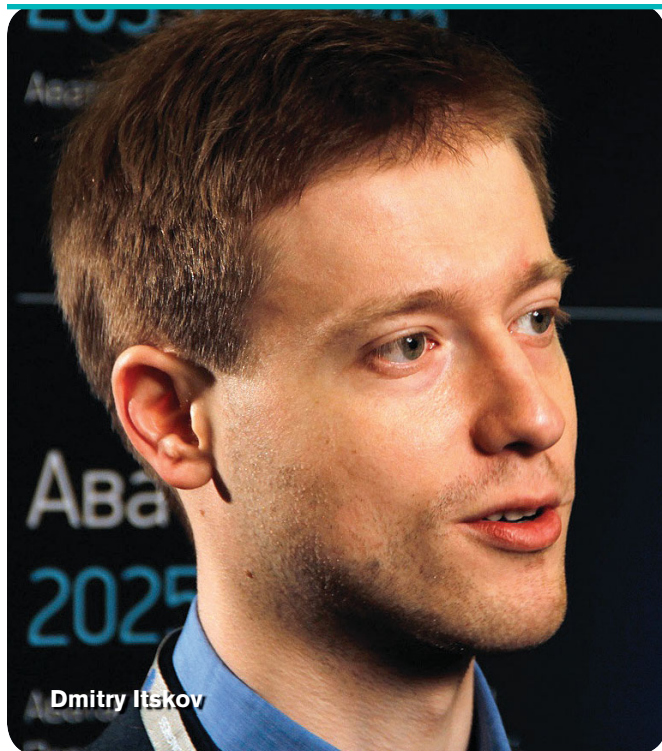
Pioneer biomedical gerontologist Aubrey de Grey—a Life Extension® Scientific Advisory Board member—serves as Chief Science Officer for SENS, which stands for Strategies for Engineered Negligible Senescence.<sup>19</sup> SENS research focuses on proposed techniques to rejuvenate the human body—with the 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.*”<sup>20</sup>

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.<sup>21</sup> 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.”<sup>18</sup>

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



Dmitry Itskov

**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.<sup>22</sup>

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.<sup>23</sup>

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.<sup>24</sup> 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."

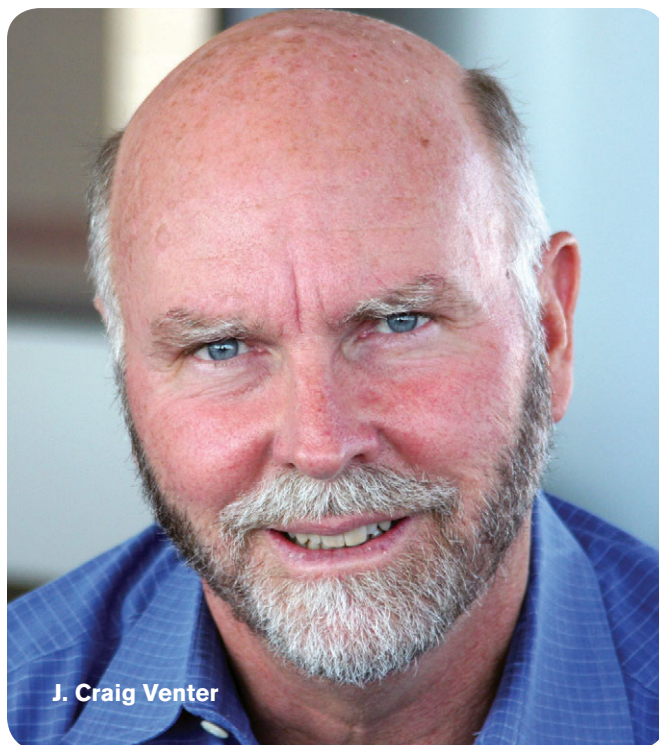
Itskov hopes to attract an international collaboration of scientists.<sup>24</sup> He maintains that avatars would not only end world hunger—machines need maintenance but not food—but would also usher in a peaceful era without the petty anxieties of day-to-day living that result from having a brief life span.<sup>23</sup>

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.<sup>22-24</sup>

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)<sup>33</sup> is an ambitious commercial venture to amass and electronically analyze the medical, genomic, microbiomic, and metabolic data<sup>34</sup> of 40,000 individuals every year—eventually, 100,000 individuals a year<sup>35</sup>—taken from people who are healthy and sick, infants to



J. Craig Venter



## 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.<sup>16</sup>

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.<sup>16</sup> 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.<sup>16</sup>

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.<sup>16</sup>

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.<sup>16</sup>

“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.<sup>55</sup>

“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.<sup>34</sup> 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.<sup>36,37</sup> 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.<sup>38</sup>

**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,<sup>39</sup> has donated nearly \$125 million to the Michael J. Fox Foundation and \$7 million to the Parkinson's Institute.<sup>40</sup>

One project is being conducted by 23andMe, co-founded by Brin's separated wife, Anne Wojcicki.<sup>41</sup> 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

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Sergey Brin

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.<sup>42,43</sup>

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.<sup>44</sup>

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

**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.”<sup>25</sup> But the biggest clue came from Calico CEO, Dr. Arthur Levinson, PhD,<sup>26,27</sup> who said that when he was asked to head Calico, “I was deeply intrigued.

For example, what underlies aging? Might there be a direct link between certain diseases and the aging process?”<sup>28,29</sup>

Since then, Calico has entered into a joint venture<sup>30</sup> with the pharmaceutical company AbbVie to build a new research facility to investigate age-related diseases, including neurodegeneration.<sup>31,32</sup>

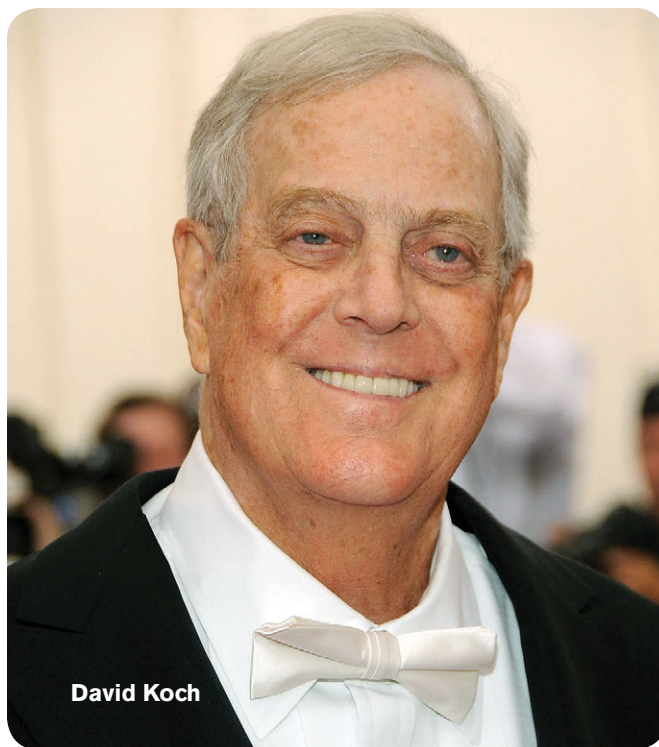
Longevity research might now benefit greatly from the typical Silicon Valley worldview that everything—even death—is solvable if you reduce it to data and then, throw enough processing power at it.

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



David Koch

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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 Grifol'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.<sup>50</sup> 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.<sup>51</sup> To put these millions into perspective, the couple has committed over \$1 billion to “social causes.”<sup>50</sup>

Worth over \$3 billion,<sup>52</sup> **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.<sup>53</sup> 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.<sup>54</sup>

**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.

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TAKE GAMMA TOCOPHEROL TO ENSURE YOU'RE GETTING

# THE MOST OPTIMAL FORM OF VITAMIN E

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

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**.<sup>2,3</sup>

## 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.\*

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.<sup>4,5</sup>

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.



## Gamma E Tocopherol with Sesame Lignans

Item #00759 • 60 softgels

	Retail Price	Your Price
1 bottle	\$32	<b>\$24</b>
4 bottles		<b>\$21.75 each</b>

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

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

# ENHANCE CELLULAR VITALITY

## 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.<sup>1-5</sup>
- **PQQ:** This breakthrough micronutrient has been shown to trigger the growth of new mitochondria in aging cells.<sup>16</sup> PQQ also activates genes involved in protecting the delicate structures within the mitochondria.<sup>7-10</sup>
- **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.<sup>11-16</sup>
- **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.<sup>16-19</sup> Benfotiamine protects endothelial cell integrity and promotes already healthy glucose levels. In addition, benfotiamine supports DNA function.<sup>20</sup>
- **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.<sup>21-24</sup>
- **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**.<sup>25-28</sup>
- **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.<sup>29</sup>

### Mitochondrial Energy Optimizer with BioPQQ®

Item #01768 • 120 capsules

	Retail Price	Your Price
1 bottle	\$94	\$70.50
4 bottles		\$58.50 each



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:

<b>Carnosine</b>	<b>1000 mg</b>
<b>ArginoCarn® Acetyl-L-carnitine arginate DiHCl</b>	<b>675 mg</b>
<b>R-Lipoic acid (as microencapsulated Bio-Enhanced®)</b>	<b>150 mg</b>
<b>Benfotiamine</b>	<b>150 mg</b>
<b>Vitamin B6 (as pyridoxal 5'-phosphate)</b>	<b>100 mg</b>
<b>BioPQQ® Pyrroloquinoline quinone disodium salt</b>	<b>10 mg</b>
<b>Luteolin</b>	<b>8 mg</b>
<b>Calcium</b>	<b>230 mg</b>
<b>Sodium</b>	<b>25 mg</b>

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**To order Mitochondrial Energy Optimizer with BioPQQ®, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)**

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



# Metabolically Active FOLATE

## Supports Cardiovascular Health

Folate helps maintain homocysteine levels within the normal range,<sup>1</sup> thereby promoting cardiovascular health.<sup>2</sup> Folate also supports neurotransmitter synthesis—which in turn helps maintain cognitive abilities.<sup>3</sup>

However, not everyone has sufficient activity of the **enzyme** required to convert folate to its biologically active form, **5-methyltetrahydrofolate**, or **5-MTHF**.<sup>4,5</sup>

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.<sup>6</sup> This unique compound requires no enzymatic conversion to become metabolically active<sup>6</sup>—providing maximum support for both cardiovascular and cognitive health.

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

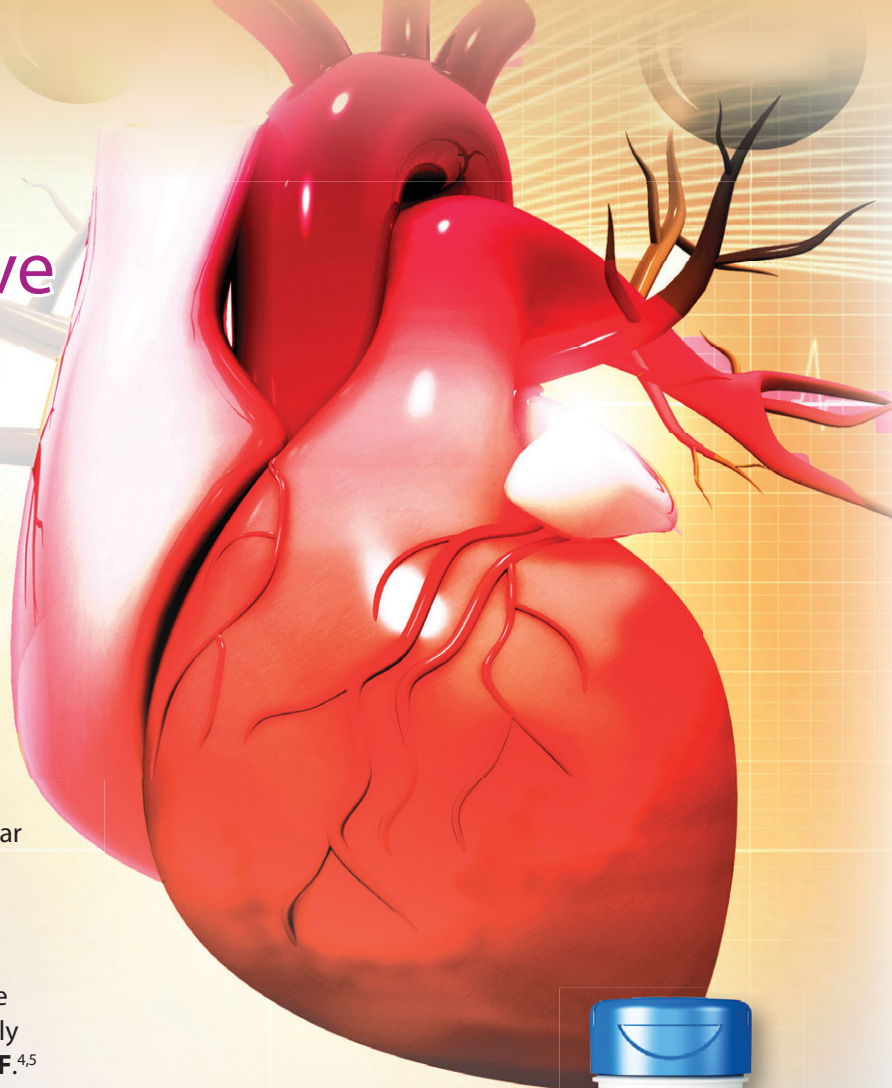
The demand for **5-MTHF** has surged as more consumers have discovered its potent **homocysteine-lowering** effects.

Non-GMO

Quatrefolic® is a registered trademark of Gnosis, S.p.A.  
Patent number 7,947,662.

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### Optimized Folate (1,000 mcg)

Item #01939 • 100 vegetarian tablets

	Retail Price	Your Price
1 bottle	\$19	<b>\$14.25</b>
4 bottles		<b>\$12.75 each</b>



### High Potency Optimized Folate (5,000 mcg)

Item #01913 • 30 vegetarian tablets

	Retail Price	Your Price
1 bottle	\$25	<b>\$18.75</b>
4 bottles		<b>\$16.50 each</b>



To order either of these **Optimized Folate** formulas, call **1-800-544-4440** or visit **www.LifeExtension.com**

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The bacteria *Helicobacter pylori* found in the stomach may lead to gastritis, ulcers, and stomach cancer.





# Natural Support For Stomach Health

The discovery that *H. pylori* infection leads to serious stomach problems enabled two scientists to win the Nobel prize for their breakthrough research.<sup>1-3</sup>

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

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

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*.

## Protecting Stomach Tissue From Excess Acid Production

Certain individuals have sensitivities that require them to take extraordinary measures to protect their stomach. This includes those who take drugs that damage the gastric lining, and/or suffer chronic gastric infection/inflammation that may lead to cancer.

