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Reference

1. *Br J Pharmacol.* 2004 Mar;141(5):825-30.



REPORTS

36 CREATE YOUTHFUL SKIN FROM THE INSIDE OUT

Ceramides are natural components found in young, healthy skin. They have been added to expensive cosmetics, but topical application is poorly absorbed. Clinical studies show that **ingesting** oral **plant ceramides** smooths, hydrates and rejuvenates aged skin from within.



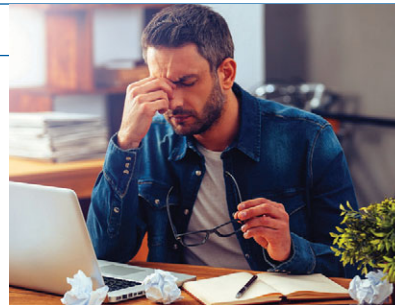
46 HEALTHY GUMS PROMOTE LONGEVITY

Recent research has confirmed that poor oral health can result in diseases ranging from stroke and pancreatic cancer to obesity. Brushing alone is not always sufficient. A novel **toothpaste** provides targeted **nutrients** to help keep teeth and gums in optimal health.



60 GOVERNMENT UNDERSTATES TOBACCO LETHALITY

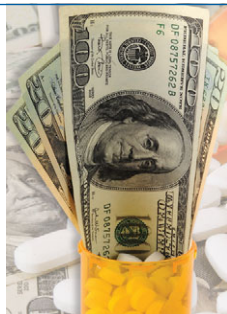
Cigarette smoking causes more illnesses than what the government tells us. Anti-tobacco campaigns are failing to sufficiently curb this deadly menace. New evidence points to a staggering number of excess tobacco-related deaths that are not part of official statistics. There are better ways to mitigate this epidemic that increases **healthcare costs** for all Americans.



24 HOW STRESS ACCELERATES AGING

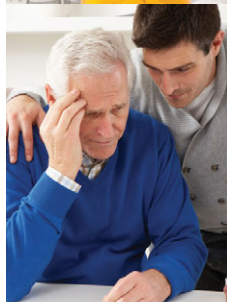
Cortisol is a hormone released in response to emotional **stress**. Elevated cortisol accelerates **aging** via several mechanisms including suppressing immunity and elevating blood glucose. Natural compounds have been identified that reduce excess **cortisol**. This is important because elevated **cortisol** increases risk of early **mortality**.

DEPARTMENTS



7 AS WE SEE IT: EXTORTIONIST DRUG PRICES!

No one has fought longer against **high drug prices** than **Life Extension[®]**. We've exposed how **generic drugs** whose active ingredient costs only **pennies** are sold to desperate consumers for **hundreds of dollars**. The solution to this **price gouging** is to remove antiquated **regulations** that cause **drugs** to cost far more than they should.



17 IN THE NEWS

Vitamins C & E inhibit dementia; vitamin D increases life span; quercetin improves arthritis; drug prices skyrocket; and drug price-fixing criminal charges.



73 RESEARCH UPDATE: NUTRIENTS BOOST STEM CELL FUNCTION

Rejuvenating stem cells could partially reverse tissue aging, and research suggests that this goal is within reach. Three remarkable studies published last year demonstrate that a variety of nutraceutical compounds are capable of boosting **stem cell function**.

81 SUPER FOODS: TEFF

Newly discovered by Americans, the North African cereal grain **teff** provides an array of healthy vitamins and minerals and is gluten-free.



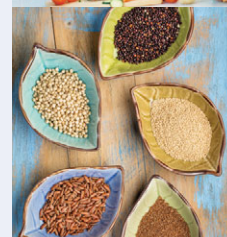
83 AUTHOR INTERVIEW: AVOID THE FIVE MOST COMMON KILLER DISEASES TODAY

Dr. Edward Rosick believes that a well-balanced and supplemented diet, stress reduction, and exercise inhibit chronic and deadly diseases. We sat down with him for an in-depth discussion of his recommendations.



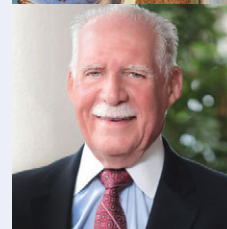
89 HEALTHY EATING: THE GRAIN BOWL

In his book *The Grain Bowl*, restaurateur Nik Williamson provides recipes for novel dishes based on a wide variety of healthy grains, ranging from black rice and farro to barley and buckwheat.



95 WELLNESS PROFILE: DR. ROBERT WILLIX: THE IRONMAN AT 75

At 75, Dr. Robert Willix, is training for the grueling Ironman competition. He advocates "whole-person" medical care that focuses on disease prevention.





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Reference

* Available at: https://www.ars.usda.gov/ARUserFiles/80400530/pdf/0506/usual_nutrient_intake_vitD_ca_phos_mg_2005-06.pdf. Accessed September 6, 2016.

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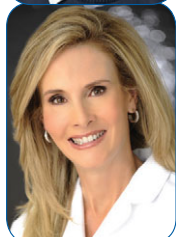
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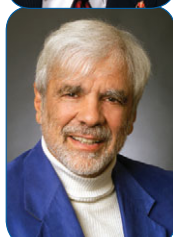
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BY WILLIAM FALOON

Unsustainable Drug Prices!

In the **February 2000** issue of this magazine I wrote an editorial titled:

Are We to Become Serfs of the Drug Monopoly?

My article ignited a firestorm of activity in **Congress** aimed squarely at the **FDA**.

Back then, many members of **Congress** were upset that the **FDA** prohibited Americans from importing lower cost medications from other countries.

To underscore this consumer rip-off, I compiled a **chart** showing how much more Americans were paying for pharmaceuticals compared to Europeans.

This chart was enlarged by a congressman and shown on the floor of the **House of Representatives**. The purpose was to educate other lawmakers about the magnitude of the **price-gouging**.¹

The eventual result was passage of a bill by **Congress** and signed into law by **President Bill Clinton**. The bill allowed Americans to **import** prescription medications from countries that sold them at a fraction of the price Americans were paying.

The bill had one fatal loophole. If the **FDA** determined that it lacked the resources to ensure the safety of imported drugs, then the **Secretary of Health and Human Services** could nullify the bill with one stroke of a pen. And that's exactly what **Donna Shalala** did in the final days of Bill Clinton's term.

This cruel act of sabotage by an unelected bureaucrat set the stage for the staggering increases in **generic drug prices** that now make headline news.

The burden of high medical costs has reached a point that is unsustainable by the American economy. This problem will not abate until the public regains some control over **Congress**, which is currently dominated by **pharmaceutical lobbyists**.

As you'll read in this article, the **FDA** wants to further benefit pharmaceutical interests by suffocating innovation in the **dietary supplement** industry.



Donna Shalala
US Secretary of Health
and Human Services
January 1993 to
January 20, 2001

No one has fought longer or harder against high drug prices than **Life Extension**.²

We've exposed how off-patent generic drugs whose active ingredients cost only **pennies** are sold to consumers for **hundreds of dollars**.

We have shown that this **price gouging** is caused by **over-regulation** of the prescription drug marketplace.

What's sparked recent media outrage is that the healthcare **burden** now falls squarely on **middle-class** America.³ That represents the majority of citizens who are facing economic hardships via high medical insurance **premiums**, high **deductibles**, and **restricted access** to the best doctors.

Magnitude of Problem

There was a time not so long ago when most employers paid **100%** of their employees' health insurance premiums. This included the spouse and children of each employee.

If a serious medical issue arose, the company-paid insurance covered virtually **100%** of the expenses. There was no such thing as first having to pay a large **deductible**, or being told of **denial** of coverage for a physician-prescribed therapy, or even **denial** of payment to the physician you chose.

Employees today pay a growing percentage of their **own** medical insurance premiums and usually **100%** for their spouse and children. (Recall this was a **free** employee benefit just a few decades ago.)

In today's upside-down world of so-called health "**insurance**," the middle class is often limited to using physicians who are in their insurance company's narrow "**network**." These physicians relinquish decision-making regarding diagnostics and prescribing to what the insurance company permits, which is often substandard care based on **Life Extension's** treatment protocols.

Before the insurance company covers anything, a **deductible** has to be paid out of pocket that can run **\$4,000-\$6,000**. This deductible

must be paid *every* year for treating the **same** medical condition. (Deductibles vary considerably depending on the plan chosen.)

So what used to be a **benefit** for most working Americans is now a **farce**. The typical working person does not run up **\$4,000-\$6,000** in medical expenses. So they may wind up paying **100%** of the healthcare costs they do incur out of pocket—even though they are paying **higher** health insurance premiums!

High **co-pays** (ranging from **10%-40%**) even **after** the annual **deductible** is met means that the middle-class cannot afford to fall ill, especially as skyrocketing **premiums** for substandard insurance deplete their savings. (Low-income individuals are eligible for government subsidies to offset many of these costs, which means they are borne instead by taxpayers.)

Alarming New Reports

Last year, a report published by the **Brookings Institute** revealed the nightmare facing **middle-income** Americans.

The findings showed that middle-income household spending on healthcare has risen **25%** from **2007** to **2014**.⁴ The only reason the middle class has survived this sharp price increase is that the costs of **other** necessities has plummeted during that same time period.

A **Kaiser Family Foundation** report confirmed this bleak picture. Deductibles for individual workers have risen **67%** since **2010**, which is roughly **7 times more** than earnings growth over the same period.^{4,5}

A separate Kaiser analysis of tens of millions of insurance claims found that patient



“**cost-sharing**” has skyrocketed since **2004**. This has been driven by a **256%** surge in **deductibles** that consumers now have to bear.^{4,6} Recall that in the not-so-distant past, **deductibles** were only a few hundred dollars.

With many generic drugs now costing thousands of dollars, and some new medications costing **\$100,000**, it is clear that only the wealthy or very poor have **affordable** access to healthcare in America.

Very low-income individuals have **Medicaid** coverage which, after a small copayment, usually pays **100%** of medical costs, even for expensive drugs that exceed \$100,000 each year.⁷

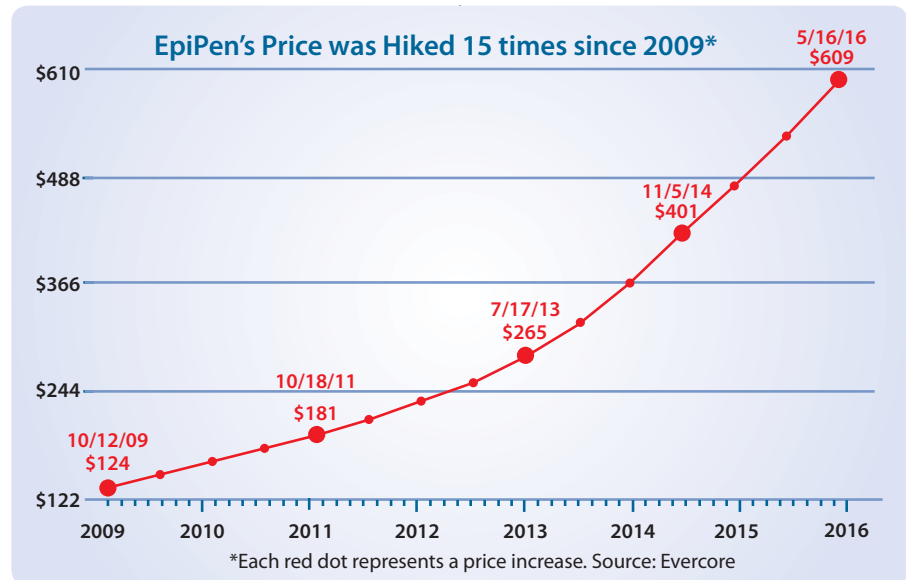
Like those with today’s sub-standard insurance, however, Medicaid recipients are refused treatment by some of the better physicians. But at least they don’t have to pay large premiums and deductibles only to be told by their insurance carrier that the therapy they need to live is “**not medically necessary**” or “**not approved by the FDA for their specific indication.**”

These two excuses are routinely used by insurance carriers to deny seriously ill people access to drugs that published studies indicate are efficacious.

This healthcare cost crisis is projected to worsen as employers increasingly shift more healthcare costs to workers.

The Drug Rip-Off

In **2016**, the media woke up to the magnitude of overpriced drugs. This prompted **Congress** to hold hearings about **price gouging** including a generic device used to save children who suffer allergic reactions.



The device is the **EpiPen®**, and its cost has risen about **550%** since **2007**.^{8,9} There is nothing unique about the drug (**epinephrine**) in this auto-injector (EpiPen®) that parents carry to save their child’s life. The maker nonetheless enjoys a virtual monopoly based on effective lobbying, aggressive legal defense against competitors, and the high costs of getting the FDA to approve competing versions of the identical drug.

The retail price for a pack of two EpiPens® is **\$608** (up from **\$94** in **2007**).⁹ Many parents cannot afford this outlandish price and risk their children suffocating to death if an acute allergic reaction occurs.

In case you’re wondering what it costs to make this drug, experts are quoted as stating that “*one milligram of epinephrine, which is three times more than what’s needed in an EpiPen, costs just a few bucks*” and “*the auto-injector is available for between \$3 and \$7.*”¹⁰ With sterile quality control, this drug could be profitably sold for less than **\$100**—if it were not for the power **Congress** bestows on the **FDA** to pick and choose who gets to make it.