The extreme acidity of the stomach provides a primary defense against infection and assists in the early stages of digestion. However, keeping these high levels of acidity in check represents a serious biological challenge—and the fact that the body meets this challenge could be described as miraculous.

First, the specialized surface mucous cells in the stomach's lining secrete a heavy coating of protective mucus. Second, a rapid turnover of cells in the lining itself keeps fresh cell troops always at the ready.

It's a great system for protecting delicate stomach tissue from the powerful acids it secretes and contains. This organized system, however, requires precise balance.

Any breach in these defenses rapidly grows into a major problem.

Virtually everyone has experienced at least mild gastritis, or the upset stomach that we commonly associate with overindulgence and stress. While these are usually thought of as annoyances, each episode causes a bit more lasting damage—eventually resulting in cellular injury, which in turn causes inflammation.<sup>6</sup>

This inflammation then produces free radicals that go on to create still more tissue destruction,<sup>7,8</sup> eventually damaging DNA and potentially leading to cancers of the stomach, which are among the most lethal malignancies.<sup>9-11</sup>

Infection with the *H. pylori* bacterium produces all these effects and more. In fact, *H. pylori* is now recognized as a major cause of stomach and upper intestinal disorders, including ulcers of the stomach and duodenum (the beginning of the small intestine), gastric cancer, and gastritis.<sup>12,13</sup>

Once *H. pylori* takes hold in the stomach lining, it relies on its elaborate defense mechanisms that allow it to survive the potent acids.<sup>14</sup>

The bacteria produces an influx of inflammatory cells by secreting powerful “virulence factors.”<sup>12</sup> In a microscopic one-two punch,<sup>15</sup> these bacterial proteins block normal function of free-radical scavengers, while boosting free-radical production from immune cells.<sup>16,17</sup> *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.<sup>12</sup>

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.<sup>18,19</sup>

## Zinc-Carnosine

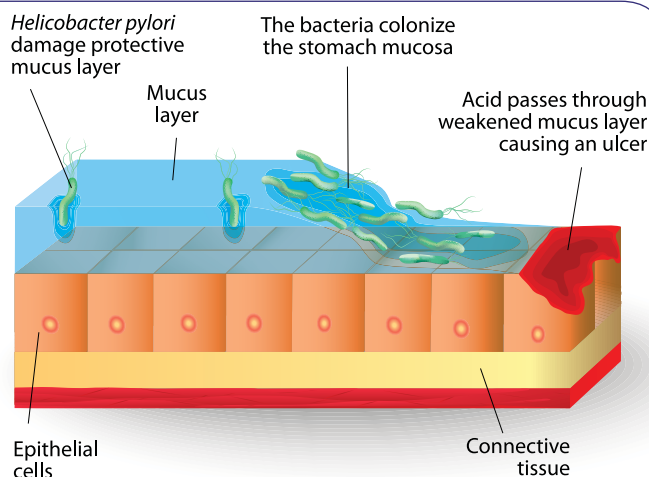
**Zinc** supplementation has been repeatedly shown to provide potent gastroprotective effects<sup>20,21</sup> and to improve the response to therapy of certain cancers.<sup>22</sup>

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.<sup>23,24</sup> 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.<sup>22,23</sup>

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.<sup>25</sup>

Some of the mechanisms behind zinc-carnosine's protective effects against ulcers were found to be its free-radical-neutralizing effects<sup>26,27</sup> and its capacity







to boost production of a growth factor that may be important for gastric wound repair.<sup>28,29</sup> Zinc-carnosine was also found to prevent the fragmentation of DNA in stomach-lining cells that can cause them to become cancerous.<sup>30</sup> 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.<sup>31,32</sup>

Additionally, this nutrient combination was shown to inhibit stomach inflammation and cytokine release caused by *H. pylori* infection<sup>33</sup> and to speed eradication of the infection itself<sup>34</sup>—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.<sup>35-40</sup>

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

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<sup>42,43</sup>—in the stomach mucosa and safely provides mucosal protective effects.<sup>44</sup>

A 2013 preclinical study published in *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).<sup>45</sup>

In a clinical trial, 10 healthy volunteers took **50 mg** of *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 **three** in the placebo group. But in the zinc-carnosine supplemented group, there was 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.<sup>41</sup>

**Zinc-carnosine** is one of the four important nutrients shown to protect gastric tissue from excess acid and the serious risks involved. Let's now examine the other three.

## What You Need To Know

### Natural Stomach Protection

- 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.
- Further magnifying these threats is the unrelenting spread of the ulcer-inducing agent *H. pylori*, now believed to affect up to 40 percent of Americans.
- 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.
- 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 *H. pylori* infection, and speed healing.



### Cranberries

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

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.<sup>49</sup>

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.<sup>50</sup>

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.*”<sup>51</sup>

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.*”<sup>52</sup>

### Licorice

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

These extracts were shown to be as effective as the NSAID diclofenac (Voltaren®) in reducing inflammation,<sup>56</sup> and human and animal studies demonstrated that deglycyrrhized licorice can reduce aspirin-induced damage to the stomach lining<sup>57</sup> and promote healing of duodenal ulcers.<sup>58</sup>

Researchers enrolled 100 patients with endoscopically confirmed gastric ulcers and gave them either a leading antacid medication or a deglycyrrhized 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 compound<sup>59</sup>—and there were still no differences even when long-term effects were examined in a follow-up study several years later.<sup>60</sup>

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.<sup>61</sup>



### Picrorhiza

Extracts of a perennial herb called picrorhiza (*Picrorhiza kurroa*), well-known in Ayurvedic medicine,<sup>62</sup> have been found to have potent free-radical-quenching,<sup>62-66</sup> immune-stimulating,<sup>67-70</sup> and anti-inflammatory<sup>71-74</sup> 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.<sup>75</sup>

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 **45%** in the picrorhiza subjects, compared to the untreated mice.<sup>76</sup>

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

### 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.

Worsening this scenario, the unrelenting spread of the ulcer-inducing agent *H. pylori* is now believed to affect up to **40%** of all Americans.

Fortunately, four natural nutrients provide safe, effective, synergistic support for stomach health, without the high cost and adverse side effects of over-the-counter and prescription stomach aids.

Zinc-carnosine, cranberry, licorice extract, and picrorhiza powerfully protect stomach tissue and protect it from acids, in turn helping to prevent cancer. They inhibit free-radical damage and inflammation, stimulate immunity, fight *H. pylori* infection, and hasten healing.

For convenience, consumers can now obtain the **zinc-carnosine** compound sold as a drug in Japan, along with standardized **cranberry**, **picrorhiza** and **licorice** in one low cost supplement. ●

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

### 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:

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

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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



supplement for their particular situation. They 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.



What You Need To Know

### 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

## 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.



doctors 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 if 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).

### Correcting An Onslaught Of Misinformation

While providing a wide range of information to customers is a critical part of Life Extension's mission, correcting misinformation is equally important.

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.

## Do You Have Questions You Think Are Odd Or Unusual?

Every day, we receive calls from customers that start, "This may seem like an odd question, but..." Yet the range of questions that the Life Extension health advisors hear is quite diverse. Here are just a few typical examples of questions we've received:

- Are there any supplement interactions with my medications?
- How does this Life Extension product compare with others on the market?
- What supplement should I take for my main health concern?
- Am I taking too many supplements—and how can I consolidate?
- What supplement form should I take—magnesium oxide, magnesium citrate, or magnesium threonate?
- How long until I see some benefits from this supplement?
- You have so many products, but what is the best one to support my...?
- I like this supplement, but is it safe to take more of it?
- Can you go over my blood work results with me?
- What blood tests should I have done?
- What do you think of this non-Life Extension product?
- Can I take a product that is past its expiration date?
- Can you find me a doctor in my area?
- How can I lose some weight?
- I'm always tired—how can I get more energy?
- How can I help boost my immune system?
- What can I do about my insomnia and stress?
- I'm concerned about my prostate (or breast) health—can you advise me?
- How can I support healthy glucose and cholesterol levels?
- What can I do to support healthy bones and joints?
- I have questions about cancer—and about radiation and chemotherapy.

Of course, for both moral and legal reasons, we cannot diagnose medical conditions over the phone or advise callers to discontinue medications prescribed by their doctor.

"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.

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# Pharmacist Exposes Side Effects Of Antidepressant Drugs And Reveals Natural Alternatives

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

BOOSTS BRAIN CELL REGENERATION  
& SUPPORTS WHOLE-BODY HEALTH

**Taurine**, a free amino acid, has been described by scientists as **"one of the most essential substances in the body."**<sup>1</sup> 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.<sup>2</sup>

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:<sup>3-9</sup>

- 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.

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### Taurine

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**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.<sup>1-3</sup>
- **AprèsFlex®** supports normal inhibition of 5-lipoxygenase or 5-LOX, an enzyme associated with undesirable cell division changes.<sup>4,5</sup>
- **Stinging and Dwarf nettle root extracts** help support prostate cells against excess estrogen levels.<sup>6,7</sup>
- **Saw Palmetto CO<sub>2</sub> extract** helps inhibit dihydrotestosterone (DHT) activity in the prostate, helps support normal urinary flow, and helps regulate inflammatory reactions in the prostate.<sup>8-11</sup>
- **Pygeum** extract helps suppress prostaglandin production in the prostate and supports healthy urination patterns.<sup>12,13</sup>
- **Pumpkin seed oil**, enhances the composition of free fatty acids and augments saw palmetto's benefits.<sup>14-16</sup>
- **Beta-sitosterol** enhances the protective effects of other botanical extracts and helps improve quality of life.<sup>17-19</sup>
- **Graminex® Flower Pollen Extract™**, has been shown to help relax the smooth muscles of the urethra and help regulate inflammatory reactions.<sup>20-22</sup>
- **Boron** has been shown to slow elevation of prostate-specific antigen (PSA).<sup>23-25</sup>
- **Lycopene** supports efficient cellular communication, helps maintain healthy DNA, regulates hormonal metabolism, and promotes healthy prostate size and structure.<sup>26-32</sup>
- **Phospholipids** enhance absorption of active compounds.

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- Contains soybeans.

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<b>Saw Palmetto CO<sub>2</sub> extract</b> (fruit) [providing 272 mg total fatty acids]	<b>320 mg</b>
<b>Graminex® Flower Pollen Extract™</b> (from rye)	<b>252 mg</b>
<b>Stinging and Dwarf nettle extracts</b> (root)	<b>240 mg</b>
<b>Beta-Sitosterol</b>	<b>180 mg</b>
<b>Phospholipids</b>	<b>160 mg</b>
<b>Pygeum extract</b> (bark)	<b>100 mg</b>
<b>Pumpkin seed oil</b> [providing 170 mg total fatty acids]	<b>200 mg</b>
<b>AprèsFlex® Indian frankincense</b> ( <i>Boswellia serrata</i> ) extract (gum resin) [providing 14 mg AKBA <sup>1</sup> ]	<b>70 mg</b>
<b>Proprietary Enterolactone Precursors Blend</b> [HMRlignan™ Norway spruce ( <i>Picea abies</i> ) (knot wood) and Flax (seed) lignan extracts]	<b>20.15 mg</b>
<b>Lycopene</b> [from natural tomato extract (fruit)]	<b>10 mg</b>
<b>Boron</b> (as Alibion® bororganic glycine)	<b>3 mg</b>

<sup>1</sup> 3-O-acetyl-11-keto-β-boswellic acid

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

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







# A Pioneering Treatment *For Scleroderma...* An Incurable Disease

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.



Dipnarine Maharaj, MD is a hematologist/oncologist with 37 years of clinical experience. Considered a pioneer in stem cell research, Dr. Maharaj has developed a **stem cell mobilizing treatment** that is producing impressive results and significant improvements in scleroderma patients.

This novel treatment utilizes a specialized protein that activates disease-fighting stem cells from the patient's bone marrow. In this way, the treatment regains the patient's control over their own immune system.

Dr. Maharaj believes this treatment could revolutionize not only the way we treat scleroderma—but many of the chronic diseases associated with aging.

### What Is Scleroderma?

Scleroderma is an autoimmune disease characterized by hardening and tightening of the skin and connective tissues in the body. “Sclero” is the Greek word for *hard*, and “derma” means *skin*. But don't let the name fool you. While hardening of the skin may be the most visible sign of the disease, it can also affect internal organs such as the esophagus, gastrointestinal tract, lungs, kidneys, and heart.

Excess collagen builds up in the skin or organs and causes extreme tightness, pain, and organ complications. As a result, the tissues or organs involved become hard and function less efficiently.

There is currently no cure for this debilitating disease. Since this is an autoimmune disorder (meaning the immune system attacks the person's own body), doctors often prescribe immunosuppressive drugs to help reduce the severity of the condition. These drugs can work in the short term, but over time, they stop working.

The only other option for these patients is to take drugs to treat the individual symptoms caused by the disease, such as taking antacids for heartburn, etc.

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.

“I’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.

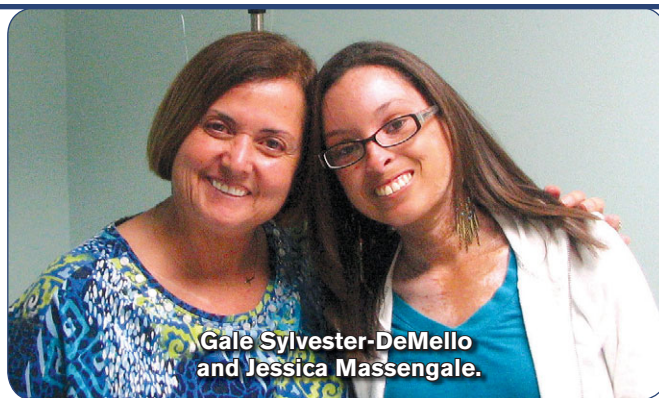
“My disease had progressed little by little,” said Jessica, “but it was at a point where I was really frightened at the direction the disease was taking me.”

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."

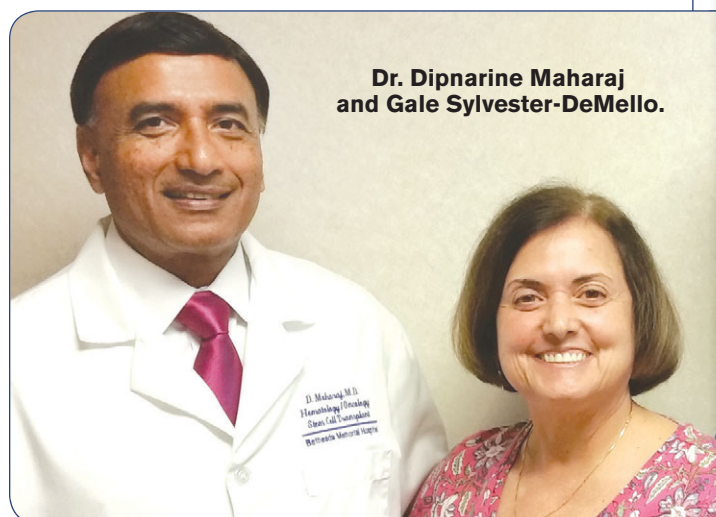
Diseases that have a basis of inflammation—such as heart, lung, autoimmune, and neurological diseases—are all examples of diseases that could be helped by the stem cell mobilization protocol. And in fact, they already have. According to Dr. Maharaj, he's seen improvements in patients with diabetes, Parkinson's,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



**Dr. Dipnarine Maharaj  
and Gale Sylvester-DeMello.**

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](http://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](http://www.scleroderma-strong.org).

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BY DONNA CARUSO



## Linda Reboh

### PIONEER WOMAN BODYBUILDER

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.

#### A Healthy Beginning

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-

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graphs reveals that, unlike professional women bodybuilders, Reboh doesn't have the bulging muscles and masculine bodies developed by most of those women. What she does have is a well-toned physique and the appearance of strength, youth, and vibrant good health.

"For me, it was definitely about my health," says Reboh. "Yes, you look good and you can look good for a long time, but my ultimate goal was to be healthy. So food was really important, too."

### A Nutritious Diet

Early family life provided a foundation for healthful eating, even though it took Reboh years to adopt it. "My parents didn't allow salt on the table and when I was a child, I'd open the refrigerator and find spinach and carrot juice in there. I wanted to be normal and they were not normal!"

But as an adult, Reboh began to read books by Adele Davis and Paavo Airola, which soon influ-

enced her food choices. "I realized how lucky I was that I came from a healthy diet." Today, Reboh eats lots of vegetables—and no red meat.

"I stopped eating red meat about 30 years ago," she explains. While she eats free-range organic chicken and wild salmon, she primarily eats vegetables.

A typical breakfast might be a shake of frozen kale, spinach, banana, spaghetti squash and a little chai, with different ingredients on other days. "When I look at food I ask, 'Is this healthy and does it taste good?' Because you can eat only so many calories a day." Reboh also measures her food and has been calculating the calories in everything she eats since the age of 12, noting that items such as nuts and wine are very high in calories.

At 12, her mother took her to a doctor because she had gained weight. "He was very wise and told me, 'If you keep gaining 25 pounds a year, by the time you're 25 years old, you're going to weigh four

thousand pounds.' I believed him and was scared. He showed me how to count my calories and I've been doing it ever since." Reboh says she eats about 2,000 calories daily and weighs a steady 120 pounds.

### Staying Young

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."

### Setting Goals

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](mailto:reboh@cox.net)





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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

1. *Am J Clin Nutr.* 1987;45:1305-12.
2. *Clinica Chimica Acta.* 2000;294:1-26.

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



### Magnesium Caps

Item #01459 • 100 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$12	\$9
4 bottles		\$7.50 each





## 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 where 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.<sup>1,2</sup> They play an important role in maintaining the skin's moisture balance and protecting the skin's surface.<sup>3</sup>

Unfortunately, your body's production of ceramides declines with age.<sup>4</sup> 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®** 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® ceramides** has proved effective in clinical trials.

## Just One Capsule Daily

Life Extension® has brought together these skin-nourishing oils in a concentrated **oral formula** called **Skin Restoring Phytoceramides with Lipowheat®**.

### References

1. *Biophys Chem.* 2010 Aug;150(1-3):144-56.
2. *Chemistry and Physics of Lipids.* Apr 2007; 146(2):67-75.
3. *Int J Cosmet Sci.* 2010 July 14.
4. Baran R, Maibach H, eds. *Textbook of Cosmetic Dermatology.* 3<sup>rd</sup> ed. Taylor & Francis; 2005:177.

Non-GMO

Contains wheat. Gluten-free.

Lipowheat® is a registered trademark of Arco, Robertet Group, France.



## Skin Restoring Phytoceramides with Lipowheat®

Item #01596 • 30 vegetarian liquid capsules

	Retail Price	Your Price
1 bottle	\$25	\$18.75
4 bottles		\$17.25 each

To order Skin Restoring  
Phytoceramides with Lipowheat®  
call 1-800-544-4440 or visit  
[www.LifeExtension.com](http://www.LifeExtension.com)

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



# 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.<sup>1,2</sup> 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**.<sup>1,2</sup>

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.<sup>2</sup>

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.

### Non-GMO

### References

1. *Phytomedicine*. 2008;15:783-92.
2. *Phytother Res*. 2014;28(2):212-8.

Sinetról™ is a trademark of Fytetia®.

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

## 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.<sup>1,2</sup>

**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 Sinetról™-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 Sinetról™-XPur

Item #01908 • 60 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$18	<b>\$13.50</b>
4 bottles		<b>\$12 each</b>



To order **Mediterranean Trim with Sinetról™-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.





## *SUPER* FOODS

BY MICHAEL DOWNEY



# 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.<sup>1</sup>

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.



## Rich Nutrient Content

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.<sup>2</sup>

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.<sup>3</sup>

Critically, avocado also contains a high supply of other mono-unsaturated 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.”<sup>2</sup> 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.<sup>1</sup>

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-O-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.<sup>4</sup> 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:<sup>4</sup>

- Alpha-carotene,
- Beta-carotene,
- Beta-cryptoxanthin,
- Chrysanthemaxanthin,
- 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.<sup>5</sup>

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.<sup>4</sup>

## Boosts Carotenoid Absorption From Other Foods

This fortunate matchup between the fatty acid and carotenoid profiles in avocado even extends to the relationship between avocado and other foods. Scientists conducted a two-phase clinical study that demonstrated the powerful effects of adding avocado to other foods. There was a two-week wash-out period before each part of this crossover design.<sup>1</sup>

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.



## The Healthiest Way To Peel And Eat Avocado

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.

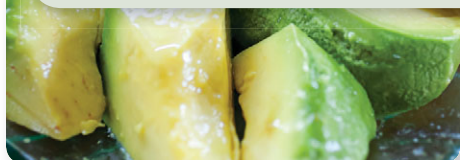
When eating a ripe avocado—with a greenish black peel—the best way to ensure that you do not lose the carotenoid-rich flesh just beneath the peel is to use what the California Avocado Commission calls the “nick-and-peel” method.

Rather than slice into the flesh with a knife, do this. Cut into the avocado lengthwise, producing two long avocado halves that are still connected in the middle by the seed or stone. Then, take hold of the avocado and twist the two halves in opposite directions and they should naturally separate. Pluck out the stone and cut each of the two halves lengthwise so that you now have four long sections.

Next, pick up one of the quarters and use your thumb and index finger to grip the very edge of the skin. You should be able to peel the skin off cleanly, as you would with a banana—leaving the carotenoid-rich flesh intact.

Store any unused quarters in the refrigerator wrapped in plastic bag. Sprinkling the exposed flesh with lemon juice or vinegar can help prevent the browning that can occur when the flesh comes in contact with oxygen in the air.

Properly ripened avocado flesh is creamy and spreadable. It is best eaten raw for full nutritional value. But if you do use avocado in a recipe that calls for heat, use the lowest possible temperature and the least amount of cooking time that will still work with your recipe—this will minimize damage to avocado’s unique fats. About 40 seconds of microwave heating on medium should not significantly change avocado’s fatty acid profile.



The addition of fresh avocado versus avocado oil made no difference to the carotenoid absorption-enhancement effect.<sup>1</sup>

Another phase of this study compared carotenoid absorption after consumption of salsa with and without the addition of either **150 grams** of fresh avocado or **24 grams** of avocado oil. After consumption of the avocado-added salsa, absorption of lycopene and beta-carotene was **440** and **260% times** the absorption of these carotenoids, respectively, from avocado-free salsa.<sup>1</sup>

## Avocado Promotes Healthier Joints

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.<sup>4</sup>

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.<sup>6</sup>

In other studies, certain avocado extracts known as **unsaponifiables** have been shown to improve osteoarthritis pain and overall disability in people with

hip or knee osteoarthritis, and may provide preventive effects when taken in the earliest stages of osteoarthritis.<sup>7-10</sup>

Avocado is high in the mineral boron. Research indicates that, in addition to preserving bone health, boron may help relieve the debilitating symptoms of osteoarthritis.<sup>11</sup> There appears to be an important role for boron in promoting healthy joint structure and function.<sup>12</sup>

### Vision Protection

As you might expect, any fruit packed with the carotenoids lutein and zeaxanthin is bound to promote eye health.

Researchers found that women who had higher intakes of lutein and zeaxanthin had a **23%** reduced risk of nuclear cataracts than women with lower levels. Also, lutein supplements given during a 12-week trial showed significant improvement in visual performance.<sup>13</sup>

In other research, diets rich in monounsaturated fatty acid—found in avocado—were shown to be protective of age-related eye dysfunction.<sup>2</sup>

### 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.<sup>13</sup>

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 vegeta-

bles commonly consumed raw, as is usually the case with avocado.<sup>14</sup>

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.<sup>5</sup>

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.<sup>15</sup>

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.<sup>16</sup>

### 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





folate 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.<sup>13</sup>

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.<sup>17</sup>

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**.<sup>18</sup>

## 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.<sup>19</sup> Monounsaturated fatty

## Nutritional Content Of California Avocado

The avocado is rich in monounsaturated fatty acids—including the powerful oleic acid also found in olive oil—as well as fiber, folate, glutathione, phytosterols, antioxidant flavonoids, and carotenoids.

Hass avocados from California are the smaller, darker variety with bumpy green skin. They have a higher nutrient content than Florida avocados, which are larger, and have smoother skin and higher water content.

One cup (**230 grams**) of raw California avocado provides the following:<sup>25</sup>

		Percent Daily Value
Calories	384	
Calories from fat	297	
Total carbohydrate	19.9 g	7%
Saturated fat	4.9 g	24%
Monounsaturated fat	22.5 g	
Polyunsaturated fat	4.2 g	
Omega-3 fatty acid	253 mg	
Omega-6 fatty acid	3,886 mg	
Cholesterol	0.0 g	0%
Dietary fiber	15.6 g	63%
Protein	4.5 g	9%
Sodium	18.4 mg	1%
Vitamin K	48.3 mcg	60%
Folate	205 mcg	51%
Pantothenic acid	3.4	34%
Vitamin B6	0.7 mg	33%
Vitamin E (alpha-tocopherol)	4.5 mg	23%
Boron	1,668 mcg	
Potassium	1,166 mg	33%

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.<sup>20</sup>

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.<sup>21</sup>

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 oleoylethanolamide (OEA), a lipid compound that activates a brain area responsible for greater feelings of satiety. This compound modulates feeding, body weight, and lipid metabolism.<sup>22,23</sup>

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.<sup>24</sup>

## 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.<sup>2</sup>

The monounsaturated fatty acids abundant in avocado moisturize skin from the inside. Its vitamin E, carotenoid, and glutathione scavenge 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.<sup>2</sup>

## 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.

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# 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.<sup>1,2</sup>

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

- Enhance heart health<sup>3</sup>
- Maintain brain function<sup>4,5</sup>
- Sustain healthy blood sugar levels already within normal range<sup>6</sup>
- Support smooth firm skin<sup>7</sup>
- Maintain a healthy weight<sup>8</sup> and stable cholesterol levels already within normal range<sup>9</sup>

**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.<sup>10</sup> 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

	Retail Price	Your Price
1 bottle	\$22.50	<b>\$16.88</b>
4 bottles		<b>\$15 each</b>

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

### References

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### Non-GMO

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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.



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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.

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# Blood Testing The Ultimate Information