In response to media backlash, the maker of the **EpiPen®** promised to make a generic version that costs only **\$300**...which is still as much as one hundred times more than what it costs to make.¹¹

The **\$300** price for a drug that may be needed multiple times each year is still unaffordable by many parents whose **deductibles** are thousands of dollars each year.

Why Generic Drug Prices Are Skyrocketing

Back in **2003**, it cost less than **\$1 million** to file a generic drug application with the **FDA**. That price was way too high, as most generics can easily copy the branded drug and deliver the same bioequivalence.¹²

Today’s cost of gaining FDA approval of a generic is **\$5 million** and sometimes much higher. As a result of these oppressive approval costs, many generic drugs face no competition. This can result in consumers paying almost as much for the **generic** as the patented version’s previous price.

Excessive regulatory burdens have resulted in delaying new generics for years and needlessly driving up the costs of making them.

None of this excludes the probability of **collusion** amongst certain generic makers as many cease producing a generic even after paying the costs of FDA approval. This sometimes happens when one company pays another to cease production, at which time the remaining generic propels upwards in price.

There Is a Free Market Solution

We at *Life Extension* have long espoused an easy solution to drug price gouging, which is to amend the **Food, Drug, and Cosmetic Act** to allow **competition** in the generic marketplace. If enacted, generic prices will plummet to levels so low you won't even worry about what percentage your insurance company pays.

When generic drugs drop this much, it will push down many patented pharmaceutical prices because generic substitutes often work as well as newer branded drugs.

Against us are **pharmaceutical lobbyists** who will do virtually anything to protect their lucrative monopoly against **free-market** competition.

On our side are **320 million** American consumers, most of whom cannot afford to fall ill even if they have **health insurance**. That's because the deductibles, copays, and exclusions result in enormous out-of-pocket expenses that are today's leading cause of personal **bankruptcies**.

Chart Published by Life Extension in 1999
Exposing Scandalous High Drug Prices
 (This problem has exponentially worsened since then)

Comparison of US and European Drug Prices

Drug	Quantity	Potency	US Price	European Price
Premarin	28	0.625 mg	\$ 14.98	\$ 4.25
Synthroid	50	100 mcg	\$ 13.84	\$ 2.95
Coumadin	25	10 mg	\$ 30.25	\$ 2.85
Prozac	14	120 mg	\$ 36.12	\$18.50
Prilosec	28	20 mg	\$109.00	\$39.25
Norvasc	30	5 mg	\$ 44.00	\$23.00
Claritin	20	10 mg	\$ 44.00	\$ 8.75
Augmentin	12	500 mg	\$ 49.50	\$ 8.75
Zocor	28	20 mg	\$ 96.99	\$45.00
Paxil	28	30 mg	\$ 63.69	\$43.00
Zestril	60	5 mg	\$ 53.49	\$15.00
Prempro	28	0.625 mg	\$ 23.49	\$ 4.75
Glucophage (metformin)	50	850 mg	\$ 54.49	\$ 4.50
Cipro	20	500 mg	\$ 87.99	\$62.75
Zoloft	100	50 mg	\$480.00	\$65.00
Pravachol	28	10 mg	\$ 55.60	\$31.00





New Threat to Dietary Supplements

The **FDA** has issued new guidance rules for **natural ingredients** that will deny consumers access to improved approaches to better health.¹³ These rules will stifle innovation in the dietary supplement marketplace.

This is great news for **drug companies** that can now patent natural ingredients and convert them into expensive drugs. These new rules will also deny nutrients to Americans that can prevent degenerative illness, thereby creating even more demand for expensive pharmaceuticals.

Fight Back against FDA Tyranny!

In **1992**, the FDA proposed reclassifying certain dietary supplements as prescription drugs.

This ignited an avalanche of protests by consumers. **Congress** was inundated with letters demanding legislation to prevent the FDA from censoring access to natural ingredients that had demonstrated health benefits.

The result was passage of the **Dietary Supplement Health and Education Act in 1994**.¹⁴ This Act spared many lives by providing consumers with affordable access to nutrients like **coenzyme Q10** and higher-potency **vitamin D**.

Life Extension is now coordinating with other health freedom groups to stop Big Pharma from further monopolizing consumer access to affordable dietary supplements and conventional healthcare. We need the support of everyone reading this article to win this battle.

For those who think it's not worth the effort, consider the consequences of failing to take action. Innovation in the natural ingredient marketplace will be stifled while pharmaceutical companies grab dietary supplements and gain FDA protection to sell them as **prescription drugs**.

Many retired seniors will have to take jobs to afford their medications. Those working full-time may have to find additional part-time work to pay the high premiums and many out-of-pocket expenses no longer covered by medical insurance.

These problems can be partially resolved if **free-market** competition is allowed in the generic drug and dietary supplement marketplaces.

Log on to Our Legislative Action Website

Life Extension is mobilizing a grass roots campaign to overwhelm the lobbyists that have dominated Congress and federal agencies.

We've updated our website with the current Representatives and Senators so you can easily send them an email protesting FDA's draconian actions taken against your supplements and the unnecessary high cost of generic medications.

To let your voice be heard on Capitol Hill, please log on to:

[**LifeExtension.com/consumer**](http://LifeExtension.com/consumer)

For longer life,

William Faloan

AS WE SEE IT

WILLIAM FALDON



ARE WE TO BECOME SERFS OF THE DRUG MONOPOLY?

THE HIGH COST OF PRESCRIPTION drugs is causing major economic upheaval in the health care system and is forcing many of those without insurance to go broke paying for their medicines.

While politicians are trying to get Medicare (meaning the taxpayer) to shoulder part of this burden, The Life Extension Foundation has shown that inflated drug prices are a result of a protected monopoly the FDA grants to the pharmaceutical giants. As anyone familiar with free markets knows, lack of competition means the consumer pays exorbitant prices for lower quality products. In the case of prescription drugs, Americans pay the highest prices in the world and are often the last the gain access to therapies that were long ago approved in other countries.

Up until now, HMOs and insurance companies have been subsidizing consumer prescription drug purchases through nominal "co-pay" arrangements. That price protection is rapidly vanishing, as most HMOs have lost money over the last three years and are raising premiums and co-pays on prescription drugs to cut the financial hemorrhage. In some cases, HMOs are going out of business because their premium base does not cover the skyrocketing costs of prescription drugs.

One problem has been that prescription drug prices are increasing at four times the rate of inflation because without free market competition, drug companies can raise prices at their discretion. Another reason for this pending healthcare crisis is that patients are succumbing to drug company advertising and demanding their



OUTRAGEOUSLY HIGH DRUG PRICES

When we established the FDA Museum in 1994, one of the areas of malfeasance we exposed was the inflated prices Americans pay for their medicines compared to citizens of other countries.

In March 1999, The Life Extension Foundation conducted a survey of popular European and U.S. drug prices to see what the actual difference was. We compared these drugs brand-name to brand name. We are reprinting the following chart to show just how badly Americans are being defrauded by the FDA-protected drug cartel:

Drug	Quantity	Potency	U.S. Price	European Price
Premarin	28	0.6 mg	\$14.98	\$4.25
Synthroid	50	100 mg	\$13.84	\$2.95
Coumadin	25	10 mg	\$30.25	\$2.85
Prozac	14	20 mg	\$36.12	\$18.50
Prilosec	20	28 mg	\$109.00	\$39.25
Norvasc	30	5 mg	\$44.00	\$23.00
Claritin	20	10 mg	\$44.00	\$8.75
Augmentin	12	500 mg	\$49.50	\$8.75
Zocor	28	20 mg	\$96.99	\$45.00
Paxil	28	30 mg	\$63.69	\$43.00
Zestril	60	5 mg	\$53.49	\$15.00
Prempro	28	0.6 mg	\$23.49	\$4.75
Glucophage	50	850 mg	\$54.49	\$4.50
Cipro	20	500 mg	\$87.99	\$62.75
Zolof	100	50 mg	\$80.00	\$65.00
Pravachol	28	10 mg	\$55.60	\$31.00

Are We to Become Serfs of the Drug Monopoly?
Reprint from **February 2000** issue of *Life Extension* magazine

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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.

ArthroMax® Advanced with UC-II® & AprèsFlex® is a multinutrient formula that supports healthy joint function.

Two clinically validated ingredients in this formula: AprèsFlex® and UC-II® maintain cartilage and ease inflammation and thus may promote comfortable joint structure and function.

To order **ArthroMax® Advanced with UC-II® and AprèsFlex®** call **1-800-544-4440** or visit **www.LifeExtension.com**

ArthroMax® Advanced with UC-II® & AprèsFlex®

Item #01618 • 60 capsules

	Retail Price	Your Price
1 bottle	\$36	\$27
4 bottles		\$24 each



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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New Zealand Whey Protein Concentrate

is uniquely derived from grass-fed, free-range cows living healthy lives in New Zealand and not treated with growth hormone (rBST). Its naturally high content of branched-chain amino acids (BCAAs), lactoferrin, and immunoglobulins is ideal for those who wish to:¹⁻⁵

- Help maintain lean muscle mass,
- Support healthy immune function, and
- Protect against free radical attack.

Available in both **natural chocolate** and **natural vanilla** flavors.

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Contains milk.
Non-GMO

New Zealand Whey Protein Concentrate (Vanilla)

Item #01770 • 500 grams

	Retail Price	Your Price
1 bottle	\$30	\$22.50
4 bottles		\$19.95 each



New Zealand Whey Protein Concentrate (Chocolate)

Item #01771 • 640 grams

	Retail Price	Your Price
1 bottle	\$30	\$22.50
4 bottles		\$19.95 each



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Dual Encapsulation for Optimal Delivery

Probiotic blend Phage blend

FLORASSIST® GI with Phage Technology combines four types of **phages**, along with six strains of **probiotics** that work *within hours*, not days.

The addition of **phages** is designed to remove unwanted **bacteria** in the **intestines** to make room for the beneficial **probiotics**.

FLORASSIST® GI with Phage Technology • Item #02125
30 liquid vegetarian capsules

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1 bottle	\$33	\$24.75
4 bottles		\$22.50 each



The suggested daily serving of one liquid vegetarian capsule of **FLORASSIST® GI with Phage Technology** provides:

Probiotic Blend • 15 Billion CFU^{†}**

- *Lactobacillus acidophilus* La-14
- *L. rhamnosus* Lr-32
- *Bifidobacterium lactis* BI-04
- *B. bifidum/lactis* Bb-02
- *L. paracasei* Lpc-37
- *B. longum* BI-05

TetraPhage Blend • 15 mg ^{}**

- LH01 - Myoviridae
- T4D - Myoviridae
- LL5 - Siphoviridae
- LL12 - Myoviridae

The **probiotic blend** in this formula is identical to the popular **Florassist Balance**. This new formula adds **phages** that promote the ability of beneficial bacteria to propagate.

To order **FLORASSIST® GI with Phage Technology**, call **1-800-544-4440** or visit **www.LifeExtension.com**

Non-GMO † Colony Forming Units at time of manufacture. ** Daily Value not established.

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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Vitamins C and E Associated with Decreased Risk of Dementia

An article in the *Annals of Pharmacotherapy* reports an association between the intake of **vitamin C** and **E** supplements and a lower risk of developing cognitive decline among men and women aged 65 and older.*

The investigation included 5,269 men and women who were free of dementia upon enrollment in the Canadian Study of Health and Aging from 1991 to 2002. Follow-up examinations conducted during 1996-1997 and 2001-2002 provided post-enrollment diagnoses of dementia or cognitive impairment without dementia.

Over up to 11 years of follow up, 821 cases of all-cause dementia were diagnosed and 882 cases of cognitive impairment without dementia developed. In comparison with those who did not report supplementing with either vitamin, the use of vitamin C and/or vitamin E was associated with a **38% lower** adjusted risk of dementia from any cause.

Editor's Note: For cognitive impairment without dementia, the adjusted risk was **23%** lower among those who used either or both vitamins. Evaluation of the effects of using either vitamin alone resulted in associations with similar risk reductions.

* *Ann Pharmacother.* 2016 Oct 4.

Latest Vitamin D Research Suggests Lifespan Link and More

In an investigation published in *Cell Reports*, a team from the Buck Institute found that **vitamin D** extended median lifespan in the roundworm *C. elegans* by a third and helped support protein homeostasis, the ability of proteins to maintain shape and function.*

"Vitamin D3 reduced the age-dependent formation of insoluble proteins across a wide range of predicted functions and cellular compartments, supporting our hypothesis that decreasing protein insolubility can prolong lifespan," reported research team leader Karla Mark, PhD.

"Vitamin D engaged with known longevity genes. It extended median lifespan by **33%** and slowed the aging-related misfolding of hundreds of proteins in the worm," explained senior author Gordon Lithgow, PhD. "Our findings provide a real connection between aging and disease and give clinicians and other researchers an opportunity to look at vitamin D in a much larger context."

Editor's Note: "Vitamin D3, which is converted into the active form of vitamin D, suppressed protein insolubility in the worm and prevented the toxicity caused by human **beta-amyloid** which is associated with Alzheimer's disease," Dr. Lithgow added. "Given that aging processes are thought to be similar between the worm and mammals, including humans, it makes sense that the action of vitamin D would be conserved across species as well. Maybe if you're deficient in vitamin D, you're aging faster. Maybe that's why you're more susceptible to cancer or Alzheimer's."

* *Cell Rep.* 2016 Oct 25;17(5):1227-37

Quercetin Improves Rheumatoid Arthritis Symptoms and Disease Activity

A recent report in the *Journal of the American College of Nutrition* found a remarkable benefit for supplementing with **quercetin** in a randomized, double-blind trial of women with rheumatoid arthritis.*

The trial included 40 female rheumatoid arthritis patients who were given **500 mg** of quercetin or a placebo daily for eight weeks. Blood samples collected prior to and after the treatment period were analyzed for erythrocyte sedimentation rate and high-sensitivity tumor necrosis factor-alpha. These two blood tests are a measure of inflammation.

The findings of physician-administered examinations that determined the number of swollen and tender joints were combined with erythrocyte sedimentation rate results to calculate disease activity. Health assessment questionnaires assessed quality of life and disability.

At the end of the trial, women who received quercetin had less early morning stiffness, morning pain and pain after activity compared to pretreatment levels. In contrast, those who received a placebo experienced nonsignificant changes.

Editor's Note: Disease activity scores, number of tender joints, health assessment questionnaire scores, and physician global assessments significantly improved in the quercetin group while remaining essentially unchanged among those who received a placebo. By the end of the study, erythrocyte sedimentation rate was slightly lower and tumor necrosis factor-alpha was significantly lower in quercetin-treated subjects, while no significant changes occurred in the placebo group.

* *J Am Coll Nutr.* 2016.

Brand-Name Drug Prices Rise at Shocking Rate

A new study finds that older Americans are being gouged by the prices of brand-name drugs, which skyrocketed last year at a rate **130 times** faster than inflation.*

Researchers at the nonprofit organization AARP discovered that the retail prices of 268 brand-name prescription drugs rose, on average, **15.5%** in 2015 against a **0.1%** increase in the rate of general inflation. The drugs, which are commonly taken by seniors, include 49 that are used to treat diabetes, high cholesterol, high blood pressure and other wide spread, chronic conditions.

Debra Whitman, chief public policy officer at AARP, stated in a news release, "What's particularly remarkable is that these incredibly high price increases are still occurring in the face of intense public and congressional criticism of prescription drug pricing practices."

On average, the elderly take 4.5 prescriptions monthly. Couple that with the average cost of regular use for one brand-name drug, which rose to over \$5,800, and that brings average annual drug costs to around \$26,100. Medicare beneficiaries' average median income is just \$24,150.

"Prescription drug therapy is not affordable when its cost exceeds the patient's entire income," said report co-author Leigh Purvis. "Even if patients are fortunate enough to have good healthcare coverage, high prescription drug costs translate into higher out-of-pocket costs."

Editor's Note: According to the study, of the six drugs with the highest price increases, five were from Valeant Pharmaceuticals. The study's authors found the price of Ativan, the company's antianxiety drug, shot up over **2,800%** between 2006 and 2015.

* Available at: <http://tinyurl.com/jpr8p5q>. Accessed December 15, 2016.

Former Drug Company Execs Charged in Price-Fixing Plot

As part of an ongoing Department of Justice investigation into the **generic drug** industry, charges have been brought against two ex-drug company executives for allegedly participating in a bid-rigging and price-fixing plot.*

Named in separate two-count felony cases were Jason Malek, the former president of Heritage Pharmaceuticals, and Jeffrey Glazer, the company's former CEO. The alleged scheme involved two drugs: the diabetes medication **glyburide** and **doxycycline hyclate**, an antibiotic. According to court papers filed in Philadelphia, the scheme was in effect possibly dating back to April 2013 and continued to December 2015.

The cost of 500 tablets of doxycycline is reported to have gone from \$20 in October 2013 to a whopping \$1,845 in May 2014.

Deputy Assistant Attorney General Brent Snyder charged that the two executives entered into unlawful agreements to fix prices and "sought to enrich themselves at the expense of sick and vulnerable individuals who rely upon access to generic pharmaceuticals as a more affordable alternative to brand-name medicines."

Heritage had fired both men in August following an internal investigation. Reacting to the charges, the company stated the former executives had engaged in "a variety of serious misconduct."

Editor's Note: In a prepared statement, Special Agent in Charge Michael Harpster of the FBI's Philadelphia division commented, "Conspiring to fix prices on widely-used generic medications skews the market, flouts common decency, and very clearly breaks the law. It's a sad state of affairs when these pharmaceutical executives are determined to further pad their profits on the backs of people whose health depends on the company's drugs."

* Available at: <http://tinyurl.com/z9rl3yo>. Accessed December 15, 2016.



Supports a Healthy Stomach Environment

Gastro-Ease contains a unique nutrient compound (zinc-carnosine) to help soothe the stomach lining while providing a beneficial bacteria (*Lactobacillus reuteri*) for optimal gastric health.

Suggested dose is one capsule twice daily, after breakfast and before bed.

Gastro-Ease

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	Retail Price	Your Price
1 bottle	\$44	\$33
4 bottles		\$30 each

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STRONG SUPPORT FOR SORE MUSCLES

After Exercise and Everyday Exertion

Tart cherries are chockfull of compounds found to block **COX-1** and **COX-2** inflammatory enzymes.¹ Benefits of the fruit include:²⁻⁶

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

ANTHOCYANINS

Anthocyanins—the powerful flavonoids found in dark-pigmented fruit—have been studied for their many advantages, including **heart, cellular, and cognitive health.**⁷⁻⁹ Tart cherries have a higher content of anthocyanins than many other fruits.¹

Life Extension® offers **100% natural Tart Cherry with CherryPURE®**. This formulation provides all the muscle-supporting benefits of tart cherries and matches the anthocyanin dose used in successful clinical trials.^{2,5}

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Non-GMO

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

Tart Cherry with CherryPURE®

Item #02023 • 60 vegetarian capsules

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1 bottle	\$20	\$15
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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.





Natural Methods to Suppress Destructive Cortisol

One way **stress** inflicts its deadly damage is by raising **cortisol** levels.¹

The result is *accelerated aging* that wreaks havoc throughout the body.

Increased cortisol levels not only age our internal organs, but make us appear **older** than our actual years.²

People with elevated levels of cortisol have higher **mortality** rates and face an increased risk for cardiovascular disease, diabetes, metabolic syndrome, and neurodegenerative disorders.³⁻⁶

Too often, physicians prescribe a range of addicting pharmaceuticals in an effort to reduce a patient's stress and anxiety. This provides a temporary fix, but tolerance to the drugs negates their effectiveness over time.

Fortunately, researchers have identified several natural compounds that have been shown in **humans** to produce a noticeable reduction in **cortisol** levels.

These natural compounds can help reduce the toxic response to stress and anxiety that underlies so many of today's chronic health problems.

Life-Threatening Dangers of High Cortisol

Cortisol is a **glucocorticoid** hormone that is essential for life.

However, in the presence of chronic stress, cortisol surges to unhealthy high levels, producing a major problem that threatens health and longevity.

Most disturbingly, recent studies have shown that chronically elevated cortisol levels are strongly associated with increased risks of dying. For example, one study showed that men with high **cortisol** levels were **63%**, and women **82%**, more likely to die than those with lower levels.⁷

The risks of dying specifically from cardiovascular disease are even more pronounced in those with high cortisol: one study found a **five-fold increased risk of death**, both among those with known cardiovascular disease and with people previously free of risk factors at baseline.³

High cortisol levels create havoc through the body's systems and are associated with a long list of age-accelerating diseases including obesity, hypertension, type II diabetes, and cardiovascular risk, as well as increased risk of infection, osteoporosis, depression, and even neurodegenerative diseases like Alzheimer's.^{2,3,7-12}

Another study found that higher cortisol levels are associated with higher **perceived age**, that is, age as assessed from a facial photograph. People with higher levels of cortisol look older because they are experiencing accelerated aging that is beginning to show up in their facial features.² Perceived age is well known to be associated with illness and the risk of death.²



There is even submicroscopic evidence that cortisol accelerates aging. Chronically high cortisol levels are associated with shortening of **telomeres**, the “fuse-like” stretches of DNA that cap the ends of our chromosomes.^{13,14} As telomeres shorten, the cells that bear them get closer and closer to the ends of their useful lives, eventually aging the tissues and organs in which they dwell.

Stress—emotional, psychological, physical, or biochemical—is detrimental in part because it raises levels of cortisol. Reducing stress is always a good idea, but much of the stress in our daily lives is unavoidable, and sometimes efforts to avoid it bring on more stress. That's why it is so important to reduce the cortisol elevations induced by stress, even when we cannot eliminate the stress itself.

And that is what has scientists so excited about natural compounds capable of lowering cortisol levels. Let's look at those now.

Lychee Polyphenols Lower Cortisol Levels

The **lychee fruit** has been grown in China since at least the 11th century.¹⁵ It is rich in **polyphenols** that promote a variety of biological activities, most notably the ability to fight oxidative stress, inflammation and lower **cortisol** levels.¹⁶

Most lychee polyphenol products available in stores contain *long-chain polyphenols* which are not easily *absorbed* in the intestinal tract.

Using a proprietary process, scientists are now able to reduce the polyphenol size through steps that include the addition of green tea catechins.¹⁷ This allows the new molecule to be stable and highly bioavailable. When researchers tested the bioavailability of the lychee-green tea blend in humans, they found that the polyphenol content in blood was **3 times higher** in comparison to ordinary lychee extract alone.¹⁸

Human studies show that the **lychee-green tea** blend can reduce circulating cortisol levels, and can also oppose other physiological effects of stress.

In one study, scientists enrolled 19 sedentary, but otherwise healthy, male volunteers.¹⁶ Subjects were randomly assigned to receive either a placebo or **100 mg** of the new **lychee-green tea** blend in water each day for 4 weeks. Subjects underwent blood tests for cortisol, markers of inflammation, and other basic evaluations, before and after the supplementation period.

At the end of treatment, lychee-green tea blend recipients, but not placebo users, had significant decreases in **cortisol** level, as well as of the inflammatory cytokines **IL-1beta** and **IL-6**.

Lychee-Green Tea Blend Blunts Stress-Induced Cortisol Response

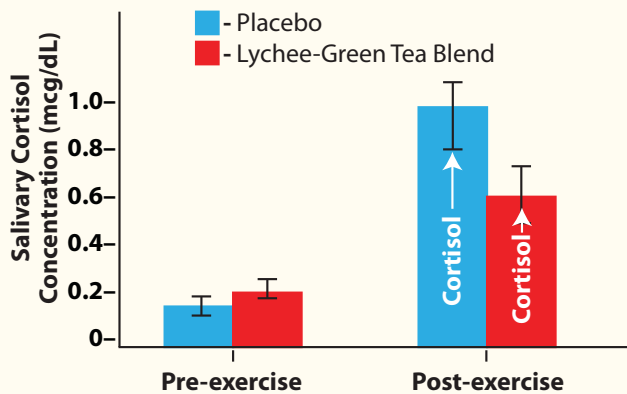


Figure 1. Cortisol levels measured in saliva pre- and post-exercise under low-oxygen stress conditions. Similar in both groups at baseline, cortisol levels soared in the placebo group following the exercise, while that rise was sharply blunted in subjects supplemented with a lychee-green tea blend.¹⁹

Because it is known that exercise raises both cortisol and inflammatory factors, subjects were also tested after **exercise**. The rate of increase in these compounds was significantly reduced in lychee-green tea blend-supplemented subjects, demonstrating that the lychee-green tea blend can suppress stress-induced, as well as baseline, cortisol levels.

That finding was supported by another study in which ten healthy male students were supplemented with **100 mg** of the lychee-green tea blend, twice daily, for ten days prior to performing physical activity conducted under low oxygen conditions to bring out stress.¹⁹

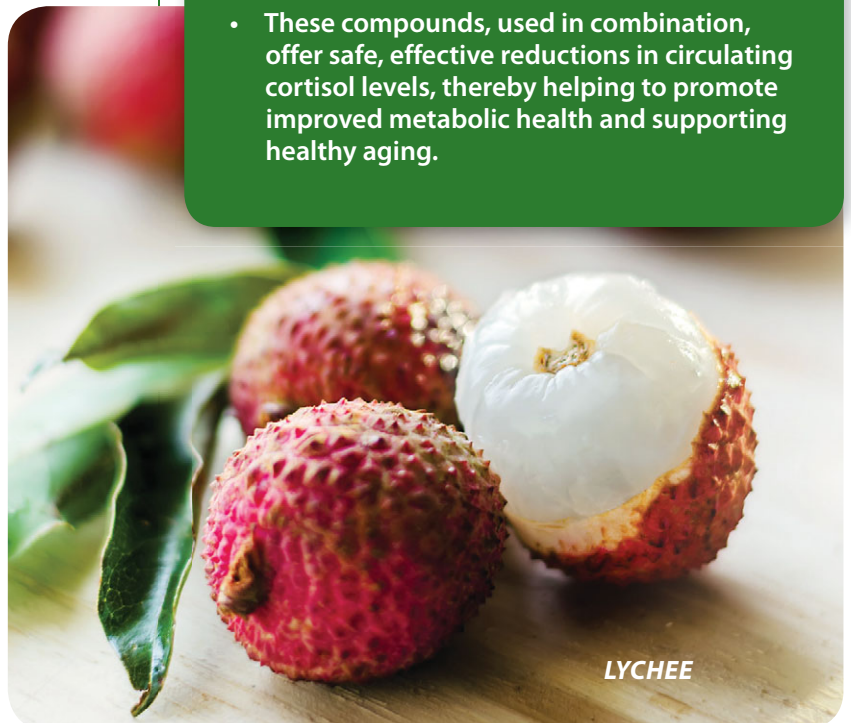
While both groups had similar cortisol levels prior to supplementation, the placebo group's cortisol rose more after the stressful exercise, while the rise in the lychee and green tea blend-supplemented group was significantly less pronounced.