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- |  |  |
|--|--|
| <p><b>○ COMPREHENSIVE PANELS</b></p> <p><b>○ MALE LIFE EXTENSION PANEL (LC322582) \$269</b><br/> <b>Chemistry Profile</b> includes glucose, cholesterol, LDL, HDL, triglycerides, liver and kidney function tests PLUS 20 additional tests. <b>CBC</b> includes immune (white) cell count, red blood cell count and platelet count. Also includes:<br/> <b>DHEA-S</b><br/> <b>TSH</b> for thyroid function<br/> <b>Estradiol</b><br/> <b>Vitamin D 25-hydroxy</b><br/> <b>Hemoglobin A1c</b></p> | <p><b>○ MALE COMPREHENSIVE HORMONE PANEL* \$299</b><br/> <b>(LC100010)</b> CBC/Chemistry Profile (see description above right), DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.</p>   |
| <p><b>○ FEMALE LIFE EXTENSION PANEL (LC322535) \$269</b><br/> <b>Chemistry Profile</b> includes glucose, cholesterol, LDL, HDL, triglycerides, liver and kidney function tests PLUS 20 additional tests. <b>CBC</b> includes immune (white) cell count, red blood cell count and platelet count. Also includes:<br/> <b>DHEA-S</b><br/> <b>TSH</b> for thyroid function<br/> <b>Estradiol</b><br/> <b>Progesterone</b><br/> <b>Hemoglobin A1c</b></p>  | <p><b>THE CBC/CHEMISTRY PROFILE (LC381822) \$35</b><br/> <b>Note:</b> This CBC/Chemistry Profile is included in many Life Extension panels. Please check panel descriptions.</p> <p><b>CARDIOVASCULAR RISK PROFILE</b><br/>           Total Cholesterol<br/>           HDL Cholesterol<br/>           LDL Cholesterol<br/>           Triglycerides<br/> <b>LIVER FUNCTION PANEL</b><br/>           AST (SGOT)<br/>           ALT (SGPT)<br/>           LDH<br/> <b>KIDNEY FUNCTION PANEL</b><br/>           BUN<br/>           Creatinine<br/> <b>BLOOD PROTEIN LEVELS</b><br/>           Total Protein<br/>           Albumin<br/> <b>BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE</b><br/>           Red Blood Cell Count<br/>           White Blood Cell Count<br/>           Eosinophils<br/>           Basophils<br/>           Polys (Absolute)<br/>           Lymphs (Absolute)<br/>           Monocytes (Absolute)<br/>           Eos (Absolute)<br/>           Baso (Absolute)<br/>           RDW<br/> <b>BLOOD MINERAL PANEL</b><br/>           Calcium<br/>           Potassium<br/>           Phosphorus</p> |
| <p><b>○ WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028) \$275</b><br/>           CBC/Chemistry profile (see description at right), DHEA-S, free and total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Free T4, Reverse T3, Insulin, Hemoglobin A1c, Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), and Ferritin.</p>   | <p><b>○ MALE ELITE PANEL* (LC100016) \$575</b><br/>           Chem/CBC profile, Free and Total Testosterone, Total Estrogens, Estradiol, DHEA-S, Progesterone, Pregnenolone, DHT, FSH, LH, TSH, Free T3, Free T4, Reverse T3, Free and Total PSA, IGF-1, SHBG, Vitamin D 25-OH, hs-CRP, Ferritin, Homocysteine</p>   |
| <p><b>○ FEMALE ELITE PANEL* (LC100017) \$575</b><br/>           Chem/CBC profile, Free and Total Testosterone, Total Estrogens, Estradiol, Estrone, DHEA-S, Progesterone, Pregnenolone, DHT, FSH, LH, TSH, Free T3, Free T4, Reverse T3, IGF-1, SHBG, Vitamin D 25-OH, hs-CRP, Ferritin, Homocysteine</p>  | <p><b>○ COMPREHENSIVE THYROID PANEL \$199</b><br/> <b>(LC100018)</b><br/>           TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA</p>  |
| <p><b>○ MALE HORMONE ADD-ON PANEL (LCADDM)* \$120</b><br/> <b>Pregnenolone and Dihydrotestosterone (DHT)</b><br/>           To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel. This panel provides valuable information about a testosterone metabolite that can affect the prostate, and the mother hormone that acts as a precursor to all other hormones.</p>                        | <p><b>○ FOOD SAFE ALLERGY TEST** (LCM73001) \$198</b><br/>           This test measures delayed (IgG) food allergies for 95 common foods.</p>  |
| <p><b>○ FEMALE HORMONE ADD-ON PANEL (LCADDF)* \$125</b><br/> <b>Pregnenolone and Total Estrogens</b><br/>           To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides valuable information about total estrogen status, and the mother hormone that acts as a precursor to all other hormones.</p>   | <p><b>○ STRESS MANAGEMENT PROFILE (LC100043) \$125</b><br/>           Cortisol AM/PM, DHEA-S, Glucose, Insulin, Progesterone, Free T3, Lipid Panel</p>   |
| <p><b>○ LIFE EXTENSION THYROID PANEL (LC304131) \$75</b><br/>           TSH, T4, Free T3, Free T4.</p>   | <p><b>○ HEALTHY AGING PANEL-COMPREHENSIVE* (LC100026) \$249</b><br/>           CBC/Chemistry profile (see description above), C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Homocysteine, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Free T3, Free T4, Ferritin, Urinalysis, Fibrinogen, and Insulin.</p>  |
| <p><b>○ FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) \$299</b><br/>           CBC/Chemistry Profile (see description above right), DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.</p>   | <p><b>○ HEALTHY AGING PANEL-BASIC* (LC100025) \$149</b><br/>           CBC/Chemistry profile (see description above), C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Ferritin, and Insulin.</p>  |
|  | <p><b>○ VAP™ TEST* (LC804500) \$90</b><br/>           The VAP™ cholesterol test provides a more comprehensive coronary heart disease (CHD) risk assessment than the conventional lipid profile. Direct measurements, not estimations, are provided for total cholesterol, LDL, HDL, VLDL, and cholesterol subclasses.</p>  |
|  | <p><b>○ VAP™ PLUS* (LC100009) \$330</b><br/>           VAP, C-Reactive Protein (high sensitivity), Homocysteine, Fibrinogen, PLAC® Test (Lp-PLA2), Vitamin D 25-hydroxy.</p>   |





## Other Popular Tests and Panels

- |   |              |   |   |
|---|--------------|---|---|
| <input type="radio"/> <b>NUTRIENT PANEL* (LC100024)</b>   | <b>\$349</b> | <input type="radio"/> <b>HORMONES</b>                                       | <b>\$61</b>   |
| Vitamin B12, Folate, Vitamin D 25-hydroxy, Vitamin C, Vitamin A, Selenium, Zinc, CoQ10, and RBC Magnesium.  |              | <input type="radio"/> <b>DHEA-SULFATE (LC004020)</b>                        | This test shows if you are taking the proper amount of DHEA. This test normally costs \$100 or more at commercial laboratories. |
| <input type="radio"/> <b>CHRONIC FATIGUE PROFILE (LC100005)</b>   | <b>\$375</b> | <input type="radio"/> <b>MALE BASIC HORMONE PANEL (LC100012)</b>            | <b>\$75</b>   |
| 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. |              | <input type="radio"/> <b>FEMALE BASIC HORMONE PANEL (LC100013)</b>          | <b>\$75</b>   |
| <input type="radio"/> <b>ANEMIA PANEL* (LC100006)</b>   | <b>\$79</b>  | <input type="radio"/> <b>DIIHYDROTESTOSTERONE (DHT)* (LC500142)</b>         | <b>\$50</b>   |
| CBC/Chemistry Profile (see description previous page), Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate, Reticulocyte Count.   |              | <input type="radio"/> <b>ESTRADIOL (LC004515)</b>                           | <b>\$33</b>   |
| <input type="radio"/> <b>AUTOIMMUNE DISEASE SCREEN* (L100041)</b>   | <b>\$199</b> | <input type="radio"/> <b>INSULIN FASTING (LC004333)</b>                     | <b>\$29.90</b>  |
| ANA screen, hs-CRP, TNF, Immunoglobulins, IgA, IgG, IgM   |              | <input type="radio"/> <b>PREGNENOLONE* (LC140707)</b>                       | <b>\$116</b>  |
| <input type="radio"/> <b>DIABETES MANAGEMENT PROFILE – COMPREHENSIVE (LC100040)</b>   | <b>\$129</b> | <input type="radio"/> <b>PROGESTERONE (LC004317)</b>                        | <b>\$55</b>   |
| Hemoglobin A1C, Glucose, Insulin, Lipid Panel, Glycomark  |              | <input type="radio"/> <b>SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016)</b> | <b>\$33</b>   |
| <input type="radio"/> <b>DIABETES MANAGEMENT PROFILE – BASIC (LC100039)</b>   | <b>\$39</b>  | <input type="radio"/> <b>VITAMIN D (25OH) (LC081950)</b>                    | <b>\$47</b>   |
| Hemoglobin A1C, Glucose, Insulin  |              | <input type="radio"/> <b>FERRITIN (LC004598)</b>                            | <b>\$28</b>   |
| <input type="radio"/> <b>ADVANCED CARDIAC BIOMARKERS</b>  |              | <input type="radio"/> <b>VITAMIN B12/FOLATE* (LC000810)</b>                 | <b>\$39.68</b>  |
| <input type="radio"/> <b>ADVANCED OXIDIZED LDL PANEL* (LC100035)</b>  | <b>\$285</b> | <input type="radio"/> <b>PSA (PROSTATE SPECIFIC ANTIGEN) (LC010322)</b>     | <b>\$31</b>   |
| 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.  |              |   |   |
| <input type="radio"/> <b>OXIDIZED LDL PANEL* (LC100034)</b>   | <b>\$175</b> |   |   |
| 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.   |              |   |   |
| <input type="radio"/> <b>OXIDIZED LDL* (LC817472)</b>   | <b>\$75</b>  |   |   |
| OxLDL is a powerful initiator of inflammatory changes in the artery wall, which eventually lead to the formation of plaque.   |              |   |   |



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TruFiber™  
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D-Ribose Tablets  
Forskolin  
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Mitochondrial Energy Optimizer with BioPQQ®  
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Peak ATP® with GlycoCarn®  
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## Fish Oil & Omegas

Mega 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, Krill & Astaxanthin  
Organic Golden Flax Seed  
Provinal® 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 InSea2® and Crominex® 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 GlycoCarn®  
Super Ubiquinol CoQ10  
Super Ubiquinol CoQ10 with BioPQQ®  
Super Ubiquinol CoQ10 with Enhanced  
Mitochondrial Support™  
Super-Absorbable CoQ10 Ubiquinone  
with  $\alpha$ -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  
i26 Hyperimmune Egg  
Immune Modulator with Tinofend®  
Immune Protect with PARACTIN®  
Immune Senescence Protection Formula™  
Kyolic® Garlic Formula 102  
Kyolic® Garlic Formula 105  
Kyolic® Reserve  
Lactoferrin (apolactoferrin) Caps  
NK Cell Activator™  
Optimized Garlic  
Optimized Quercetin  
Peony Immune  
ProBoost Thymic Protein A  
Reishi Extract Mushroom Complex  
Standardized Cistanche  
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 Suppress™ with EGCG  
Nervia®  
Serrafazyme  
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-Glucarate  
Chlorella  
Chlorophyllin  
European Milk Thistle  
Glutathione, Cysteine & C  
HepatoPro  
Liver Efficiency Formula  
Mega L-Glutathione Capsules  
N-Acetyl-L-Cysteine  
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  
Whole 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  
Triple Strength ProstaPollen™  
Ultra Natural Prostate

### Minerals

Boron  
Chromium Ultra  
Copper  
Iron Protein Plus  
Magnesium (Citrate)  
Magnesium Caps  
Only Trace Minerals  
Optimized Chromium with Crominex® 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 without Copper  
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

Hair Suppress Formula  
Life Extension Toothpaste  
Sinus Cleanser  
Venotone  
Xyliwhite Mouthwash

### 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 Rejuvenating Anti-Oxidant Cream  
Fine Line-Less  
Healing Formula  
Healing Mask  
Healing Vitamin K Cream  
Hyaluronic Facial Moisturizer  
Hyaluronic Oil-Free Facial Moisturizer  
Hydrating Anti-Oxidant Facial Mist  
Hydroderm  
Lifting & Tightening Complex  
Lycopene Cream  
Melatonin Cream  
Mild Facial Cleanser  
Neck Rejuvenating Anti-Oxidant Cream  
Pigment Correcting Cream  
Rejuvenating Serum  
Rejuvenex® Body Lotion  
Rejuvenex® Factor Firming Serum  
Renewing Eye Cream  
Resveratrol Anti-Oxidant Serum  
Skin Lightening Serum  
Skin Restoring Phytoceramides with Lipowheat®  
Skin Stem Cell Serum  
Stem Cell Cream with Alpine Rose  
Tightening & Firming Neck Cream  
Ultra Lip Plumper  
Ultra Rejuvenex®  
Ultra RejuveNight®  
Ultra Wrinkle Relaxer  
Under Eye Refining Serum  
Under Eye Rescue Cream  
Vitamin C Serum  
Vitamin D Lotion  
Vitamin E-ssential Cream  
Youth Serum

### Sleep

Bioactive Milk Peptides  
Enhanced Natural Sleep® with Melatonin  
Enhanced Natural Sleep® without Melatonin

Fast-Acting Liquid Melatonin  
Glycine  
L-Tryptophan  
Melatonin  
Optimized Tryptophan Plus

### Sports Performance

Creatine Capsules  
Creatine Whey Glutamine Powder  
(Vanilla Flavor)  
DMG (N, N-dimethylglycine)  
New Zealand Whey Protein Concentrate,  
(Natural 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  
HCAActive™ Garcinia Cambogia Extract  
Integra-Lean®  
Mediterranean Trim with Sinetrol™-XPur  
Optimized Irvingia with Phase 3™ Calorie  
Control Complex  
Optimized Saffron with Satiereal®  
Super Citrimax®  
Super CLA Blend with Guarana 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  
Femmenessence MacaPause®  
Natural Estrogen without Soy Isoflavones  
Natural Estrogen  
ProgestaCare® for Women  
Super-Absorbable Soy Isoflavones  
Ultra Soy Extract

		YOUR PRICE					
ITEM No.	PRODUCT	Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	QTY	Total
A							
01524	ACETYL-L-CARNITINE • 500 mg, 100 veg. caps	34.00	25.50	22.50			
01525	ACETYL-L-CARNITINE ARGINATE • 100 veg. caps	59.00	44.25	38.24			
01628	ADRENAL ENERGY FORMULA • 60 veg. caps	24.00	18.00	16.50			
01630	ADRENAL ENERGY FORMULA • 120 veg. caps	46.00	34.50	31.50			
01828	ADVANCED LIPID CONTROL • 60 veg. caps	30.00	22.50	20.25			
01521	ADVANCED ORAL HYGIENE • 60 mint lozenges	20.00	15.00	13.50			
00681	AHCC® • 500 mg, 30 caps	59.98	44.99				
00457	ALPHA-LIPOIC ACID W/Biotin (Super) • 250 mg, 60 caps	37.00	27.75	24.00			
01907	AMPK ACTIVATOR • 90 veg. caps	48.00	36.00	33.00			
01440	ANTI-ALCOHOL ANTIOXIDANTS W/HEPATOPRO • 100 caps	26.00	19.50	17.25			
01509	ANTI-ADIPOCYTE FORMULA W/MERATRIM® & INTEGRA LEAN® (Advanced) • 60 veg. caps	39.00	29.25	27.00			
01625	APPLEWISE POLYPHENOL EXTRACT 600 mg, 30 veg. caps	21.00	15.75	14.25			
01039	ARGININE/ORNITHINE • 500/250, 100 caps	17.99	13.49				
00038	ARGININE/ORNITHINE POWDER • 150 grams	22.95	17.21	14.25			
01624	(L)-ARGININE CAPS • 700 mg, 200 veg. caps	26.50	19.88	17.44			
01617	ARTHRONAX® W/THEAFLAVINS & APRÈSFLEX® 120 veg. caps	44.00	33.00	30.00			
01618	ARTHRONAX® ADVANCED W/UC-II® & APRÈSFLEX® 60 caps	36.00	27.00	24.00			
01404	ARTHRO-IMMUNE JOINT SUPPORT • 60 veg. caps	32.00	24.00	21.00			
00919	ARTICHOKE LEAF EXTRACT • 500 mg, 180 veg. caps	30.00	22.50	21.00			
01533	ASCORBYL PALMITATE • 500 mg, 100 veg. caps	22.50	16.88	15.00			
00888	ASHWAGANDHA EXTRACT (Optimized) • 60 veg. caps	10.00	7.50	6.75			
01805	ASIAN ENERGY BOOST • 90 veg. caps	24.00	18.00	16.50			
01066	ASPIRIN • 81 mg, 300 enteric coated tablets	6.00	4.50	4.00			
01720	ASTAXANTHIN WITH PHOSPHOLIPIDS • 4 mg, 30 softgels	16.00	12.00	10.50			
B							
00920	BENFOTIAMINE W/ THIAMINE • 100 mg, 120 veg. caps	19.95	14.96	13.95			
00925	BENFOTIAMINE (Mega) • 250 mg, 120 veg. caps	30.00	22.50	20.25			
01206	BERRY COMPLETE • 30 veg. caps	21.00	15.75	14.00			
01496	BERRY COMPLETE W/ACAI (Enhanced) • 60 veg. caps	29.00	21.75	19.50			
00664	BETA-CAROTENE • 25,000 IU, 100 softgels	11.25	8.44				
01622	BIFIDO GI BALANCE • 60 veg. caps	20.00	15.00	13.50			
01073	BILBERRY EXTRACT • 100 mg, 100 veg. caps	42.00	31.50	28.50			
01512	BIOACTIVE MILK PEPTIDES • 30 caps	18.00	13.50	12.00			
01631	BIO-COLLAGEN W/PATENTED UC-II® • 40 mg, 60 small caps	36.00	27.00	24.00			
*01006	BIOSIL™ • 5 mg, 30 veg. caps	18.95	15.16				
*01007	BIOSIL™ • 1 fl oz	31.99	25.59				
00102	BIOTIN • 600 mcg, 100 caps	7.50	5.63	4.88			
01709	BLACK CUMIN SEED OIL • 60 softgels	16.00	12.00	10.50			
01710	BLACK CUMIN SEED OIL W/BIO-CURCUMIN® • 60 softgels	32.00	24.00	22.50			
01008	BLAST™ • 600 grams of powder	26.95	20.21				
70000	BLOOD PRESSURE MONITOR (ACCUFIT™) • med/lg cuff	79.99	49.99				
70004	BLOOD PRESSURE MONITOR • Digital wrist cuff	69.95	52.46				
01214	BLUEBERRY EXTRACT • 60 veg. caps	22.50	16.88	15.00			
SUB-TOTAL OF COLUMN 1							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01438	BLUEBERRY EXTRACT W/ POMEGRANATE • 60 veg. caps	30.00	22.50	20.25			
01506	BONE FORMULA (DR. STRUM'S INTENSIVE) • 300 caps	56.00	42.00	37.50			
01726	BONE RESTORE • 120 caps	22.00	16.50	14.25			
01727	BONE RESTORE W/VITAMIN K2 • 120 caps	24.00	18.00	16.50			
01725	BONE STRENGTH FORMULA W/KOACT® • 120 caps	45.00	33.75	30.00			
00313	BONE-UP® • 240 caps	28.95	21.71	20.41			
01661	BORON • 3 mg, 100 veg. caps	5.95	4.46	3.94			
00202	BOSWELLA • 100 caps	38.00	28.50	22.50			
01802	BRAIN SHIELD® GASTRODIN • 300 mg, 60 veg. caps	33.00	24.75	22.50			
01253	BRANCHED CHAIN AMINO ACIDS • 90 caps	19.50	14.63	12.75			
01699	BREAST HEALTH FORMULA • 60 caps	34.00	25.50	22.50			
00893	BRITE EYES III • 2 vials, 5 ml each	34.00	25.50	24.00			
01203	BROMELAIN (Specially-coated) 500 mg, 60 enteric coated tablets	21.00	15.75	14.25			
<b>C</b>							
01653	CALCIUM CITRATE W/VITAMIN D • 300 caps	24.00	18.00	15.94			
01651	CALCIUM D-GLUCARATE • 200 mg, 60 veg. caps	18.00	13.50	11.25			
01823	CALREDUCE SELECTIVE FAT BINDER 120 mint chewable tablets	45.00	33.75	28.50			
01700	CARDIO PEAK™ w/STANDARDIZED HAWTHORN & ARJUNA 120 veg. caps	36.00	27.00	24.00			
00916	CARNITINE W/GLYCOCARN® (Optimized) • 60 veg. caps	36.00	27.00	24.00			
01532	L-CARNITINE • 500 mg, 30 veg. caps	15.00	11.25	9.90			
01258	CARNOSOOTHE W/PICROPROTECT™ • 60 veg. caps	29.95	22.46	20.25			
01829	CARNOSINE • 500 mg, 60 veg. caps	36.00	27.00	24.00			
01687	CARNOSINE (Super) • 500 mg, 90 veg. caps	66.00	49.50	45.00			
01830	CAT MIX • 100 grams powder	14.00	10.50	8.25			
01891	CHILDREN'S FORMULA LIFE EXTENSION MIX™ 100 chewable tablets	20.00	15.00	13.50			
00550	CHLORELLA • 500 mg, 200 tablets	23.50	17.63				
01571	CHLOROPHYLLIN • 100 mg, 100 veg. caps	24.00	18.00	15.00			
01359	CHO-LESS™ • 90 capsules	35.00	26.25				
01910	CHOL-SUPPORT™ • 60 liquid veg. caps	52.00	39.00	34.50			
01477	CHROMIUM ULTRA • 100 veg. caps	24.00	18.00	15.75			
01504	CHROMIUM W/CROMINEX® 3+ (Optimized) 500 mcg, 60 veg. caps	9.00	6.75	6.00			
01503	CINSULIN® W/INSEA2® AND CROMINEX® 3+- 90 veg. caps	38.00	28.50	25.50			
01906	CISTANCHE (Standardized) • 30 veg. caps	20.00	15.00	12.00			
01818	CITRIMAX® (Super)- 180 veg. caps	40.00	30.00	28.50			
00818	CLA BLEND W/SESAME LIGNANS (Super) 1,000 mg, 120 softgels	36.00	27.00	24.75	19.75		
00819	CLA BLEND W/GUARANA & SESAME (Super) 1,000 mg, 120 softgels	42.00	31.50	28.75			
01896	COGNITEX® W/BRAIN SHIELD® • 90 softgels	60.00	45.00	39.00	36.00		
01897	COGNITEX® W/PREGNENOLONE & BRAIN SHIELD® 90 softgels	62.00	46.50	39.75	37.50		
01421	COGNITEX® BASICS • 60 softgels	38.00	28.50	26.25	24.00		
01659	COGNIZIN® CDP CHOLINE CAPS • 250 mg, 60 veg. caps	36.00	27.00	25.50			
01835	COMPLETE B-COMPLEX • 60 veg. caps	10.00	7.50	6.75			
01999	COMPREHENSIVE NUTRIENT PACKS ADVANCED • 30 packs	90.00	67.50	61.50			
<b>SUB-TOTAL OF COLUMN 2</b>							



ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
00119	<b>COPPER CAPSULES</b> • 2 mg, 100 caps	9.91	7.43				
00949	<b>COQ10 w/d-LIMONENE</b> (Super-absorbable) 50 mg, 60 softgels	25.00	18.75	16.50	15.00		
00950	<b>COQ10 w/d-LIMONENE</b> (Super-absorbable) 100 mg, 100 softgels	46.00	34.50	28.00	26.25		
01226	<b>COQ10</b> (Super ubiquinol) • 100 mg, 60 softgels	56.00	42.00	36.00	33.00		
01733	<b>COQ10 w/BIOPQQ®</b> (Super ubiquinol) • 100 mg, 30 softgels	54.00	40.50	33.00	30.00		
01426	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™</b> (Super ubiquinol) 100 mg, 60 softgels	62.00	46.50	39.00	36.00		
01425	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™</b> (Super ubiquinol) - 50 mg, 100 softgels	58.00	43.50	34.50	31.50		
01427	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™</b> (Super ubiquinol) - 50 mg, 30 softgels	20.00	15.00	12.00			
01431	<b>COQ10 w/ENH MITOCHONDRIAL SUPPORT™</b> (Super ubiquinol) - 200 mg, 30 softgels	62.00	46.50	39.00	36.00		
00862	<b>CRAN-MAX®</b> • 500 mg, 60 veg. caps	17.50	13.13	11.25			
01424	<b>CRAN-MAX® WITH ELLIROSE™</b> (Optimized) • 60 veg. caps	18.00	13.50	12.00			
01529	<b>CREATINE CAPSULES</b> • 120 veg. caps	10.95	8.21	6.94			
01746	<b>CREATINE WHEY GLUTAMINE POWDER</b> • 454 grams (vanilla)	30.00	22.50	20.25			
01429	<b>CR MIMETIC LONGEVITY FORMULA</b> • 60 veg. caps	39.00	29.25	27.00			
*33840	<b>CRWAY GREAT GLUCOSE CONTROL CD</b>	98.00	82.00				
*CRWAY	<b>CR WAY OPTIMAL HEALTH PROGRAM SOFTWARE</b>	195.00	195.00				
00407	<b>CURCUMIN®</b> (Super bio) • 400 mg, 60 veg. caps	38.00	28.50	26.25			
01808	<b>CURCUMIN® W/GINGER &amp; TURMERONES</b> (Advanced bio) 30 softgels	30.00	22.50	20.25			
01804	<b>CYTOKINE SUPPRESS™ W/EGCG</b> • 30 veg. caps	30.00	22.50	20.25			
<b>COSMESIS</b>							
80154	<b>ADVANCED LIGHTENING CREAM</b> • 1 oz	65.00	48.75	42.75			
80155	<b>ADVANCED PEPTIDE HAND THERAPY</b> • 4 oz	46.00	34.50	29.25			
80152	<b>ADVANCED TRIPLE PEPTIDE SERUM</b> • 1 oz	65.00	48.75	42.75			
80140	<b>ADVANCED UNDER EYE SERUM W/STEM CELLS</b> • .33 oz	49.00	36.75	31.50			
80139	<b>AMBER SELF MICRODERMABRASION</b> • 2 oz	49.00	36.75	31.50			
80158	<b>ANTI-AGING FACE OIL</b> • 1 oz	59.00	44.25	39.00			
80118	<b>ANTI-AGING MASK</b> • 2 oz	72.00	54.00	47.52			
80151	<b>ANTI-AGING REJUVENATING FACE CREAM</b> • 2 oz	65.00	48.75	42.75			
80153	<b>ANTI-AGING REJUVENATING SCALP SERUM</b> • 2 oz	46.00	34.50	29.25			
80157	<b>ANTI-GLYCATION PEPTIDE SERUM</b> • 1 oz	53.00	39.75	34.50			
80134	<b>ANTI-GLYCATION SERUM W/BLEBERRY &amp; POMEGRANATE EXTRACTS</b> • 1 oz	33.00	24.75	23.51			
80133	<b>ANTIOXIDANT FACIAL MIST</b> • 2 oz	32.00	24.00	22.80			
80127	<b>ANTIOXIDANT REJUVENATING FOOT CREAM</b> • 2 oz	45.00	33.75	32.10			
80128	<b>ANTIOXIDANT REJUVENATING FOOT SCRUB</b> • 2 oz	59.00	44.25	38.94			
80117	<b>ANTIOXIDANT REJUVENATING HAND CREAM</b> • 2 oz	64.00	48.00	43.12			
80105	<b>ANTI-REDNESS &amp; ADULT BLEMISH LOTION</b> • 1 oz	74.50	55.88	49.17			
80147	<b>BIOFLAVONOID CREAM</b> • 1 oz	46.00	34.50	29.25			
80144	<b>BROCCOLI SPROUT CREAM</b> • 1 oz	46.00	34.50	29.25			
80156	<b>COLLAGEN BOOSTING PEPTIDE SERUM</b> • 1 oz	59.00	44.25	39.00			
80120	<b>CORRECTIVE CLEARING MASK</b> • 2 oz	64.50	48.38	42.57			
80141	<b>DNA REPAIR CREAM</b> • 1 oz	49.00	36.75	31.50			
80108	<b>ESSENTIAL PLANT LIPIDS REPARATIVE SERUM</b> • 1 oz	74.95	56.21	49.46			
<b>SUB-TOTAL OF COLUMN 3</b>							

RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
80123	<b>FACE REJUVENATING ANTIOXIDANT CREAM</b> • 2 oz	69.50	52.13	45.87			
80107	<b>FINE LINE-LESS</b> • 1 oz	74.50	55.88	49.17			
80131	<b>HAIR SUPPRESS FORMULA</b> • 4 oz	59.00	44.25	38.94			
80137	<b>HEALING FORMULA ALL-IN-ONE CREAM</b> • 1 oz	53.00	39.75	34.07			
80115	<b>HEALING MASK</b> • 2 oz	64.50	48.38	42.57			
80102	<b>HEALING VITAMIN K CREAM</b> • 1 oz	79.50	59.63	52.47			
80109	<b>HYALURONIC FACIAL MOISTURIZER</b> • 1 oz	58.00	43.50	38.28			
80110	<b>HYALURONIC OIL-FREE FACIAL MOISTURIZER</b> • 1 oz	58.00	43.50	38.28			
80138	<b>HYDRATING ANTIOXIDANT FACE MIST</b> • 4 oz	39.95	29.96	28.50			
80103	<b>LIFTING &amp; TIGHTENING COMPLEX</b> • 1 oz	74.50	55.88	49.17			
80146	<b>LYCOPENE CREAM</b> • 1 oz	28.00	21.00	19.05			
80135	<b>MELATONIN CREAM</b> • 1 oz	33.00	24.75	20.33			
80114	<b>MILD FACIAL CLEANSER</b> • 8 oz	59.00	44.25	38.94			
80122	<b>NECK REJUVENATING ANTIOXIDANT CREAM</b> • 2 oz	64.00	48.00	42.24			
80111	<b>PIGMENT CORRECTING CREAM</b> • 1/2 oz	74.00	55.50	48.84			
80106	<b>REJUVENATING SERUM</b> • 1 oz	74.50	55.88	49.17			
80150	<b>RENEWING EYE CREAM</b> • 1/2 oz	65.00	48.75	42.75			
80142	<b>RESVERATROL ANTI-OXIDANT SERUM</b> • 1 oz	46.00	34.50	29.25			
80112	<b>SKIN LIGHTENING SERUM</b> • 1/2 oz	85.00	63.75	56.10			
80130	<b>SKIN STEM CELL SERUM</b> • 1 oz	74.00	55.50	51.75			
80143	<b>STEM CELL CREAM W/ALPINE ROSE</b> • 1 oz	66.00	49.50	43.50			
80148	<b>TIGHTENING &amp; FIRMING NECK CREAM</b> • 2 oz	39.00	29.25	26.25			
80116	<b>ULTRA LIP PLUMPER</b> • 1/3 oz	64.00	48.00	42.24			
80101	<b>ULTRA WRINKLE RELAXER</b> • 1 oz	89.95	67.46	59.82			
80113	<b>UNDER EYE REFINING SERUM</b> • 1/2 oz	74.50	55.88	49.17			
80104	<b>UNDER EYE RESCUE CREAM</b> • 1/2 oz	74.50	55.88	49.17			
80129	<b>VITAMIN C SERUM</b> • 1 oz	85.00	63.75	56.10			
80136	<b>VITAMIN D LOTION</b> • 4 oz	36.00	27.00	25.25			
80145	<b>VITAMIN E-ESSENTIAL CREAM</b> • 1 oz	28.00	21.00	19.50			
80149	<b>YOUTH SERUM</b> • 1 oz	65.00	48.75	42.75			
<b>D</b>							
01912	<b>DAILY C+ CITRUS FLAVOR</b> • 30 stick packs	21.00	15.75	14.25			
00658	<b>7-KETO® DHEA METABOLITE</b> • 25 mg, 100 caps	28.00	21.00	18.00			
01479	<b>7-KETO® DHEA METABOLITE</b> • 100 mg, 60 veg. caps	40.00	30.00	27.00			
01640	<b>DHA</b> (Vegetarian sourced) • 30 veg. softgels	20.00	15.00	13.50			
00607	<b>DHEA</b> • 25 mg, 100 tablets (Dissolve in mouth)	14.00	10.50	8.81			
01478	<b>DHEA COMPLETE</b> • 60 veg. caps	48.00	36.00	32.40			
00335	<b>DHEA</b> • 25 mg, 100 caps	18.00	13.50	11.25			
00454	<b>DHEA</b> • 15 mg, 100 caps	14.00	10.50	9.00			
00882	<b>DHEA</b> • 50 mg, 60 caps	19.00	14.25	12.75			
01689	<b>DHEA</b> • 100 mg, 60 veg. caps	24.00	18.00	16.50			
01358	<b>DIGEST RC®</b> • 30 tablets	19.95	14.96	12.75			
01272	<b>DIGESTIVE ENZYMES</b> (Enhanced Super) • 100 veg. caps	18.95	14.21	12.00			
01671	<b>D,L-PHENYLALANINE</b> • 500 mg, 100 veg. caps	18.75	14.06	12.00			
01540	<b>DMAE BITARTRATE</b> • 150 mg, 200 veg. caps	18.00	13.50	11.25			
00059	<b>DMG</b> • 125 mg, 60 tablets	24.80	18.60	17.02			
<b>SUB-TOTAL OF COLUMN 4</b>							