A third study demonstrated similar results using a different cortisol-raising stress: hot water. In this study, healthy young men received either a placebo or lychee-green tea blend, **100 mg**, half an hour before immersing their lower legs in hot water for half an hour.²⁰ Again, measurements of cortisol and inflammatory cytokines were made before and after the stress-inducer.

What You Need to Know

Benefits of Lowering Cortisol

- While stress is unavoidable, it is now possible to do something about the resulting dangerous elevations in circulating cortisol levels.
- Cortisol is a stress-response hormone that is beneficial over short periods, but chronic stress leads to chronically high cortisol levels, which are dangerous.
- High cortisol produces all of the manifestations of overmedication with steroids: central obesity, rising blood sugar, hypertension, and lipid disturbances, while also softening bones and promoting neurodegeneration.
- A lychee-green tea blend provides highly bioavailable polyphenols with potent cortisol-lowering properties, as shown in multiple human studies.
- Extracts from the bark of the *Magnolia* and *Phellodendron* trees have been shown in combination to lower cortisol and reduce manifestations of stress.
- These compounds, used in combination, offer safe, effective reductions in circulating cortisol levels, thereby helping to promote improved metabolic health and supporting healthy aging.



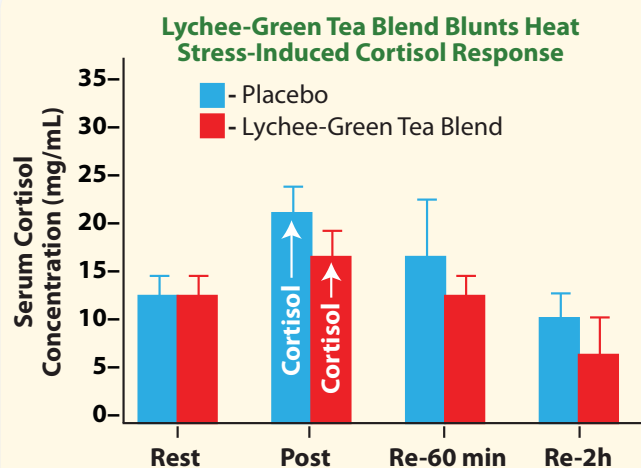


Figure 2. Cortisol levels measured in blood at rest, immediately post-exposure to hot water, and after 60 and 120 minutes of rest following exposure. The rise in cortisol levels was blunted in the lychee-green tea blend recipients at each time point after baseline.²⁰

The lychee-green tea blend recipients, compared to placebo subjects, had significantly lower cortisol concentrations, as well as levels of IL-1beta and IL-6, when measured after the heat stress. These effects persisted for up to two hours after the heat stress had ended.

Supplemented men experienced a significantly lower rise in skin and core body temperatures during the application of heat, indicating improved total body control over the stressful event.

These findings have been further borne out by subsequent studies showing that lychee-green tea blend supplementation prevents heat-induced body temperature elevations, beneficially reduces fluid losses from sweating under heat stress, and prevents stress-induced blunting of immune system responses.²⁹⁻³²

Tree Bark Extracts Help Lower Cortisol

Extracts of *Magnolia officinalis* bark have been previously studied for their anti-anxiety effects, but without the troubling side effects characteristic of anti-anxiety medications.³³ An extract from the bark of the Asian tree *Phellodendron amurense*, has been tested in an animal model of stress, and demonstrated significant reductions in stress manifestations without sedation.³³

Human studies of the combination of extracts have demonstrated both their stress-relieving properties and their ability to mitigate stress-induced cortisol elevations. In one such study, researchers enrolled 56 moderately stressed but otherwise healthy men and

women.³⁴ Subjects supplemented with **250 mg** of the mixed bark extracts twice daily, or received a placebo, for a 4-week period.

After the supplementation period, **cortisol** levels were **18% lower** in the supplemented group than in the placebo recipients. This reduction in cortisol levels was accompanied by improvements in mood and reductions in stress, depression, anger, and fatigue, all of which could be interpreted as related to the lower cortisol levels.

Two other studies have evaluated the combined bark extract supplement at a dose of **250 mg**, three times daily. In one, conducted in otherwise healthy overweight, premenopausal women, the supplement significantly decreased **anxiety** as measured by a variety of scales and scores.³³ In the other, the placebo group had significant weight gain over 6 weeks, which was prevented in the supplemented subjects.³⁵

In both studies, the supplemented subjects also had reductions in cortisol levels compared with placebo, but the differences did not reach statistical significance, probably because of the relatively small sample size of these studies.

Life-Shortening Impact of Elevated Interleukin-6

As we age, the age-related decline in immune function not only compromises our ability to fight **infections** and **malignancies** but increases the risk of death.

In youth we are primed with an abundance of **naïve T cells** ready to destroy bacteria, viruses, and cancers. Once this cell performs its job, it then becomes a **memory T cell** that responds only to the same bacteria, virus, etc. This shift in immune cell populations is characterized by the abundance of **memory T cells** that emit **pro-inflammatory** signals that wreak havoc in every organ system.²¹

One of the deadliest of these inflammatory “signals” is a cytokine called **interleukin-6 (IL-6)**.²²

A human study evaluated the impact of **lychee-green tea blend** on **cortisol** and inflammatory markers such as **IL-6**. At the end of the study, researchers found that supplemented individuals had significant reductions in **cortisol** and **IL-6** levels.¹⁶

Higher **IL-6** levels are associated with a **2-fold** increased risk of death.²³ Higher levels are also involved with several degenerative processes, including **frailty**, that so many elderly suffer.²⁴⁻²⁷ It is important to note that a well-known trait of healthy **centenarians** is that they have unusually low levels of **IL-6**.²⁸

Dangers of Elevated Cortisol Not New

The **August 1984** issue of this publication (called **Anti-Aging News**) featured an in-depth report about the age-accelerating effects of elevated **cortisol**.

The article offered little in the way of available approaches to suppress cortisol other than vitamin C, aspirin, and drugs not approved in the United States.

Move forward **33 years** and scientists have uncovered natural approaches to suppress excess blood **cortisol** levels.

This represents a significant advance in neutralizing a deadly factor involved in degenerative aging.

The front cover of the **1984** issue of **Anti-Aging News** describing dangers of **cortisol** appears after the scientific **references** to this article.

Summary

Everyday stress raises and keeps elevated levels of our stress-response hormone, **cortisol**.

Elevated cortisol brings with it components of the deadly metabolic syndrome, as well as additional threats such as immune suppression, osteoporosis, and neurodegeneration.

Now, it is possible to mitigate the impact of **cortisol**, even if we cannot eliminate the stress from our lives.

Lychee-green tea blend and bark extracts from *Magnolia* and *Phellodendron* trees have all been shown to lower cortisol levels in humans.

Lowering chronically-elevated cortisol levels can help mitigate this underlying cause of common disorders associated with aging. ●

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

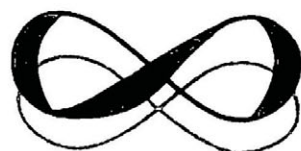
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ANTI-AGING NEWS

The Insider's Report on Efforts to Prevent Aging and Rejuvenate the Aged

ANTI-AGING NEWS

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Stress, Cortisol, Interferon And "Stress" Diseases I. Cortisol As The Cause Of "Stress" Diseases By Dr. Alfred T. Sapse

One of the most influential ideas in modern medicine is Hans Selye's theory of "stress" as an important contributing factor to diseases and aging. While other medical scientists of his time were searching for the "causes" of specific diseases, Selye focused his attention on how the body responds to environmental agents, which he called "stressors". In doing so, he discovered a specific pattern of biochemical adaptation to environmental stress that can lead to disease, disorder, disability, and death.

Dr. Alfred Sapse has been studying the mechanisms by which the body adapts to stress for many years. In the process, he's uncovered considerable evidence that cortisol — one of the primary hormones involved in the stress response may be a critical factor in the onset and expression of diseases associated with stress. The following article by Dr. Sapse is reprinted from the journal MEDICAL HYPOTHESES, Vol. 13, 31-44, 1984.

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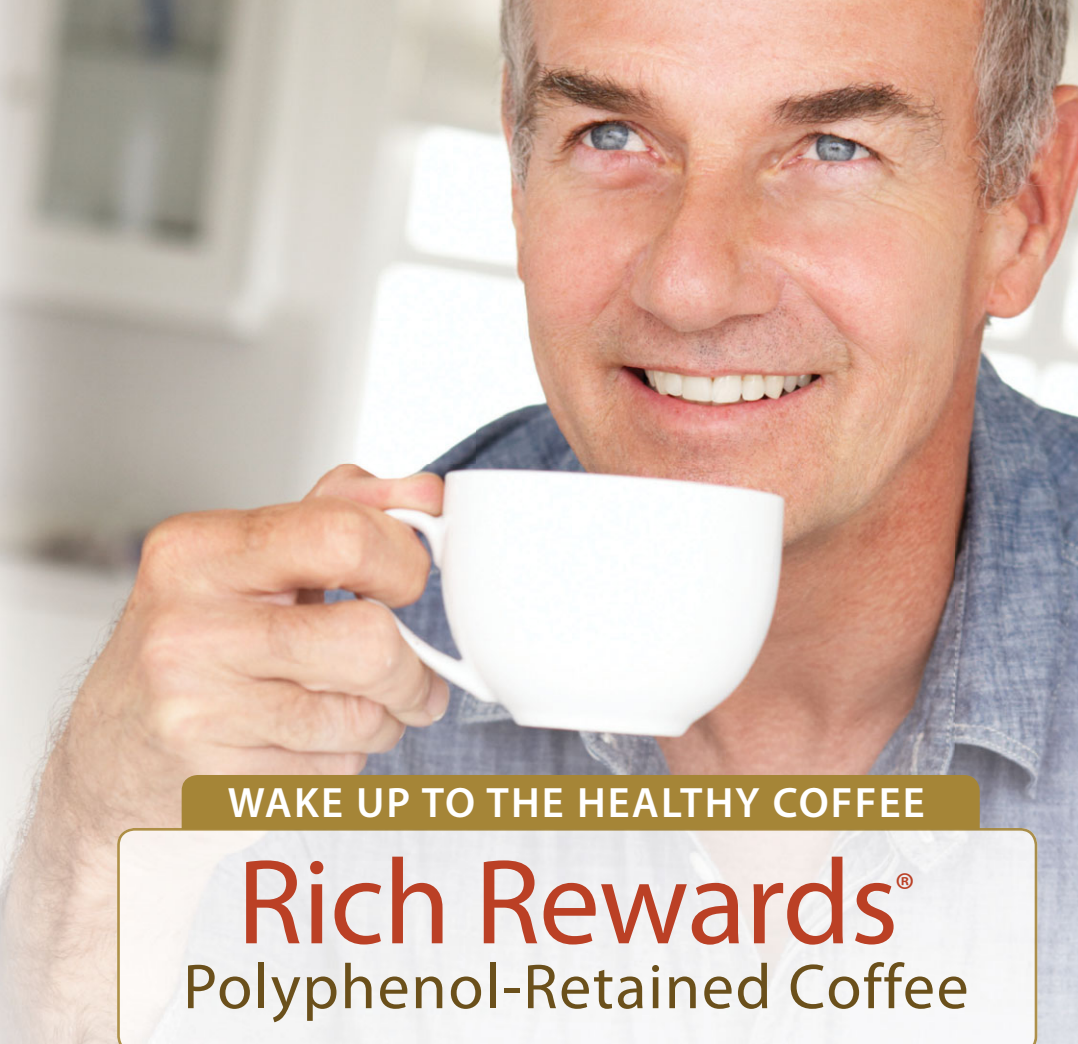
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^{*} US Patent 6,723,368.



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BY MICHAEL DOWNEY





Ceramides

Create Youthful Skin from **Within**

Young people's **skin** naturally contains **ceramides** that produce a moist, plump, wrinkle-free appearance.

Oral **ceramides** have grown in popularity because people feel the moist suppleness of youthful skin return within a short time after taking one small capsule each day.

Clinical studies have shown that an oral **phytoceramide** dramatically hydrates, smooths, and rejuvenates aging and wrinkled skin.

A proprietary oral **ceramide** can permeate the skin from the inside out to nourish aging dermal layers analogous to how *young* skin is maintained.

The four layers of the epidermis contain **ceramides** that play a critical role in creating the natural barrier that holds in moisture, keeps out infection—and prevents wrinkles.¹

First detected in 1884, ceramides have been added to some topical skincare creams since the early 1990s by major cosmetic companies to replenish age-related loss.¹ Touted as a way to diminish fine lines, wrinkles, and dryness, their effects were generally modest.²⁻⁴

To solve this problem, researchers developed an FDA-approved, **oral** ceramides capsule that delivers them *internally*—from the bloodstream—where they move up through the skin's inner layers to dramatically hydrate, smooth, and rejuvenate aging and wrinkled skin.^{2,5}

Skin-Aging Effects of Declining Ceramide Levels

Ceramides are major skin components that help form the “glue” that holds surface cells together.^{6,7} Aging skin progressively loses these natural lipids.⁸⁻¹⁰

Ceramide depletion not only causes skin to wrinkle, but also makes it more susceptible to moisture loss, environmental allergens and skin diseases such as atopic dermatitis.¹¹⁻¹³

To overcome the fact that topically-applied ceramides do not sufficiently reach the deeper skin layers, scientists have developed plant-derived ceramides—or **phytoceramides**—that can be taken orally. This ensures that these potent molecules are **absorbed** into the bloodstream and inner layers of the skin, effectively working from the inside out to hydrate, smooth, and rejuvenate aging and wrinkled skin.^{2,5}

Additionally, unlike topical face creams, orally ingested phytoceramides reach skin *throughout the body*.