OCTOBER 2015

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	1 Unit Each		
01570	<b>DNA PROTECTION FORMULA</b> • 60 veg. caps	34.00	25.50	24.00				
01831	<b>DOG MIX</b> • 100 grams powder	18.00	13.50	11.25				
00321	<b>DR. PROCTOR'S ADVANCED HAIR FORMULA</b> • 2 oz	39.95	29.96	24.00				
00320	<b>DR. PROCTOR'S HAIR SHAMPOO</b> • 8 oz	24.95	18.71	16.50				
00899	<b>DUAL-ACTION MICRODERMABRASION ADV. EXFOLIATE</b> • 2.4 oz	39.95	29.96	29.21				
<b>E</b>								
01528	<b>ECHINACEA EXTRACT</b> • 250 mg, 60 veg. caps	14.35	10.76	9.38				
01997	<b>ENDOTHELIAL DEFENSE™ w/FULL-SPECTRUM POMEGRANATE™ AND CORDIART™</b> • 60 softgels	68.00	51.00	46.50				
00997	<b>ENDOTHELIAL DEFENSE™ w/GLISODIN®</b> • 60 veg. caps	54.00	40.50	36.00				
00625	<b>EPA/DHA (Mega)</b> • 120 softgels	19.95	14.96	13.50				
01737	<b>ESOPHAGEAL GUARDIAN</b> (Berry flavor) • 60 chewable tablets	36.00	27.00	24.00				
01042	<b>EUROPEAN LEG SOLUTION DIOSMIN 95</b> 600 mg, 30 veg. tabs	20.00	15.00	13.50				
01706	<b>EXTRAORDINARY ENZYMES</b> • 60 caps	26.00	19.50	18.00				
01514	<b>EYE PRESSURE SUPPORT W/MIRTOGENOL®</b> • 30 veg. caps	38.00	28.50	25.50				
<b>F</b>								
*01054	<b>FACE MASTER® PLATINUM</b> • Facial Toning System	199.00	199.00					
00965	<b>FAST-ACTING JOINT FORMULA</b> • 30 caps	39.00	29.25	27.00				
01717	<b>FAST-C® W/DIHYDROQUERCETIN</b> • 120 veg. tabs	26.00	19.50	18.00				
20053	<b>FEM DOPHILUS®</b> • 30 caps	25.95	19.46					
20055	<b>FEM DOPHILUS®</b> • 60 caps	39.95	29.96					
01064	<b>FEMMESENCE MACAPAUSE®</b> • 120 veg. caps	34.99	26.24					
01728	<b>FERNBLOCK® W/RED ORANGE COMPLEX</b> (Enhanced) 30 veg. caps	42.00	31.50	28.50				
00718	<b>FIBRINOGEN RESIST™</b> • 30 veg. caps	49.00	36.75	33.00				
01749	<b>FLAX SEED</b> (Organic golden) • 14 oz	11.67	8.75					
01821	<b>FLORASSIST® HEART HEALTH PROBIOTIC</b> • 60 veg. caps	32.00	24.00	21.00				
01825	<b>FLORASSIST® PROBIOTIC</b> • 30 liquid veg. caps	32.00	24.00	21.00				
01913	<b>FOLATE</b> (Optimized) • 5,000 mcg, 30 veg. tablets	25.00	18.75	16.50				
01939	<b>FOLATE</b> (Optimized) • 1,000 mcg, 100 veg. tablets	19.00	14.25	12.75				
01841	<b>FOLATE + VITAMIN B12 CAPS</b> • 200 veg. caps	10.50	7.88	7.13				
01544	<b>FORSKOLIN</b> • 10 mg, 60 veg. caps	16.00	12.00	10.50				
01513	<b>FUCOIDAN W/MARITECH® 926</b> (Optimized) • 60 veg. caps	36.00	27.00	24.75				
<b>G</b>								
00559	<b>GAMMA E TOCOPHEROL/TOCOTRIENOLS</b> • 60 softgels	42.00	31.50	27.75				
00759	<b>GAMMA E TOCOPHEROL W/SESAME LIGNANS</b> • 60 softgels	32.00	24.00	21.75				
01394	<b>GARLIC</b> (Optimized) • 200 veg. caps	24.95	18.71	15.75				
**01122	<b>GINGER FORCE®</b> • 60 liquid caps	34.95	26.21					
01658	<b>GINKGO BILOBA CERTIFIED EXTRACT™</b> 120 mg, 365 veg. caps	46.00	34.50	31.50				
01648	<b>GINKGO EXTRACT 28/7</b> (Super) • 120 mg, 100 veg. caps	29.00	21.75	19.88				
00756	<b>GLA WITH SESAME LIGNANS</b> (Mega) • 60 softgels	19.50	14.63	13.50				
00345	<b>(L-) GLUTAMINE CAPSULES</b> • 500 mg, 100 caps	14.95	11.21	10.13				
00141	<b>(L-) GLUTAMINE POWDER</b> • 100 grams	22.00	16.50	15.00				
00522	<b>GLUCOSAMINE/CHONDROITIN CAPSULES</b> • 100 caps	38.00	28.50	24.00				
01541	<b>GLUTATHIONE, CYSTEINE &amp; C</b> • 100 veg. caps	20.00	15.00	13.50				
00314	<b>L-GLUTATHIONE</b> (Mega) • 250 mg, 60 caps	39.64	29.73					
<b>SUB-TOTAL OF COLUMN 5</b>								

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	1 Unit Each		
01987	<b>GLYCATION PROTECTION FORMULA</b> • 60 veg. caps	44.00	33.00	29.25				
01669	<b>GLYCINE</b> • 1,000 mg, 100 veg. caps	12.00	9.00	8.10				
01091	<b>GRAPE EXTRACT W/RESVERATROL</b> (Whole) • 60 veg. caps	36.00	27.00	25.50				
01411	<b>GRAPE SEED EXTRACT W/RESVERATROL &amp; PTEROSTILBENE</b> 100 mg, 60 veg. caps	36.00	27.00	25.50				
01604	<b>GREEN COFFEE EXTRACT COFFEEGENIC®</b> 200 mg, 90 veg. caps	22.00	16.50	15.00				
01620	<b>GREEN COFFEE EXTRACT COFFEEGENIC®</b> 400 mg, 90 veg. caps	32.00	24.00	21.00				
00953	<b>GREEN TEA EXTRACT</b> (Mega) • lightly caffeinated, 100 veg. caps	30.00	22.50	18.00				
00954	<b>GREEN TEA EXTRACT</b> (Mega) • decaffeinated, 100 veg. caps	30.00	22.50	18.00				
01545	<b>GUTSY CHEWY DIGESTIVE</b> (Citrus flavor) • 8 tablets	11.50	8.63					
01546	<b>GUTSY CHEWY DIGESTIVE</b> (Wildberry flavor) • 8 tablets	11.50	8.63					
<b>H</b>								
01074	<b>5 HTP</b> • 100 mg, 60 caps	27.95	20.96					
01738	<b>HCA</b> (Garnicia) • 90 veg. caps	17.00	12.75	11.25				
29754	<b>HCACTIVE™ GARCINIA CAMBOGIA EXTRACT</b> • 90 caps	30.00	22.50					
01393	<b>HEPATOPRO</b> • 900 mg, 60 softgels	50.00	37.50	34.50				
01527	<b>HUPERZINE A</b> • 200 mcg, 60 veg. caps	40.00	30.00	27.00				
00661	<b>HYDRODERM®</b> • 1 oz	79.95	59.96	49.00				
<b>I</b>								
*01060	<b>I26 HYPERIMMUNE EGG</b> • 140 grams powder	54.99	46.75					
01704	<b>IMMUNE MODULATOR W/TINOFEND®</b> • 60 veg. caps	17.00	12.75	11.25				
00955	<b>IMMUNE PROTECT W/PARACTIN®</b> • 30 veg. caps	29.50	22.13	19.91				
01905	<b>IMMUNE SENESENCE PROTECTION FORMULA™</b> 60 veg. caps	40.00	30.00	27.00				
01049	<b>INNERPOWER™</b> • 530 grams powder	42.00	31.50					
01674	<b>INOSITOL CAPSULES</b> • 1,000 mg, 360 veg. caps	62.00	46.50	43.50				
01292	<b>INTEGRA-LEAN® AFRICAN MANGO IRVINGIA</b> 150 mg, 60 veg. caps	28.00	21.00	18.00				
01248	<b>IODINE COMPLETE</b> (Advanced) • 12.5 mg, 180 tablets	46.00	36.50					
01677	<b>IRON PROTEIN PLUS</b> • 300 mg, 100 caps	28.00	21.00	19.50				
01492	<b>IRVINGIA W/PHASE 3™ CALORIE CONTROL COMPLEX</b> (Optimized African Mango) • 120 veg. caps	56.00	42.00	36.00				
<b>J, K</b>								
00056	<b>JARRO-DOPHILUS EPS®</b> • 60 veg. caps	22.95	17.21					
01759	<b>JARRO-DOPHILUS EPS®</b> • 30 caps	39.95	29.96					
01724	<b>K W/ADVANCED K2 COMPLEX</b> (Super) • 90 softgels	30.00	22.50	20.25				
01600	<b>KRILL HEALTHY JOINT FORMULA</b> • 30 softgels	32.00	24.00	21.75				
01050	<b>KRILL OIL</b> • 60 softgels	33.95	25.46					
00316	<b>KYOLIC® GARLIC FORMULA 102</b> • 200 veg. caps	26.45	19.84					
00214	<b>KYOLIC® GARLIC FORMULA 105</b> • 200 caps	27.45	20.59					
00789	<b>KYOLIC® RESERVE</b> • 600 mg, 120 caps	27.95	20.96					
01681	<b>LACTOFERRIN</b> • 60 caps	52.00	39.00	36.00				
00020	<b>LECITHIN</b> • 16 oz granules	18.00	13.50	12.00				
01955	<b>LIFE EXTENSION MIX™</b> • 315 tablets	98.00	73.50	64.50	52.13			
01957	<b>LIFE EXTENSION MIX™ W/EXTRA NIACIN</b> • 315 tablets	98.00	73.50	64.50	52.13			
01954	<b>LIFE EXTENSION MIX™</b> • 490 caps	110.00	82.50	73.50	63.75			
01956	<b>LIFE EXTENSION MIX™ POWDER</b> • 14.81 oz	98.00	73.50	64.50	54.00			
<b>SUB-TOTAL OF COLUMN 6</b>								



ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01965	LIFE EXTENSION MIX™ • 315 tablets w/o copper	98.00	73.50	64.50	52.13		
01964	LIFE EXTENSION MIX™ • 490 caps w/o copper	110.00	82.50	73.50	63.75		
01966	LIFE EXTENSION MIX™ POWDER • 14.81 oz w/o copper	98.00	73.50	64.50	54.00		
01608	LIVER EFFICIENCY FORMULA • 30 veg. caps	18.00	13.50	12.00			
01639	5-LOX INHIBITOR W/APRÈSFLEX® • 100 mg, 60 veg. caps	22.00	16.50	15.00			
01678	L-LYSINE • 620 mg, 100 veg. caps	9.00	6.75	6.00			
00455	LYCOPENE (Mega) • 15 mg, 90 softgels	35.00	26.25	22.50			
<b>M</b>							
01885	MACUGUARD® OCULAR SUPPORT • 60 softgels	22.00	16.50	14.85			
01886	MACUGUARD® OCULAR SUPPORT w/ASTAXANTHIN 60 softgels	42.00	31.50	28.50			
01459	MAGNESIUM CAPS • 500 mg, 100 veg. caps	12.00	9.00	7.50			
01682	MAGNESIUM (CITRATE) • 160 mg, 100 veg. caps	9.00	6.75	5.63			
01908	MEDITERRANEAN TRIM WITH SINETROL™-XPUR 60 veg. caps	18.00	13.50	12.00			
01668	MELATONIN • 300 mcg, 100 veg. caps	5.75	4.31	3.75			
01083	MELATONIN • 500 mcg, 200 veg. caps	18.00	13.50	12.00			
00329	MELATONIN • 1 mg, 60 caps	5.00	3.75	3.47			
00330	MELATONIN • 3 mg, 60 caps	8.00	6.00	5.16			
00331	MELATONIN • 10 mg, 60 caps	28.00	21.00	18.00			
00332	MELATONIN • 3 mg, 60 veg. lozenges	8.00	6.00	5.16			
01734	MELATONIN (Fast-Acting Liquid) • 2 oz (Citrus-Vanilla)	12.00	9.00	8.25			
01787	MELATONIN TIMED RELEASE • 300 mcg, 100 veg. tabs	12.00	9.00	8.25			
01788	MELATONIN TIMED RELEASE • 750 mcg, 60 veg. tablets	8.00	6.00	5.25			
01786	MELATONIN TIMED RELEASE • 3 mg, 60 veg. tabs	12.00	9.00	8.25			
01536	METHYLCOBALAMIN • 1 mg, 60 veg. lozenges (vanilla)	9.95	7.46	6.00			
01537	METHYLCOBALAMIN • 5 mg, 60 veg. lozenges (vanilla)	32.00	24.00	18.75	17.25		
00709	MIGRA-EEZE™ (Butterbur) • 60 softgels	29.50	22.13	19.75			
01800	MIGRA-MAG w/BRAIN SHIELD® • 90 veg. caps	22.00	16.50	15.00			
01522	MILK THISTLE (European) • 60 veg. caps	34.00	25.50	22.50			
01822	MILK THISTLE (European) • 60 softgels	28.00	21.00	18.75			
01817	MILK THISTLE (European) • 120 softgels	44.00	33.00	30.00			
01698	MIRAFORTE w/STANDARDIZED LIGNANS (Super) • 120 caps	62.00	46.50	42.00			
01769	MITOCHONDRIAL BASICS W/BIOPQQ® • 30 caps	52.00	39.00	31.50			
01768	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ® • 120 caps	94.00	70.50	58.50			
00065	MK-7 • 90 mcg, 60 softgels	28.00	21.00	18.75			
00451	MSM (Methylsulfonylmethane) • 1,000 mg, 100 caps	14.00	10.50	8.96			
<b>N</b>							
01534	N-ACETYL-L-CYSTEINE • 600 mg, 60 veg. caps	14.00	10.50	10.13			
01904	NAD+ CELL REGENERATOR™ • 100 mg, 30 veg. caps	34.00	25.50	19.50			
00066	NATTOKINASE • 60 softgels	25.50	19.13				
01807	NATURAL APPETITE SUPPRESS (Advanced) • 60 veg. caps	38.00	28.50	25.50			
00984	NATURAL BP MANAGEMENT • 60 tablets	44.00	33.00	30.00			
01892	NATURAL ESTROGEN • 60 veg. tabs	38.00	28.50	25.50			
01893	NATURAL ESTROGEN W/O SOY ISOFLAVONES • 30 veg. caps	32.00	24.00	21.00			
01626	NATURAL SEX FOR WOMEN® 50+ (Advanced) • 90 veg. caps	59.00	44.25	34.00			
01444	NATURAL SLEEP® • 60 veg. caps	13.00	9.75	7.50			
<b>SUB-TOTAL OF COLUMN 7</b>							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01551	NATURAL SLEEP® w/ MELATONIN (Enhanced) • 30 caps	22.00	16.50	15.00			
01511	NATURAL SLEEP® W/O MELATONIN (Enhanced) • 30 caps	20.00	15.00	13.50			
01445	NATURAL SLEEP® MELATONIN • 5 mg, 60 veg. caps	18.00	13.50	12.00			
00987	NATURAL STRESS RELIEF • 30 veg. caps	28.00	21.00	18.00			
01121	NERVIA® • 60 softgels	49.95	37.46				
01603	NEURO-MAG® MAGNESIUM L-THREONATE • 90 veg. caps	40.00	30.00	27.00			
01602	NEURO-MAG® L-THREONATE W/CALCIUM & VITAMIN D3 225 grams • Lemon flavor	40.00	30.00	27.00			
01990	NITROVASC w/CORDIART™ • 500 mg, 30 veg. caps	18.00	13.50	12.00			
01903	NK CELL ACTIVATOR™ • 30 veg. tablets	45.00	33.75	31.50			
00373	NO-FLUSH NIACIN • 800 mg, 100 caps	19.00	14.25	12.75			
<b>O</b>							
01824	OLIVE LEAF VASCULAR SUPPORT w/CELERY SEED EXTRACT (Advanced) • 60 veg. caps	36.00	27.00	24.00			
01988	OMEGA-3 PLUS EPA/DHA w/SESAME LIGNANS, OLIVE EXTRACT, KRILL & ASTAXANTHIN • 120 softgels	45.00	33.75	31.50	24.75		
01983	OMEGA-3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 60 softgels	18.00	13.50	12.00	9.38		
01982	OMEGA-3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 120 softgels	32.00	24.00	21.00	17.05		
01984	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 120 enteric coated softgels	34.00	25.50	23.25	18.00		
01985	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 60 enteric coated softgels	20.00	15.00	13.50	10.50		
01986	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 240 small softgels	32.00	24.00	21.00	17.25		
01981	ONCE-DAILY HEALTH BOOSTER • 60 softgels	52.00	39.00	36.00			
01901	ONE-PER-DAY • 60 tablets	22.00	16.50	15.00			
01328	ONLY TRACE MINERALS • 90 veg. caps	15.00	11.25	9.38			
<b>P</b>							
01789	PALMETTOGUARD® SAW PALMETTO W/BETA-SITOSTEROL 30 softgels	15.00	11.25	10.50	9.00		
01790	PALMETTOGUARD® SUPER SAW PALMETTO/ NETTLE ROOT W/BETA-SITOSTEROL • 60 softgels	28.00	21.00	19.50	18.00		
00073	PANCREATIN • 50 caps	13.22	9.92				
01323	PEAK ATP® WITH GLYCOCARN® • 60 veg. caps	54.00	40.50	37.50			
00342	PECTA SOL-C® MODIFIED CITRUS PECTIN • 454 grams powder	109.95	82.46				
01080	PECTA SOL-C® MODIFIED CITRUS PECTIN • 270 veg. caps	79.95	59.96				
01811	PEONY IMMUNE • 60 veg. caps	36.00	27.00	24.00			
00673	PGX® PLUS MULBERRY (WellBetX®) • 180 veg. caps	34.95	26.21				
01676	PHOSPHATIDYL SERINE CAPS • 100 mg, 100 veg. caps	54.00	40.50	36.00			
01436	POLICOSANOL • 10 mg, 60 veg. caps	20.00	15.00	11.25			
01423	POMEGRANATE™ (Full-Spectrum) • 30 softgels	24.00	18.00	15.75			
00956	POMEGRANATE EXTRACT • 30 veg. caps	19.50	14.63	13.16			
01797	POMI-T® • 60 veg. caps	33.33	25.00	22.50			
00577	POTASSIUM IODIDE • 130 mg, 14 tablets	6.95	5.21	3.94			
01500	PQQ CAPS W/BIOPQQ® • 10 mg, 30 veg. caps	24.00	18.00	13.50	12.00		
01647	PQQ CAPS W/BIOPQQ® • 20 mg, 30 veg. caps	40.00	30.00	24.00	21.00		
00302	PREGNENOLONE • 50 mg, 100 caps	26.00	19.50	16.50			
00700	PREGNENOLONE • 100 mg, 100 caps	30.00	22.50	20.25			
**01373	PRELOX® NATURAL SEX FOR MEN® • 60 tablets	52.00	39.00	36.00			
<b>SUB-TOTAL OF COLUMN 8</b>							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01576	PREVAGEN® • 30 caps	60.00	45.00				
*01577	PREVAGEN® ES • 30 caps	70.00	60.00				
00525	PROBOOST™ THYMIC PROTEIN A • 30 packets	59.95	44.96				
01441	PROGESTACARE® FOR WOMEN • 4 oz cream	35.50	26.63	24.38			
01898	PROSTATE FORMULA (Ultra NAT) • 60 softgels	38.00	28.50	26.25	24.00		
01909	PROSTAPOLLEN™ (Triple strength) • 30 softgels	28.00	21.00	18.75			
01742	PROTEIN-ISOLATE (Whey) Vanilla • 1 lb. powder	30.00	22.50	20.25			
01743	PROTEIN-ISOLATE (Whey) Chocolate • 1 lb. powder	30.00	22.50	20.25			
01770	PROTEIN CONCENTRATE (New Zealand Whey) Vanilla 520 grams	30.00	22.50	19.95			
01771	PROTEIN CONCENTRATE (New Zealand Whey) Chocolate 660 grams	30.00	22.50	19.95			
01812	PROVINAL® PURIFIED OMEGA-7 • 30 softgels	27.00	20.25	18.00			
01508	PTEROPURE® • 50 mg Pterostilbene 60 veg. caps	32.00	24.00	22.50			
01209	PUMPKIN SEED EXTRACT (Water-soluble) • 60 veg. caps	20.00	15.00	13.50			
01587	PURE PLANT PROTEIN • Vanilla 540 grams powder	38.00	28.50	26.25			
01637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT 100 mg, 60 veg. caps	64.00	48.00	45.00			
01217	PYRIDOXAL 5'-PHOSPHATE • 100 mg, 60 veg. caps	22.00	16.50	14.85			
<b>Q, R</b>							
01309	QUERCETIN (Optimized) • 250 mg, 60 veg. caps	22.00	16.50	15.00			
01030	RED YEAST RICE (Bluebonnet) • 600 mg, 60 veg. caps	16.95	13.56				
00605	REGIMINT • 60 enteric-coated caps	19.95	14.96	14.00			
01708	REISHI EXTRACT MUSHROOM COMPLEX • 60 veg. caps	30.00	22.50	20.25			
01448	REJUVENEX® BODY LOTION • 6 oz	24.00	18.00	14.85	12.75		
01621	REJUVENEX® FACTOR FIRING SERUM • 1.7 oz	65.00	48.75	37.50			
01220	REJUVENEX® (Ultra) • 2 oz	52.00	39.00	33.00	29.25		
00676	REJUVENIGHT® (Ultra) • 2 oz	39.95	29.96	27.00			
01410	RESVERATROL W/PTEROSTILBENE • 100 mg, 60 veg. caps	36.00	27.00	24.00			
01930	RESVERATROL W/NAD+ CELL REGENERATOR™ (Optimized) • 30 veg. caps	42.00	31.50	27.00			
01430	RESVERATROL W/SYNERGISTIC GRAPE-BERRY ACTIVES (Optimized) • 250 mg, 60 veg. caps	46.00	34.50	31.00			
00889	RHODIOLA EXTRACT • 250 mg, 60 veg. caps	14.00	10.50	9.00			
01900	RIBOGEN™ FRENCH OAK WOOD EXTRACT 200 mg, 30 veg. caps	36.00	27.00	24.75			
00972	(D) RIBOSE POWDER • 150 grams	27.50	20.63	18.56			
01473	(D) RIBOSE TABLETS • 100 veg. tabs	32.00	24.00	21.00			
01609	RICH REWARDS® BREAKFAST GROUND COFFEE • 12 oz. bag	13.00	9.75				
01730	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Mocha • 12 oz. bag	15.00	11.25	10.50			
01729	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Vanilla • 12 oz. bag	15.00	11.25	10.50			
01612	RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE 12 oz. bag	13.00	9.75				
01610	RICH REWARDST® DECAFFEINATED ROAST GROUND COFFEE 12 oz. bag	14.00	10.50				
01530	RICH REWARDS® CRUCIFEROUS VEGETABLE SOUP • 32 oz.	11.95	8.96	8.44			
01208	R-LIPOIC ACID (Super) • 240 mg, 60 veg. caps	49.00	36.75	33.75			
00070	RNA CAPSULES • 500 mg, 100 caps	17.95	13.46	12.12			
<b>SUB-TOTAL OF COLUMN 9</b>							

		YOUR PRICE					
ITEM No.	PRODUCT	Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	QTY	Total
S							
01432	SAFFRON W/SATIEREAL® (Optimized) • 60 veg. caps	36.00	27.00	24.00			
00358	SAME (S-ADENOSYL-METHIONINE) 200 mg, 20 enteric coated tablets	16.00	12.00	10.50	9.75		
00557	SAME (S-ADENOSYL-METHIONINE) 400 mg, 20 enteric coated tablets	28.00	21.00	18.00			
01740	SEA-IODINE™ • 1,000 mcg, 60 veg. caps	8.00	6.00	5.40			
00046	SELENIUM • 2 fl. oz dropper	11.95	8.96				
01679	SE-METHYL L-SELENOCYSTEINE • 200 mcg, 100 veg. caps	12.00	9.00	8.25			
00318	SERRAFLAZYME • 100 tablets	18.00	13.50	12.00			
01684	SILYMARIN • 100 mg, 50 veg. caps	9.25	6.94	6.19			
01249	SINUS CLEANSER • 4 oz. bottle	25.00	18.75				
01596	SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT® 30 veg. liquid caps	25.00	18.75	17.25			
00961	SODZYME® w/GLISODIN® & WOLFBERRY • 90 veg. caps	28.00	21.00	18.00			
00657	SOLARSHIELD® SUNGLASSES • Smoke color	12.99	9.74	8.63			
01097	SOY EXTRACT (Ultra) • 150 veg. caps	87.00	65.25	58.50			
00432	STEVIA™ (Better) • 100 packets, 1 gram each	9.95	7.46				
00438	STEVIA™ ORGANIC LIQUID SWEETENER (Better) • 2 oz	11.00	8.25				
01476	STRONTIUM • 750 mg, 90 veg. caps	20.00	15.00	13.50			
01649	SUPER ABSORBABLE SOY ISOFLAVONES • 60 veg. caps	28.00	21.00	18.75			
01778	SUPER SELENIUM COMPLEX • 200 mcg, 100 veg. caps	14.00	10.50	9.00	8.25		
T							
01723	TART CHERRY EXTRACT W/STANDARDIZED CHERRYPURE® 60 veg. caps	22.00	16.50	15.00			
01827	TAURINE • 1,000 mg, 90 veg. caps	13.00	9.75	9.00			
01918	TEAR SUPPORT w/MAQUIBRIGHT® • 60 mg, 30 veg. caps	18.00	13.50	12.00			
00133	L-TAURINE POWDER • 300 grams	20.00	15.00	12.66			
13685	TEN MUSHROOM FORMULA® • 120 veg. caps	39.95	29.96				
01304	THEAFLAVIN STANDARDIZED EXTRACT • 30 veg. caps	18.00	13.50	12.00			
01683	(L) THEANINE • 100 mg, 60 veg. caps	24.00	18.00	15.38			
01038	THERALAC® PROBIOTICS • 30 caps	47.95	35.96				
00668	THYROID FORMULA (Metabolic Advantage™) • 100 caps	21.95	16.46				
00349	TMG POWDER • 50 grams	14.00	10.50	8.25			
01859	TMG • 500 mg, 60 liquid veg. caps	13.00	9.75	9.00			
01400	TOCOTRIENOLS (Super-absorbable) • 60 softgels	30.00	22.50	21.00			
01278	TOOTHPASTE • 4 oz (Mint) tube	9.50	7.13	6.50			
01917	TRANQUIL TRACT™ • 60 veg. caps	52.00	39.00	34.50			
01468	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT 60 veg. caps	24.00	18.00	16.50			
01469	TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT w/RESVERATROL • 60 veg. caps	32.00	24.00	22.20			
01803	TRI SUGAR SHIELD® • 60 veg. caps	36.00	27.00	24.00			
01386	TRUFIBER™ • 180 grams	32.95	24.71				
01389	TRUFLOA® PROBIOTICS • 32 veg. caps	42.95	32.21				
01722	L-TRYPTOPHAN • 500 mg, 90 veg. caps	33.00	24.75	22.50			
01721	TRYPTOPHAN PLUS (Optimized) • 90 veg. caps	32.00	24.00	21.75			
01916	TWO-PER-DAY • 60 tablets	10.50	7.88	7.13			
01915	TWO-PER-DAY • 120 tablets	20.00	15.00	13.50			
SUB-TOTAL OF COLUMN 10							