Until this development, the only way to get ceramides orally was through foods such as wheat and rice. These blood glucose-spiking foods do not provide sufficient **ceramide** quantities to optimally rejuvenate aging skin.^{1,2}

Early research focused on identifying potentially useful oral ceramides from animal sources.² Scientists switched to **phytoceramides** available in grains such as rice, corn, and wheat.^{2,3} Ultimately, researchers achieved success by using non-genetically modified wheat and produced an extract containing only purified oils.²

This game-changer is a proprietary, **wheat-derived** phytoceramide extract that can be taken orally to nourish skin cells via the body's natural route—through the bloodstream into the deepest skin-cell layers and up to the extracellular matrix.²

Effectiveness of Oral Phytoceramides

Researchers then set out to investigate the effectiveness of this wheat-derived ceramide extract in scientific studies.^{2,5,14} They demonstrated in a laboratory cell study that this extract effectively hydrated human skin and restored its youthful structure—after the skin cells' protective barrier function had been disrupted.¹⁴

In another study, wheat **ceramides** reduced levels of free radicals in the skin and inhibited *elastase* enzymes.¹⁵ These enzymes would ordinarily destroy elastin and contribute to increased wrinkling and loss of skin flexibility.¹⁶

Ceramides have also been shown to inhibit the process by which the skin produces the hyperpigmentation that appears outwardly as age spots and other discolorations of the skin. This suggests that by replacing ceramides from the inside out, oral wheat-derived phytoceramides may inhibit or reverse the uneven pigmentation of skin aging.¹⁷⁻¹⁹

These findings suggest that it is possible to dramatically rejuvenate aging skin—simply by swallowing a capsule. However, to conclusively demonstrate wheat-derived phytoceramides' effectiveness, investigators needed to conduct experiments of the scientifically most rigorous type: double-blind, placebo-controlled human studies.





What You Need to Know

Clinical Proof of Rejuvenation Effects

In the first clinical trial, **200 mg** daily of either an oral placebo or an oral, powdered-phytoceramide extract was given, for three months, to women with dry to very dry skin. Skin hydration was then evaluated using three distinct methods: a special testing machine, a dermatologist's examination, and the subjects' own subjective scores.⁵

Women who had been taking the phytoceramide extract experienced substantial improvement in skin hydration as assessed by all three of these testing methods. These ceramide-taking volunteers also experienced significantly reduced dry patches, roughness, and itching. These changes were not observed in the placebo arm of the study.⁵

This placebo-controlled clinical trial provided a clear indication that the phytoceramides had successfully made their way through the bloodstream directly into the skin cells, where they provided a powerful rehydrating and rejuvenating effect.⁵

To secure further confirmation of these compelling results, scientists conducted a second double-blind clinical trial—but this time their aim was to evaluate this wheat-derived phytoceramide extract in its oil form.²

Restore Youthful Skin with Ceramides

- Dropping years off your appearance is now possible thanks to an oral ceramide extract.
- Lipids known as ceramides, which naturally occur in the multiple layers of human skin, may provide the moist, plump, wrinkle-free appearance seen in the young.
- Expensive skin creams have contained ceramides for decades now, but aging individuals find that these surface ceramides deliver only modest improvement.
- A breakthrough, wheat-derived phytoceramide is now available that can be taken orally in capsule form, and studies show that it permeates the skin from the inside out—mirroring how a young person's skin is nourished.
- Clinical studies have confirmed that this oral phytoceramide dramatically hydrates, smooths, and rejuvenates aging skin.

Ceramides: As These Molecules Diminish, Your Skin Ages

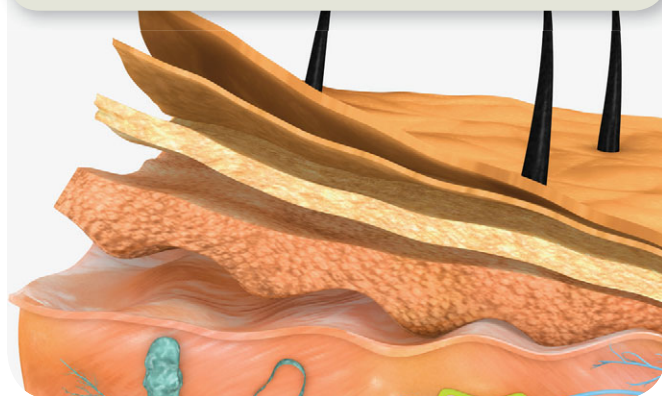
Ceramides are components of specialized lipid molecules called sphingolipids, an essential element of human skin.⁴⁵ The ceramides found in both human skin and plants are now known to be structurally similar.²⁹ All four layers of the epidermis contain ceramides, and they play a critical role in skin health by creating a barrier that reduces infection and helps to retain the skin's moisture, smoothness, and youthful look.²⁹

Over a period of four weeks, new cells created at the deepest epidermal layer migrate upwards to form the top layer of the skin (the stratum corneum) where extracellular matrix lipids inhibit loss of water.⁴⁶ By the time these cells reach the skin's surface, they become cornified or hornlike, transforming into protein-rich bricks tightly bound together by a layer of mortar composed of various lipids, up to **50%** of which are ceramides.⁴⁷

The primary function of the epidermis is to generate a relatively impermeable layer to protect the skin from dehydration and environmental stress. Ceramides play a critical role in this barrier function and in the retention of water by the stratum corneum.⁴⁷ But the aging process reduces the content of ceramides in the epidermal skin layers, which in turn contributes to dry skin and dermatitis.^{6-11,31}

Scientists have shown that, in relation to other lipids, optimal amounts of ceramides in the top layer of the skin are required to maintain youthful and healthy skin.^{11,47} Wrinkled, dry, irritated, and sensitive skin generally lacks ceramides, and topical application of ceramides has shown limited benefit.

The good news, however, is that orally taken, wheat-derived phytoceramides have been clinically demonstrated to hydrate skin and promote more youthful appearance and smoothness.^{2,5}



For this study, women with dry to very dry skin took **350 mg** daily of either the wheat ceramide oil or a placebo, and results were assessed after three months of supplementation.² To objectively measure skin hydration, the research team used a special technique known as corneometry. Results indicated that the ceramide oil supplement—but not the placebo—significantly increased hydration of the skin on the participants' arms, legs, and the body overall. Skin hydration on the arms increased by over **35%**, compared to less than **1%** in the placebo group.²

Next, volunteers were asked to rate their own personal perception of the effects of their treatments. At each point of measurement in the course of the study, the wheat phytoceramide oil extract was perceived to provide greater improvement in all factors—facial skin hydration, leg skin hydration, suppleness, roughness, uniformity of complexion, itchiness, and overall state of the skin. And these dramatic effects were noted without any significant adverse effects and with a superior level of acceptability.²

Together, these placebo-controlled, clinical trials delivered clear confirmation that orally taken, wheat-derived phytoceramides substantially boost skin hydration, smoothness, and suppleness—reflecting substantial reversal of age-related skin wrinkling, drying, and decline.^{2,5}

Issue of Ceramide Insufficiency

Involved in much more than skin appearance, **ceramides** are bioactive lipids,²⁰ essential for full functionality of the skin. Their age-related decline represents more than a mere cosmetic problem. Full functionality of the skin helps regulate body temperature, synthesize optimum amounts of vitamin D, and provide critical sensory input from the environment.²¹⁻²³

With age, declining ceramide levels constitute a health risk due to greater susceptibility to contact dermatitis.^{9,24,25} Also, the outer layer (stratum corneum) in aging human skin has decreased moisture content²⁶⁻²⁸ with greater susceptibility to infection.²⁹

Research has shown that the loss of lipid content in human skin that occurs with aging, primarily in the form of a decreased level of ceramides,⁹ results in reduced structural integrity.^{7,26,30} Lost structural integrity exposes the skin to a greater threat from environmental assaults, such as low humidity, solvents, and detergents, and a much lower capacity to recover from them.³¹

Scientists have also determined that the decline in ceramide content in mature skin⁹ may stem from a decline in the enzyme activity that normally promotes the delivery of ceramides in a usable form to the skin.³²

To inhibit this loss of ceramides—and the multiple health risks that occur as a result—it is important to boost **ceramide** levels not just on the upper surface where lotions sit, but deep inside the skin cells beneath the stratum corneum.

So maintaining youthful levels of ceramides in *all* layers of the skin achieves more than promoting a better appearance and feel—it powerfully blocks skin infections²⁴ and other skin diseases.^{9,31}

Preventing and Treating Skin Conditions

Skin lipids, including ceramides, comprise a major part of an *antimicrobial barrier*, the first line of defense against infection. Investigators have found that age-related deterioration of this barrier increases the risk of numerous skin conditions.³¹

For example, individuals with atopic dermatitis have diminished concentrations of ceramides in the outer skin layer (stratum corneum)⁹ and have higher concentrations of bacteria, especially *Staphylococcus aureus*, on the skin surface.³³ One study confirmed that the increased *Staphylococcus aureus* colonization in atopic dermatitis is correlated with a corresponding reduction in ceramides content.³⁴ These bacteria have substantial potential to cause infection if the skin barrier function is disrupted.³⁵⁻³⁷

Another common cause of potentially serious skin infections is *Streptococcus pyogenes*, which can cause erysipelas and cellulitis, which are characterized by the spread of the bacteria into the deep layers of the skin.³⁸⁻⁴⁰ Also, skin wounds and functionally compromised areas of the skin can easily be infected by another opportunistic bacterium known as *Pseudomonas aeruginosa*.^{41,42}

The link between diminished ceramides and infection was confirmed when scientists showed that repairing the breakdown in the ceramide barrier, while continuing standard topical treatments, alleviated childhood atopic dermatitis.⁴³ This is especially important, because the topical corticosteroids and other immunosuppressive agents that constitute the mainstays of traditional therapy have significant toxicity, particularly in children.

Further confirmation was documented when researchers treated patients who had contact or atopic dermatitis for eight weeks with a lipid mixture containing ceramides alone or in combination with topical corticosteroids until abatement. Compared to baseline, both treatment groups saw improvements at weeks 4 and 8. But those patients who received the **ceramide** combination with topical corticosteroids experienced a greater relief than those who used topical corticosteroids alone.⁴⁴



Summary

Our skin takes a beating day in and day out from solar exposure, pollutants, stress, and aging. Maintaining youthful, resilient skin is a challenge.

Since the early 1990s, expensive facial creams have boasted the addition of ceramides, bioactive lipids to help moisturize and protect the skin. There is little evidence, however, of the effectiveness of topical ceramides.

To solve this problem, researchers developed an oral plant-derived ceramide that moisturizes and supports skin from within the body.² ●

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

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BY MICHAEL DOWNEY



A close-up photograph of several thick, green aloe vera leaves. The leaves are arranged in a fan-like pattern, with their serrated edges clearly visible. The lighting is bright, highlighting the texture and color of the plant. The background is a soft, out-of-focus green.

Oral Health Prevents Systemic Disease

We often overlook the health of our **teeth** and **gums** as a strategy to protect against a wide range of diseases.¹

Studies published in **2015** and **2016** confirm that poor oral health can result in disorders ranging from stroke and pancreatic cancer to obesity.²⁻⁷

Brushing alone is not always sufficient to keep your mouth free of disease.

Researchers have identified natural compounds that can be used as topical oral agents (inside the mouth) to support dental and whole-body health.⁸⁻¹⁴

These compounds help safeguard against periodontal disease—which affects about **70%** of adult Americans aged 65 years and older.¹⁵ By using toothpaste and other oral products that contain these ingredients, risks of diseases originating in the mouth should be lowered.

Oral Health Affects the Whole Body

Common diseases can be worsened by poor oral health. Taking care of your mouth is an important part of a longevity program.

Gingivitis is an inflammatory response that affects the gums. When gums and bones that support the teeth are affected, it is called *periodontitis*.

Chronic *oral* inflammation is now linked to numerous systemic disorders.^{5,6,16-25}

Obesity

In **2016**, researchers published an investigation into tooth-brushing and body-size, involving 15,666 individuals. They reported that the risk of obesity, abdominal obesity, and high percentage of body fat was higher in individuals with a lower daily frequency of tooth brushing and usage of secondary oral products.⁶

This supports an earlier study finding significant correlations between body composition and periodontal disease which concluded that “...**periodontal disease and certain obesity-related systemic illnesses are related...**”²⁶



Periodontitis, the disease of the gums and bones, induces inflammatory cytokines and may contribute to obesity by elevating **C-reactive protein**,²⁷⁻²⁹ which in turn causes fat cells (adipocytes) to store more fat and burn less energy.

Cancer

A study released November **2016** in the *International Journal of Cancer* suggested that periodontal disease is a risk factor for non-Hodgkin **lymphoma**.³⁰ Also in **2016**, three other studies found that **periodontal disease** increased the risk of developing colorectal,³¹ lung,³² and pancreatic cancer.²

This pancreatic cancer link mirrors a number of previous studies. For example, **Harvard** researchers found a history of periodontal disease increased pancreatic cancer risk.⁴ And an 18-year study on over 48,000 men found significant associations between oral health status and pancreatic cancer, as well as lung, kidney, and blood cancers.⁵

This latter study also found a link between periodontal disease and greater overall risk of cancer—even in those who’ve never smoked.⁵

Heart Disease and Stroke

Two **2016** studies found an association between diagnosed periodontitis and the risk of ischemic **stroke**³ and of mortality from all causes including cardiovascular-disease.³³

A 26-year study published in **2015** concluded that **gingival inflammation** is associated with stroke risk and that “results emphasize the role of oral health personnel in prevention (of stroke).”⁷

An earlier review concluded that periodontal disease among older people correlates with increased risk of systemic diseases—including heart attack, stroke, and diabetes mellitus.³⁴

Individuals with periodontal disease have elevated blood levels of C-reactive protein, an inflammatory marker linked to increased risk for cardiovascular disease.³⁵ Research has shown that efforts to reduce the severity of periodontitis help lower systemic inflammation,³⁶ which may reduce the risk of inflammation-linked cardiovascular events.³⁷

*A frontline defense against
systemic inflammation
is excellent oral health.*



What You Need to Know

Preventing Systemic Diseases Via Better Oral Health

- Excellent oral health is on the frontline of the body's defense against systemic inflammation.
- Poor dental and gum health has been linked to a wide range of life-threatening diseases, including diabetes, cancer, rheumatoid arthritis, atherosclerosis, heart disease, and obesity.
- Scientists have demonstrated that adding certain natural compounds to toothpaste can strongly protect oral health, helping to prevent both periodontal disease and numerous systemic diseases.

Blood Sugar Control

Diabetics who control their blood sugar have a lower risk of periodontal disease than those who do not.³⁸

Periodontal disease can predispose individuals to diabetes or exacerbate existing diabetes.³⁹ In patients with type II diabetes, severe periodontitis was strongly associated with an increased risk of poor blood-sugar control.⁴⁰

One investigation revealed that hemoglobin A1C—a measure of long-term blood-sugar control—was higher in both people with type II diabetes and those with severe periodontal disease. This study showed that

eliminating periodontal infection and reducing periodontal inflammation in diabetic patients produced significant improvements in their hemoglobin A1C levels. This suggests that optimizing dental health could help prevent the damaging consequences of diabetes.⁴¹

Respiratory Infections

A common consequence of poor oral health in older adults is an elevated risk of a particular type of pneumonia. This form of pneumonia occurs when periodontal bacteria in the secretions of the mouth and pharynx are aspirated into the lungs.^{42,43}

One study that followed the rate of respiratory illness among a group of older adults in Japan demonstrated the importance of thorough oral hygiene as the best prevention strategy. During six months, only one in 98 aging adults who had their oral health cared for by dental hygienists came down with a respiratory infection, compared to nine out of 92 people who did not get the same dental care.⁴⁴



Osteoporosis

Scientists are investigating whether treating or preventing periodontal disease may promote bone density, and therefore may help inhibit osteoporosis.¹⁶ Research so far shows a link in the opposite direction, meaning that osteoporosis is a risk factor for periodontal disease.⁴⁵

This suggests that strategies for reducing osteoporosis risk, such as optimizing calcium, vitamin K and vitamin D intake, may also retard alveolar bone loss around the jawbone sockets that hold teeth roots.⁴⁵

While bisphosphonate drugs used to treat osteoporosis, such as Boniva® and Fosamax®, might offer benefits for periodontal tissues, they are associated with side effects that range from stomach pain to diarrhea.

A rare but extremely serious side effect is osteonecrosis (“bone death”) of the jaw bone, which can occur if any dental work is done while taking bisphosphonate drugs.⁴⁶⁻⁴⁸ Accordingly, safer strategies are needed that support both periodontal and body-wide bone health.

Low Birth-Weight Delivery

Observational studies provide compelling evidence that periodontal infections increase the risk for preterm delivery of low birth-weight babies.⁴⁹ This link might result from cascading effects of inflammation in the mouth compromising the womb environment.^{49,50} Whatever the connection, controlling periodontal disease has become a potential strategy for reducing preterm labor.⁵⁰

Topical Compounds That Deliver Optimal Oral Health

An optimal diet and supplement regimen may help promote general and oral health from the inside. Scientists have now identified a number of compounds that protect oral health when applied topically (inside the mouth). These substances can deliver complementary defenses when included as ingredients in toothpaste.

Green Tea

A **2016** study found that green tea extract protects against dental erosion, reducing wear and roughness.⁵¹

Other studies have demonstrated that **green tea** catechins exert direct antibacterial activity against *Streptococcus mutans*, one of the key microorganisms behind tooth decay. Green tea also inhibits a bacterial enzyme involved in the process that allows bacteria to stick to teeth. Further, it inhibits production of amylase, and since bacteria use this enzyme to break down starches into sugars, this action may help protect teeth.^{52,53}

Evidence suggests that green tea reduces the invasiveness of oral cancer and decreases the production of a protein associated with oral cancer proliferation.^{54,55} Researchers also found that green tea arrests the growth of—and triggers apoptosis (self-destruction) of—oral carcinoma cells in the laboratory.⁵⁶

Scientists then conducted a study to validate the usefulness of green tea in the improvement of periodontal disease. They applied green tea catechins to the mouths of patients with periodontal disease, once a week for 8 weeks, using special strips with a slow-release delivery system. It was shown that the green tea catechins killed a significant proportion of the bacteria causing periodontitis in these patients.⁵⁷

Coenzyme Q10

Well known for its cardioprotective actions, CoQ10 has also been shown to improve symptoms of periodontitis when applied topically.^{8,58,59}

Scientists conducted a placebo-controlled clinical trial in men with established periodontitis, and after six weeks of topical application of CoQ10, they found “significant improvements” in periodontal status, which were not seen in control subjects.⁸

Results from an early study on the effectiveness of CoQ10 against periodontitis were so impressive that the authors wrote, “**Healing was so excellent 5-7 days post-biopsy that the biopsy sites were difficult to locate. The healing was viewed as extraordinarily effective.**”⁶⁰

Aloe Vera

Long used to promote wound healing and soothe burns, topically applied aloe vera (*Aloe barbadensis*) has now been shown to promote wound healing and may provide soothing and healing properties to the gum tissues.^{9,61,62}

Further, a **2015** study found that **aloe vera** inhibits tooth decay and periodontal pathogens.⁶³

In a remarkable finding, a study published in the October 1, **2016**, issue of the *Journal of Clinical and Experimental Dentistry* concluded that aloe vera “...**can be used as an alternative product for curing and preventing gingivitis.**”⁶⁴

Xylitol

This natural sweetener inhibits oral bacteria when chewed in a gum or topically applied.

In a **2015** mouse study, a topical xylitol solution was found to exert “*considerable anti-irritant and anti-inflammatory properties*” against induced tissue irritation.⁶⁵ A clinical study in the same year found that, in individuals with poor-to-moderate oral hygiene, xylitol-containing chewing gums more effectively reduced salivary levels of *Streptococcus mutans*—the bacteria responsible for most tooth decay—than conventional gums.⁶⁶

Another clinical trial showed that, in contrast to sorbitol- and maltitol-containing chewing gums, only xylitol-sweetened gum eliminated saliva microbes, particularly those implicated in tooth decay.⁶⁷ Xylitol could thus be an essential ingredient in a targeted strategy to avert dental disease.



How Periodontal Disease Develops

The starches and sugars in the food you eat interact with the bacteria in your mouth to form a bacteria-harboring, sticky film of plaque on your teeth and gums. If not properly removed by brushing with a good toothpaste, plaque hardens into tartar, which clings so tightly to the teeth and under the gum line that it can only be removed through professional cleaning.

There are two different types of periodontal disease—gingivitis and periodontitis. Gingivitis is an inflammation of the soft tissue surrounding the tooth. This is a direct immune response to microbial plaque attached to the surface of the tooth. The clinical manifestations of gingivitis are redness and swelling of the gums and bleeding on soft-touching or on probing. In the early stages, gingivitis does not significantly affect deeper structures, such as the periodontal ligaments and alveolar bone. Left untreated, however, gingivitis can lead to periodontitis.

Periodontitis occurs when pathogenic, gram-negative bacteria destroy the dental supportive structures of the teeth, leading to progressive destruction of periodontal ligaments and alveolar bone. The result is tooth loss.

Increasingly, scientists have found that periodontal diseases may trigger a range of illnesses throughout the body, ranging from cancer to heart disease.^{1,5,6,17-25}

More recently, scientists reviewed previous xylitol studies conducted on preteen children. They concluded, in the August 3, 2016, issue of the Cochrane Database of Systematic Reviews, that “*There is moderate quality evidence showing that the prophylactic administration of xylitol among healthy children...can reduce the occurrence of AOM (acute otitis media).*” This is the most common bacterial infection among young American children.⁶⁸

Lactoferrin

Lactoferrin—an immune-boosting protein involved in the body’s responses to infection and injury⁶⁹—has been shown to halt growth of periodontitis-causing bacteria.¹² In a **2015** study, researchers found that diabetic lactoferrin-deficient mice have a greater risk of developing periodontal infection.⁷⁰

Lactoferrin appears to help fight infection and tissue damage associated with periodontal disease.



Hydrogen Peroxide

This well-known antiseptic can be used to fight plaque formation and to reduce gingivitis.¹³ Its bubbling action exposes oral bacteria that are difficult to reach with ordinary brushing and flossing—helping to lower bacteria levels and provide cleaner teeth and gums. When applied in diluted form by aerosol spray to the gums of patients with chronic periodontitis, hydrogen peroxide improved clinical periodontal status and plasma levels of inflammatory markers and “may be a promising method in periodontology.”⁷¹

Folic acid

Essential for the integrity of the gingival tissues, higher dietary intake of folic acid is associated with less gingival bleeding on probing.⁷² Similar results occurred when added to mouthwash. In patients with gum disease, folic acid-containing mouthwash significantly reduced gingival redness and gum bleeding.¹⁴

Summary

A frontline defense against systemic **inflammation** is excellent **oral health**.

Among the numerous diseases linked to poor oral health are type II diabetes, cancer, rheumatoid arthritis, atherosclerosis, heart disease, and obesity.

Research indicates that adding specific ingredients to **toothpaste** powerfully supports dental health and safeguards against periodontal disease. The expected systemic benefit is reduced risks of lethal diseases that can originate in the mouth. ●

Dietary Vitamin Supplements That Promote Oral Health Internally

In addition to brushing with fortified toothpaste, taking certain vitamin supplements may help promote gum health.

Vitamin C is crucial for the maintenance of healthy connective tissue, such as the gums. In fact, one of the clinical signs of scurvy—the disease associated with vitamin C deficiency—is bleeding gums.⁷³ But vitamin C should not be applied directly to the teeth topically as ascorbic acid may erode enamel.

Taking the B vitamin folic acid promotes gingival health by reducing redness and bleeding in these delicate tissues.¹⁴

Vitamin D is also important for oral health.⁷⁴ Since many people do not generate adequate levels of the “sunshine hormone,” supplementation with vitamin D may be necessary to help ensure gum health.

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

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* *Alzheimers Dis.* 2015;49(4):971-90.

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BY WILLIAM FALOON



TOBACCO

More Lethal Than
What Government Claims



How to *Reduce* Tobacco-Related Healthcare Costs

I've always been skeptical of government's claim that **480,000** Americans die each year as a result of **cigarette smoking**.¹

My reason for questioning this government statistic is that tobacco use is associated with more illnesses than what are **officially** counted.²

Take **kidney failure** for instance. Smoking is associated with double the risk of death in **kidney failure** compared with nonsmokers.² Yet kidney failure is not counted in the official number of tobacco-related deaths.^{3,4}

My suspicions have been further aroused by a study published in the ***New England Journal of Medicine***. This report analyzed almost **one million** adults. These findings suggest **cigarette smoking** is associated with about **556,000** American **deaths** each year—**higher** than government estimates.^{1,2}

Deaths associated with cigarettes are not limited to those who smoke. The federal government admits that over **41,000** additional Americans die each year from **secondhand smoke**.³ I believe this number also underestimates the real number of second-hand smoke victims.

Overlooked are insidious diseases that kill former smokers long after they quit. This happens when *genetic* changes inflicted by tobacco use at younger ages manifest decades later as a lethal disease.

The United States faces a healthcare cost crisis. A significant percentage of medical outlays are caused by cigarette smoking. Tobacco taxes don't cover the medical and lost productivity costs of current and former smokers, or victims of secondhand smoke.

Anti-tobacco campaigns are **failing** to sufficiently curb this deadly menace. This article describes the staggering number of excess tobacco-related deaths that are not **officially** counted.

Cigarette smoking remains the most dominant cause of preventable death and disability.

The percentage of Americans who smoke dropped by approximately half over a four decade period, from the mid-1950s to the mid-1990s.⁵

Interventions such as warning mandates, tax hikes, and smoke-free environments have helped reduce the carnage.