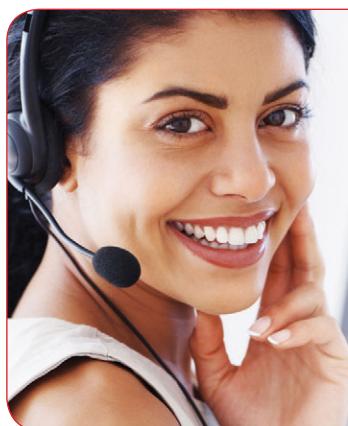


ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01914	<b>TWO-PER-DAY</b> • 120 caps	22.00	16.50	15.00			
00326	<b>L-TYROSINE</b> • 500 mg, 100 tablets	12.98	9.74				
<b>V</b>							
00213	<b>VANADYL SULFATE</b> • 7.5 mg, 100 veg. tablets	15.00	11.25	9.38			
00408	<b>VENOTONE</b> • 60 caps	18.95	14.21	12.00			
01327	<b>VINPOCETINE</b> • 10 mg, 100 veg. tablets	18.00	13.50	10.50			
00372	<b>VITAMIN B3 NIACIN</b> • 500 mg, 100 caps	7.65	5.74	4.99			
00098	<b>VITAMIN B5</b> • 500 mg, 100 caps (Pantothenic Acid)	10.50	7.88	7.04			
01535	<b>VITAMIN B6</b> • 250 mg, 100 veg. caps	12.50	9.38	8.25			
00361	<b>VITAMIN B12</b> • 500 mcg, 100 lozenges	8.75	6.56	5.44			
01634	<b>VITAMIN C w/DIHYDROQUERCETIN</b> 1,000 mg, 60 veg. tablets	10.00	7.50	6.75			
00927	<b>VITAMIN C w/DIHYDROQUERCETIN</b> 1,000 mg, 250 veg. tablets	25.50	19.13	17.44			
00084	<b>VITAMIN C POWDER (BUFFERED)</b> • 454 grams	23.95	17.96	16.50			
01736	<b>VITAMIN C-MAGNESIUM CRYSTALS (EFFERVESCENT)</b> 180 grams	20.00	15.00	13.50			
01732	<b>VITAMIN D3</b> • 2,000 IU, 1 fl oz, Mint flavor	28.00	21.00	18.75			
01753	<b>VITAMIN D3</b> • 1,000 IU, 90 softgels	7.00	5.25	4.50			
01751	<b>VITAMIN D3</b> • 1,000 IU, 250 softgels	12.50	9.38	8.44			
01713	<b>VITAMIN D3</b> • 5,000 IU, 60 softgels	11.00	8.25	7.43			
01718	<b>VITAMIN D3</b> • 7,000 IU, 60 softgels	14.00	10.50	9.45			
01758	<b>VITAMIN D3 W/SEA-IODINE™</b> • 5,000 IU, 60 caps	14.00	10.50	9.38			
00864	<b>VITAMIN D3 LIQUID EMULSION</b> • 2,000 IU, 1 oz.	28.00	21.00	18.75			
01840	<b>VITAMINS D AND K W/SEA-IODINE™</b> • 60 caps	24.00	18.00	16.50			
01763	<b>VITAMIN E (Natural)</b> • 400 IU, 100 softgels	30.00	22.50	21.00	19.50		
01225	<b>VITAMIN K2 (Low-dose)</b> • 45 mcg, 90 softgels	18.00	13.50	12.00			
<b>X</b>							
00409	<b>XYLIWHITE™ MOUTHWASH</b> • 16 oz	10.00	7.50				
<b>W</b>							
01902	<b>WAIST-LINE CONTROL™</b> • 120 veg. caps	42.00	31.50	28.50			
01826	<b>WEIGHT MANAGEMENT FORMULA</b> • 60 veg. caps	40.00	30.00	27.00			
<b>Z</b>							
01813	<b>ZINC HIGH POTENCY</b> • 50 mg, 90 veg. caps	7.95	5.96	5.25			
01561	<b>ZINC LOZENGES</b> • 60 veg. lozenges	9.00	6.75	6.00			
01961	<b>ZINC LOZENGES (Enhanced)</b> • 30 veg. lozenges	12.00	9.00	6.00			
*01051	<b>ZYFLAMEND® WHOLE BODY</b> • 120 softgels	64.95	48.71				
<b>BOOKS</b>							
33880	<b>OUTSTANDING HEALTH: THE 6 ESSENTIAL KEYS TO MAXIMIZE YOUR ENERGY AND WELL BEING</b> by Michael Galitzer, MD & Larry Trivieri Jr. • 2015	24.95	18.71				
33878	<b>TESTOSTERONE REPLACEMENT THERAPY</b> by Dr. John Crisler • 2015	19.99	14.99				
33877	<b>THE TRUTH ABOUT MEN AND SEX</b> by Abraham Morgentaler, MD, FACS • 2015	16.99	12.74				
33876	<b>TOX-SICK</b> • by Suzanne Somers • 2015	26.00	19.50				
33875	<b>DOCTORED: THE DISILLUSIONMENT OF AN AMERICAN PHYSICIAN</b> • by Sandeep Jauhar • 2015	26.00	19.50				
33874	<b>MISSING MICROBES</b> • by Martin J. Blaser, MD • 2014	28.00	21.00				
33873	<b>EATING ON THE WILD SIDE</b> • by Jo Robinson • 2014	16.00	12.00				
<b>SUB-TOTAL OF COLUMN 11</b>							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
33872	<b>GET SERIOUS</b> • by Brett Osborn, MD • 2014	24.95	18.71				
33868	<b>TOXIN TOXOUT: GETTING HARMFUL CHEMICAL OUT OF OUR BODIES AND OUR WORLD</b> • by Bruce Lourie and Rick Smith • 2014	25.99	19.49				
33867	<b>THE COMPLETE MEDITERRANEAN DIET</b> by Michael Ozner, MD • 2014	19.95	14.96				
33869	<b>UNLEASH THE POWER OF THE FEMALE BRAIN</b> by Daniel Amen, MD • 2014	16.00	12.00				
33870	<b>MAGNIFICENT MAGNESIUM</b> by Dennis Goodman, MD • 2014	14.95	11.21				
33864	<b>THE SUPPLEMENT PYRAMID</b> by Michael A. Smith, MD • 2014	24.95	18.71				
DPT05	<b>DISEASE PREVENTION AND TREATMENT, EXPANDED FIFTH EDITION (Hardcover)</b> • 2014	69.95	39.95	36.00			
33865	<b>THE RESTORATION OF THE HUMAN BODY [IN 7 PARTS]</b> by Sergey A. Dzugan, MD, PhD • 2014	29.95	22.46				
33862	<b>I'M TOO YOUNG FOR THIS</b> • by Suzanne Somers • 2013	26.00	19.50				
33835	<b>PHARMOCRACY</b> • by William Faloon • 2011	24.00	9.60	8.00			
33854	<b>THE GREAT CHOLESTEROL MYTH</b> • by Jonny Bowden, PhD, CNS and Stephen Sinatra, MD • 2012	19.99	14.99				
33958	<b>THE VITAMIN D SOLUTION</b> by Michael F. Holick, PhD, MD (Paperback) • 2013	16.00	12.00				
33838	<b>YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY</b> by Gary Goldfaden, MD • 2012	26.00	15.00				
33815	<b>KNOCKOUT</b> • by Suzanne Somers • 2009	25.99	17.00				
33809	<b>TESTOSTERONE FOR LIFE</b> by Abraham Morgentaler, MD • 2008	16.95	11.87				
33696	<b>LIFE EXTENSION REVOLUTION</b> by Philip Lee Miller, MD (Paperback)	16.00	12.00				
33805	<b>MIAMI MEDITERRANEAN DIET WITH 300 RECIPES</b> by Michael D. Ozner, MD, FACC, FAHA (Hardcover) • 2008	24.95	16.25				
33906	<b>THE MIGRAINE CURE</b> • by Sergey Dzugan, MD, PhD • 2006	24.00	15.60				
33803	<b>WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT DIABETES</b> by Steven V. Joyal, MD • 2008	14.99	10.49				

**SUB-TOTAL OF COLUMN 12**

- \* These products are not 25% off retail price.
- \*\* Due to license restrictions, this product is not for sale to customers outside of the USA.
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SUB-TOTAL COLUMN 10	
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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.	
<b>GRAND TOTAL</b> (MUST BE IN U.S. DOLLARS)	

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# Tap the Power of N-Acetyl-L-Cysteine

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.<sup>1-10</sup> 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.<sup>11</sup>

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.<sup>12-21</sup> It provides immune support,<sup>5-8</sup> helps liver cells to efficiently metabolize lipids and neutralize free radicals,<sup>22</sup> and has been shown to supply nutritional support to neurons in the presence of oxidative stress.<sup>23</sup>

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.

## N-Acetyl-L-Cysteine

Item #01534 • 60 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$14	\$10.50
4 bottles		\$10.13 each

### Non-GMO

**Caution:** Those who supplement with NAC should drink six to eight glasses of water daily in order to prevent cysteine renal stones. Cysteine renal stones are rare but do occur.

### References

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FORMULAS®



# FINALLY AN IMMUNE FORMULA THAT SCORES A PERFECT 10



	Mushroom Latin Name	Common Name	Benefits
1	<i>Ganoderma lucidum</i>	Reishi	Immune, cellular, cardiovascular, liver, respiratory*
2	<i>Wolfiporia extensa</i>	Poria; Fu Ling	Immune, cellular, liver, digestive, spleen, respiratory*
3	<i>Cordyceps sinensis</i>	Caterpillar Mushroom	Immune, liver, spleen, respiratory*
4	<i>Tremella fuciformis</i>	Tremella	Immune, metabolic/glucose balance, lung, spleen*
5	<i>Polyporus umbellatus</i>	Zhu Ling	Immune, liver, kidney, spleen*
6	<i>Trametes versicolor</i>	Turkey Tails; Coriolus	Immune, cellular, spleen, liver*
7	<i>Grifola frondosa</i>	Maitake	Immune, cellular, digestive, metabolic/glucose balance*
8	<i>Lentinula edodes</i>	Shiitake	Immune, cellular*
9	<i>Auricularia auricula</i>	Wood Ear Fungus	Immune, cardiovascular*
10	<i>Hericium erinaceus</i>	Lion's Mane; Monkey's Head	Immune, digestive*

## 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](http://www.LifeExtension.com)



Item # 13685

**Ten Mushroom Formula®**  
120 Veg. Capsules

Item # **13685**

Retail: \$39.95

Your price: \$29.96

\*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.



# Fat-Soluble Nutrients NOT Found In Most Multi-Vitamin Formulas

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**<sup>1,2</sup> and the 24-hour bioavailable **MK-7**,<sup>1</sup> 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.<sup>3,4</sup>
- **Vitamin E as D-alpha tocopherol** to suppress lipid peroxidation.<sup>5,6</sup>
- **Blueberry extract** to boost DNA repair and sustain healthy blood sugar levels already within normal range.<sup>7,8</sup>
- **Sesame lignans** to boost tissue levels of **gamma tocopherol**.<sup>9</sup>
- **Lycopene** to support prostate health and guard against LDL oxidation.<sup>10,11</sup>
- **Chlorophyllin**, which offers protection against environmentally induced DNA damage.<sup>12</sup>
- **Black currant extract** anthocyanins to promote eye health.<sup>13</sup>
- **Vitamin B12** to help maintain a healthy nervous system and metabolism.<sup>14</sup>

Just one daily **Health Booster** softgel provides:

<b>Vitamin K1</b>	<b>1,000 mcg</b>
<b>Vitamin K2 (MK-4)</b>	<b>1,000 mcg</b>
<b>Vitamin K2 (MK-7)</b>	<b>200 mcg</b>
<b>Vitamin B12</b>	<b>300 mcg</b>
<b>Chlorophyllin</b>	<b>100 mg</b>
<b>Gamma E Mixed Tocopherols</b>	<b>359 mg</b>
Gamma tocopherol 197.45 - 269.25 mg	
Delta tocopherol 71.8 - 107.7 mg	
Alpha tocopherol 30.52 - 43.08 mg	
Beta tocopherol < 17.95 mg	
<b>MacuGuard® Carotenoid Phospholipid Blend</b>	<b>145 mg</b>
Phospholipids, marigold extract (flower)	
[providing 10 mg free lutein,	
4 mg meso-zeaxanthin & trans-zeaxanthin]	
<b>C3G (Cyanidin-3-glucoside)</b>	<b>2.2 mg</b>
[from European black currant extract (fruit)]	
<b>Lycopene (tomato extract)</b>	<b>10 mg</b>
<b>Sesame Seed Lignan Extract</b>	<b>20 mg</b>
<b>Wild Blueberry Whole Extract (fruit)</b>	<b>100 mg</b>



## Once-Daily Health Booster

Item #01981 • 60 softgels (two-month supply)

	<b>Retail Price</b>	<b>Your Price</b>
1 bottle	\$52	<b>\$39</b>
4 bottles		<b>\$36 each</b>

## 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**.

1. *Nutr J.* 2012 Nov 12;11:93.

2. *Food Nutr Res.* 2012;56.

3. *Nutr Rev.* 1997 Oct;55(10):376-8.

4. *Med Hypotheses.* 2007;69(6):1367-70.

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6. *Brain Res Bull.* 1994;33(3):313-8.

7. *Int J Mol Sci.* 2013;14(11):21447-62.

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10. *Nutr Cancer.* 2009;61(6):775-83.

11. *Lipids.* 1998 Oct;33(10):981-4.

12. *Toxicology.* 2004 Mar 1;196(1-2):117-25.

13. *J Biomed Biotechnol.* 2004;2004(5):306-313.

14. Available at: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMHT0022013/>.

Accessed April 24, 2015.

### 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 8,623,428.

**Caution:** If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product.

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



## WHAT'S INSIDE

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Magazine



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