The problem is that today nearly **one out of every six** American adults still smoke, nearly **one out of five** Americans who smoke have a disability, and at least **16 million** Americans live with a smoking-related illness. Tobacco products are probably **killing closer to 556,000** Americans each year.^{1,2}

Based on an article published in the *New England Journal of Medicine* titled, “**Smoking and Mortality—Beyond Established Causes**” and accompanying analysis, the authors believe that at least **60,000 additional deaths per year** may be associated with smoking that are not reported in government estimates.²

Cigarette smokers also face sharply higher risks of nonlethal illnesses that further burden today’s inadequately staffed sick-care system.

A solution must be found to spare this nation’s finances, as well as the lives of its citizenry.

New Study Exposes More Tobacco-Induced Carnage

Death rates among current smokers are **two to three times** higher compared to people who never smoked. Most of this higher mortality is explained by **21** common diseases officially recognized as caused by cigarette smoking (like lung cancer).³

If cigarettes cause other diseases, however, then government claims of smoking-attributable mortality are being significantly underestimated.

A study of almost one million men and women over **age 55** was begun in year **2000** with data collection extending to **2011**. Confounding factors such as age and alcohol intake were factored into the mortality data.

The final results from this study were published by the *New England Journal of Medicine* in **2015**. The data revealed that cigarette smoking kills far more Americans than official statistics indicate!²

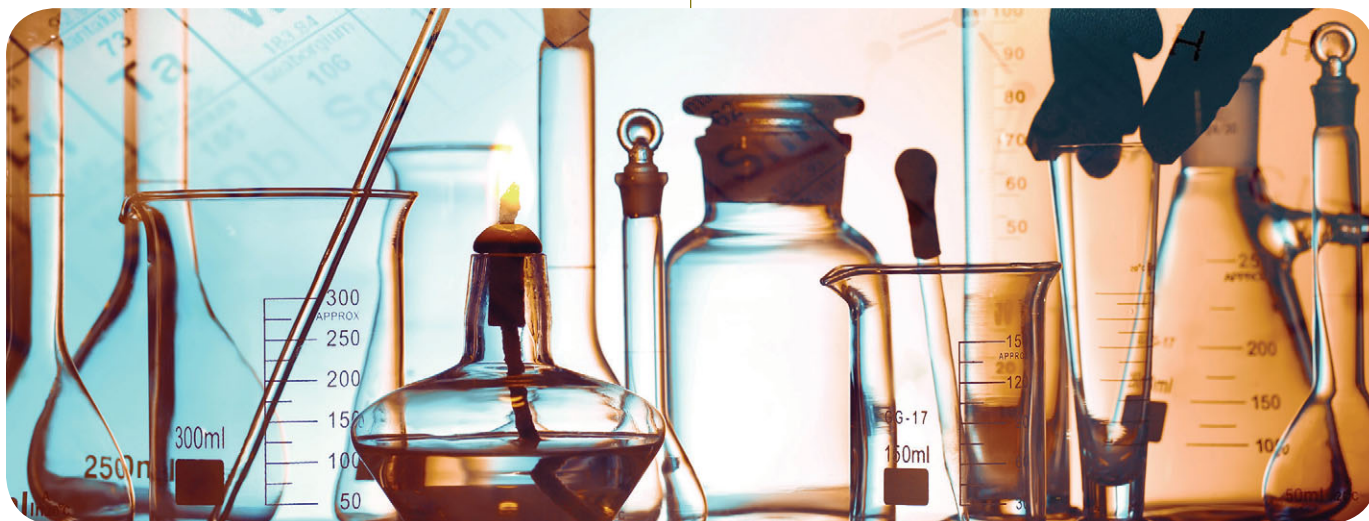
How Government Accounts for Tobacco-Induced Mortality

The 2014 Surgeon General’s report estimated that cigarette smoking causes more than **480,000** deaths in the US every year, including deaths from secondhand smoke.¹

This widely cited statistic, however, is an underestimate, as it only considers deaths from **21** diseases that have been formally recognized as caused by cigarette smoking. When looking at other diseases associated with cigarettes, an updated analysis suggests the number of excess deaths jumps by **60,000** to **120,000** each year.²

This analysis published in the *New England Journal of Medicine* includes a total of **52** cause-of-death categories.² The chart on the next page lists some of the illnesses not officially recognized as being caused by cigarette smoking. It then reveals the staggering increased risk of dying from these diseases in current smokers.

Many of the illnesses listed on the next page are caused by **immune suppression**,^{6,7} **atherosclerosis**,^{8,9} **platelet aggregation**,^{10,11} **inflammation**,^{12,13} and **gene alterations**,^{14,15} which are all related to cigarette smoking.





Relative Risk of Death from Specific Unofficial Causes Related to Smoking Status

This chart shows increases in **deaths** from specific causes in current **cigarette smokers** compared to a nonsmoking control group. These diseases are not factored in when the government estimates tobacco-induced mortality data.²

Diseases Not Officially Attributed to Smoking	Increased Relative Risk for Smokers
Infections (all)	150% (females) 120% (males)
Hypertensive Heart Disease	90% (females) 190% (males)
Intestinal Ischemia	510% (females) 460% (males)
Kidney Failure	90% (females) 110% (males)
Prostate Cancer	40% (males)
Breast Cancer	30% (females)
Liver Cirrhosis	160% (females) 260% (males)
Respiratory (not included on Surgeon General's list)	90% (females) 100% (males)
Rare cancers	10% (females) 60% (males)
Digestive Diseases (not included on Surgeon General's list)	110% (females) 160% (males)

These increased estimates of associated deaths in smokers were not fully documented until these new findings were disclosed by the ***New England Journal of Medicine***.

Later in this article we show a chart from this same *New England Journal of Medicine* study of the deaths from diseases that are officially recognized as being caused by cigarette smoking.

It's Not Just the Lethal Diseases

Smokers are much more likely to contract viral infections (flu/cold) that leave them unproductive for extended time periods. One reason for this is that tobacco smoke adversely affects the **immune system**.

It also increases risk of acute myeloid **leukemia** which is sometimes curable after spending months in a hospital isolation unit undergoing aggressive chemotherapy followed by bone marrow transplants.^{16,17}

The *New England Journal of Medicine* article reported on a host of wretched disorders that are far more prevalent in smokers that include:²

- Peptic ulcers
- Bowel obstructions
- Gallstones
- Diverticulitis
- Acute pancreatitis
- Gastric hemorrhage

Although these are not common direct causes of death, they account for millions of hospitalizations each year that the current healthcare system can no longer afford.

Research suggests that those who suffer **pancreatitis** are at higher risk of pancreatic cancer.¹⁸⁻²⁰ Government statistics include **pancreatic cancer** as a smoking-attributable disease.^{2,3}

Breast and Prostate Cancers

The **Surgeon General** has not yet concluded that cigarettes increase **breast cancer** risk. The *New England Journal of Medicine* report estimated the number of breast cancer deaths increased significantly based on smoking intensity and declined after cessation of smoking.²

The *New England Journal of Medicine* estimated the relative risk of death from prostate cancer to be about **40% higher** among current smokers than among those who had never smoked.²

Interestingly, other studies show associations between smoking and **progression** of prostate cancer as well as **prostate cancer-specific** mortality among men with prostate cancer. These findings show the adverse impact of smoking on later stages of carcinogenesis, making it imperative that those with any malignancy stop smoking.^{21,22}

Talking to Teenagers

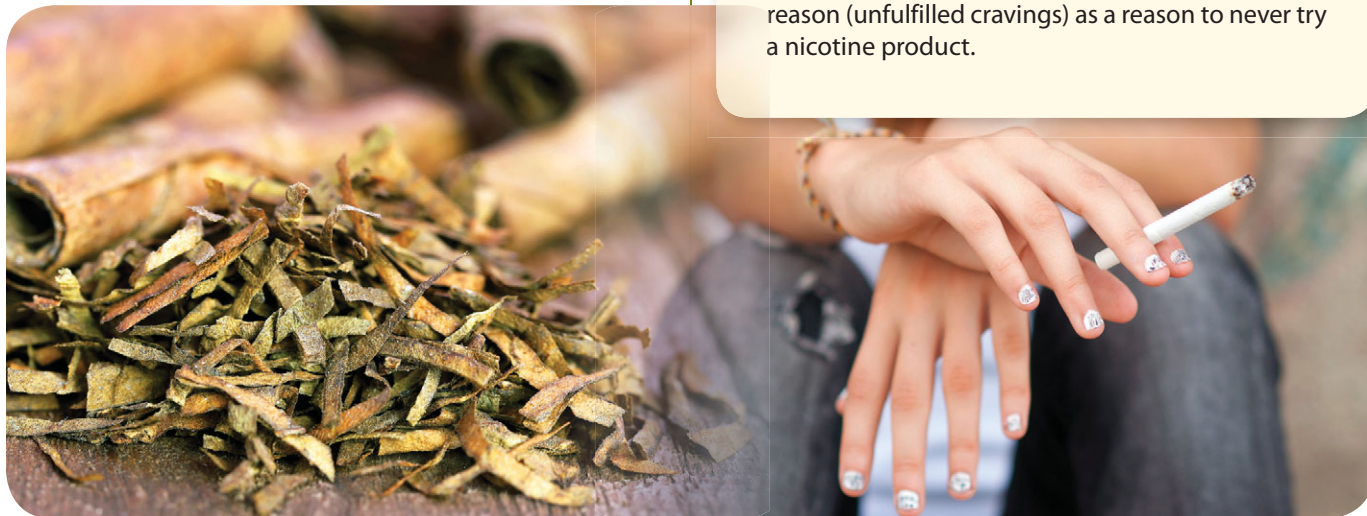
When it comes to fulfilling my duty to educate teenagers to not start smoking, I tell them to not worry about all the terrible diseases they will invariably get since that is so far into the future. I also tell them to not be concerned that the many economic costs associated with smoking as they could wind up squandering their money in other ways.

The one adverse guarantee I relate to teenagers is that once addicted, a smoker craves a new cigarette as often as every **30 minutes**.²³ In the old days, when smoking was permitted everywhere, this was not a problem.

Now that smoking is **prohibited** virtually everywhere, nicotine addicts spend most of their day suffering the miseries of unfulfilled cravings. A long plane flight represents a withdrawal nightmare, as does any form of indoor confinement for those who need to light up every 30 minutes or so.

The fact that a nicotine addict will be deprived most of the time they crave it has persuaded a number of younger individuals I know to never consider starting smoking.

I wish more schools emphasized this neglected reason (unfulfilled cravings) as a reason to never try a nicotine product.





What You Need to Know

The High Cost of Tobacco Addiction

- While the government puts the number of American deaths from cigarette smoking at **480,000**, a recent *New England Journal of Medicine* report suggests that the real number is closer to **556,000**.
- At least **41,000** Americans die yearly from secondhand smoke.
- Cigarette smoking is the most prominent cause of preventable death and disability.
- At least **16 million** Americans struggle with a smoking-related illness, placing a further burden on Medicare and our inadequately staffed sick-care system.
- Aggressive efforts to reduce tobacco consumption would improve the health of countless people and reduce healthcare outlays almost immediately.

Adding Up the Death Toll

Taking into account only **21** diseases known to be caused by smoking, the **Surgeon General's** most recent report of smoking-attributable mortality appears to be a significant underestimate.

This is not meant to be a criticism of the Surgeon General. The table on the next page provides more than enough data on smoking-induced mortality to dissuade mature individuals from initiating this deadly habit.

The problem is that our society is failing to recognize the nearly **556,000** total annual deaths inflicted on Americans by all forms of tobacco. As a result, teenagers see stacks of attractively labeled tobacco packs sitting behind virtually every store checkout counter.

For a variety of illogical/illegal reasons, a startling number of teenagers gain access to these cigarettes on retail display while older smokers seeking to quit have 24 hour/day convenient access to their addictive drug.

How to Reduce Tobacco-Related Healthcare Costs

One reason smoking is so easily initiated, and why so many people are unable to quit, is that cigarettes are conveniently sold at retail outlets everywhere. It is a serious crime to sell a narcotic drug. Yet the most dangerous and highly addictive drug (nicotine laced cigarettes) is prominently displayed in pharmacies, grocery stores, gasoline stations, and convenience stores.

To legally buy cigarettes in most states, a person needs to be age 18. With such widespread retail distribution, however, underage smoking and its inherent addiction remains rampant.

Smokers trying to quit suffer withdrawal agonies for weeks, but can easily succumb to temptation at a retail outlet where a pack of cigarettes can be purchased in seconds. Some retail outlets are open 24 hours a day, so the temptation for those trying to quit does not abate even when most other businesses are closed.

We think a substantial reduction in tobacco consumption would occur if more stores like **CVS Pharmacy** discontinued retail sales of cigarettes (and other tobacco products).

One reason I established the **Life Extension Pharmacy®** in **2008** is that I was infuriated that every major pharmacy chain had a wall of tobacco products behind the checkout counter of their stores. For a variety of bureaucratic reasons, our pharmacy did not generate enough sales to cover its overhead and we sold it to a quality compounding group (Posthaste Pharmacy) that does not sell cigarettes.

Relative Risk of Death from Official Causes Related to Smoking Status

This chart shows increases in **deaths** from specific causes in current **cigarette smokers** compared to a nonsmoking control group. These are the diseases the government counts when estimating tobacco-induced mortality.²

Diseases Attributed to Smoking	Increased Relative Risk in Smokers
Esophageal cancer	410% (females) 290% (males)
Ischemic heart disease	200% (females) 160% (males)
Diabetes	50% (females) 60% (males)
Stroke (total)	110% (females) 90% (males)
Pancreatic cancer	90% (females) 60% (males)
Urinary bladder cancer	290% (females) 290% (males)
Atherosclerosis	110% (females) 400% (males)
Aortic aneurysm	910% (females) 650% (males)
Pneumonia, influenza, TB	90% (females) 100% (males)
COPD2	400% (females) 2,680% (males)
Colorectal cancer	60% (females) 40% (males)
Lip/oral cancer	460% (females) 470% (males)
Liver cancer	80% (males) 130% (females)
Lung cancer	2,190% (females) 2,430% (males)

If a terrorist group inflicted this kind of annual massacre on American citizens, our government would likely respond in a “nuclear” manner.

Tobacco lobbyists continue to dominate government policies that could mitigate this critical public health issue.

We Can't Afford Tobacco-Induced Sick-Care Costs

The economic impact of widespread nicotine addiction is staggering. No matter how many taxes the government collects on cigarette sales, or how many people are employed in the tobacco industry, the healthcare costs borne by government and the private sector in treating sick smokers is always greater.

Medicare and other insurance programs face trillions of unfunded future liabilities that no one knows where the money will come from to pay. Cigarette smoking adds a significant burden to society's future healthcare costs.

For this nation to remain solvent, creative ways of slashing future healthcare costs must be implemented.

Not a Trivial Matter

More aggressive means to reduce tobacco consumption will result in substantial reductions in healthcare outlays that would begin almost immediately.

By way of example, when indoor smoking bans were implemented in Ireland, sudden heart attacks requiring emergency room care dropped.²⁴

Experts showed how walking through a room filled with tobacco smoke can induce acute angina or heart attack by constricting coronary arteries, causing blood to abnormally clot inside blood vessels and/or inducing rupture of unstable plaque inside coronary arteries.^{25,26}

These startling data alone make it clear how injurious tobacco smoke is, and why huge healthcare savings will occur if smoking cessation programs were to succeed, something that is NOT happening enough today.

Relative to the nearly **556,000** annual deaths inflicted by tobacco in the United States, efforts to curb tobacco accessibility are woefully lacking.

Our mission at *Life Extension*® is to defeat aging and its degenerative processes. We are not in the anti-smoking advocacy business.

I only hope policymakers can find the fortitude to reject tobacco company payoffs and lobbying activities and intensify efforts to reduce the staggering carnage that tobacco addiction inflicts. It remains a major unresolved health issue.

Summary

Government figures underestimate the number of Americans who succumb to smoking-related death by **60,000 to 120,000** each year, according to an extensive analysis in the *New England Journal of Medicine*.

This study found that smokers, compared to non-smokers, have a significantly **higher** risk of dying from a number of diseases that are not formally recognized as being related to tobacco use, in addition to the 21 diseases that are officially recognized as related.

Also worth noting are the numerous nonlethal but nonetheless serious diseases that are more prevalent in smokers, such as bowel obstructions, peptic ulcers, gastric hemorrhage, and acute pancreatitis.

While various strategies such as tax hikes, warning mandates, and smoke-free zones have helped reduce deaths, almost **one** out of **six** Americans is a smoker, and **one** out of **five** smokers has a disability.

It's absurd that while there are strict laws against the illicit sale of narcotics, nicotine-laced cigarettes—the most dangerous and highly addictive of drugs—are prominently displayed in stores and easily available.

We applaud businesses such as CVS Pharmacy, which has removed cigarettes from its stores. Other avenues to reduce tobacco consumption are urgently needed. The savings in both human lives and healthcare costs would be enormous. ●



**If you have any questions on the scientific content
of this article, please call a Life Extension®
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Nutrients Boost Stem Cell Function

BY CAROLINE MEYERS

Recent scientific findings indicate that aging is closely associated with a loss of the number and function of *adult stem cells* throughout the body.¹⁻⁵

Researchers have concluded that protecting those essential **stem cells** could play an important role in slowing and partially reversing aging.

Three studies published last year demonstrate that several nutraceutical compounds are capable of boosting **stem cell function**.

These studies revealed that extracts from **berries** and **green tea**, the dipeptide **carnosine**, and **vitamin D**—have the ability to favorably alter **gene expression**, and are capable of exerting powerful regulatory effects on stem cells and their environment.

These findings should help to crystalize the importance of utilizing natural molecules as a means of slowing aging.

Nutraceuticals Rescue Aging Stem Cells

Aging is associated with the loss of **adult stem cell function** (see sidebar). This has prompted interest in ways of improving stem cell functionality in maturing individuals.⁶⁻⁸

It has been shown that connecting the circulation of an older animal with that of a younger one reduces the function of the younger animal's muscle and brain stem cells and appears to accelerate aging.^{4,7} Components in the blood of the older animal interact with stem cells in the younger one, impairing their function.

Scientists at the James A. Haly Veterans Affairs Hospital in Tampa tried to **reverse** that effect by treating older rats with a specific nutrient formulation, then observing the effects of the rats' nutrient-rich blood on stem cells from other animals, both young and old.⁷

They fed young and aged rats either a standard diet or a nutrient-rich diet composed of a mixture of blueberry, green tea, vitamin D, and carnosine—all nutrients with known cell-protective effects—for 28 days. At the end of that period, the researchers collected blood serum from the older, supplemented rats and applied it to cultures of adult rat stem cells. One group of stem cells came from the memory-intensive brain area called the hippocampus, and the other from bone marrow, where blood cells and platelets are formed.

Serum from **aged** rats that were on the control diet had the expected effect on the cultured stem cells: their division rates slowed dramatically, producing fewer **new stem cells**. But serum from the **supplemented** aged rats

Stem Cells and Aging

Stem cells, unlike any other cells in the body, can self-renew and differentiate into many different kinds of cells.⁵

Early embryonic stem cells can differentiate into virtually any kind of cell, in any kind of tissue. Adults retain stem cells in all of their organs and tissues. Adult stem cells can still regenerate and differentiate, but usually only into mature cells in their particular tissue type.^{4,5}

When tissue is damaged, tissue-specific stem cells leap into action, quickly forming into functional replacements for the damaged cells.^{4,5} In short, adult stem cells account for the healthy adult body's **ability to self-heal**, and to retain its youthful vigor.

Recent studies now show that stem cell function declines with advancing age—falling victim to such threats as oxidative stress, inflammation, and DNA damage—and results in impaired ability of tissues and organs to repair themselves.¹ In this way, aging itself is closely related to the accumulation of dysfunctional stem cells.¹⁻⁵

Fortunately, one of the very causes of stem cell dysfunction can now be leveraged to *prevent* or *reverse* such dysfunction. Regulation through **favorable** alterations in gene expression is considered a major means of establishing and maintaining normal stem cell activities.^{2,4} We can now provide to living stem cells substances that exert **favorable changes**.

A growing number of studies demonstrate that application of a number of molecules that support metabolic function, protect against oxidative stress, prevent inflammation, and protect DNA repair can enhance the numbers – and function – of aging stem cells.^{9,11,12}

The studies discussed in this article demonstrate that many commonly-used nutraceuticals may in fact produce their age-decelerating, organ-protecting, and life-extending effects at least in part by protecting adult stem cells.

did **not** cause those changes, and in fact produced results not different from those of serum obtained from *young* rats. This study demonstrated that targeted nutrient supplementation alone could *rescue* aging stem cells involved in both brain and blood system functions.

Hope for Multiple Sclerosis

The second important study recently published demonstrated the impact of **vitamin D** on brain stem cells in a mouse model of **multiple sclerosis** (MS). MS is an autoimmune disease that damages nerve cells by impairing their abil-

ity to conduct signals. While treatments can slow the disease, it is considered incurable.⁸

Researchers used a mouse model of MS to determine whether vitamin D treatment could improve nerve function by protecting neuronal stem cells and by promoting their functions. Amazingly, they found that vitamin D supplementation **reversed** the nerve cell damage created by MS.⁸ Furthermore, they found that the supplement promoted the proliferation of neuronal stem cells, which contributed directly to improved brain function, and to their apparent recovery from MS. This study offered additional

insights into how vitamin D could directly contribute to alleviating a condition in which adult stem cell function is compromised.

Beneficial Epigenetic Changes

The third important study also focused on stem cells in the brain and the impact of specific nutrients on brain function. Here, the researchers based their work on the observation that the decline in aging brain stem cells appears to be closely associated with increased levels of inflammatory signaling molecules, or *cytokines*.⁶

They supplemented rats with carnosine, blueberry, green tea, and vitamin D, the same group of nutrients previously proven to rescue aging stem cells. They found that supplemented animals had a large number of changes in the expression of genes concerned with a range of cellular functions.⁶ More specifically, they helped reduce proinflammatory cytokines, while increasing anti-inflammatory cytokines. The reduction in inflammation would explain the beneficial

effects of the nutrients on stem cell function demonstrated in previous experiments.⁹

But the researchers dug deeper and made a remarkable discovery—the nutrient combination increased the production of genes that prompt *progenitor cells* (stem-like cells living in brain tissue) into becoming functioning adult neurons. In other words, it helped create healthy new brain cells.

This study powerfully demonstrates how targeted nutrients can favorably alter the environment faced by tissue stem cells in the brain, reducing the risk that they will develop into impaired, aged stem cells, and promoting their development instead into functioning adult brain cells. This is especially important for those at risk for neurodegenerative diseases like Alzheimer's and Parkinson's. These diseases are known to be associated with declining rates of **brain cell renewal**, which we now recognize requires healthy stem cells.^{6,10}

Together, these three recent studies strongly indicate that specific nutrients can produce tremendous effects on adult tissue stem

cells, helping protect them against the destructive impact of environmental factors, and preserving their ability to naturally heal tissues and restore their youthful function.

Let's now turn to a brief review of the stem cell-protecting properties of some other familiar nutrients.

Nutrients Promote Stem Cell Vigor

One large group of researchers has published extensively on their studies with a nutrient combination containing **polyphenols** from blueberry and green tea, as well as **carnosine** and **vitamin D**. Their work has shown that these nutrients promote the proliferation of healthy human adult stem cells, protect those cells from the destructive effects of oxidative stress, and produce improved cognitive and memory function in animals as a result of enhanced brain stem cell proliferation.^{9,11,12}

Numerous other studies show that other common, readily-available nutritional supplements can also boost stem cell function in a meaningful way, to further slow stem cell-related aging. Let's take a look at the highlights:

- In one study, a supplement containing **green tea**, **astragalus**, **goji berry extracts**, **ellagic acid**, and **vitamin D** fermented with a probiotic *Lactobacillus* species, was given to human volunteers twice daily for 2 weeks. Within a day, and continuing for the rest of the study, researchers detected significant increases in circulating bone marrow stem cells. They believe this was caused by stimulation of the body's natural repair mechanisms (stem cells) by the nutraceutical combination.¹³



- **Blueberry extracts** are rich in polyphenols, which are highly protective molecules associated with a host of health benefits. A study in rats showed that supplementing animals in early life with a blueberry-enriched diet prevented bone loss (osteoporosis) at menopause.¹⁴ Closer examination of the protective effect revealed that the blueberry supplement stimulated bone-forming stem cells to mature into active bone-mineralizing cells. This action reduced the high post-menopausal rate of bone turnover that, in humans, results in easy fractures.^{14,15}
- **Spirulina** is a blue-green algae that is known for its anti-inflammatory properties. A recent study showed that spirulina could prevent inflammation-induced decreases in brain stem cell proliferation that accumulates with aging.¹⁶ This resulted in improved functioning of stem cell mitochondria, which improved energy utilization and reduced oxidative stress.

Summary

Recent research has revealed the crucial role of adult stem cells in promoting healing and regeneration following damage. Over time, their loss of function deprives our tissues of their youthful ability to recover from damage and regenerate themselves. This contributes to the loss of function that we see as aging.

The good news is that **rejuvenating** those **adult stem cells** can lead to a partial reversal of aging

in our tissues. Even better, three landmark studies have shown us that rejuvenation of adult tissue stem cells is within our reach.

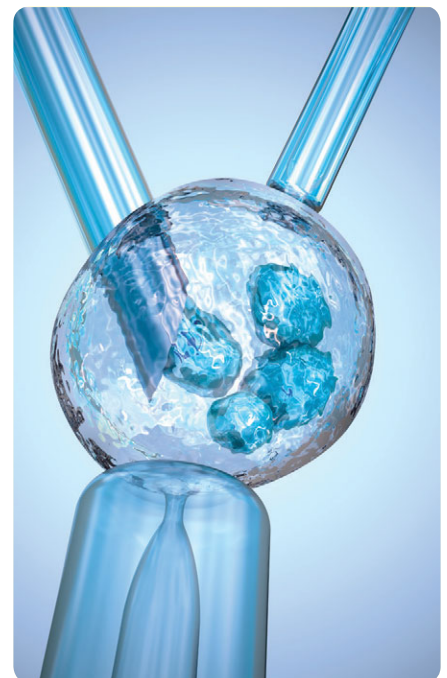
Supplementation with a variety of nutrients has been shown to restore the healing and regenerative capacities of aging adult stem cells, and results in the restoration of youthful function to the tissues where those stem cells reside.

The pace of scientific discovery in the nutrients realm continues to accelerate, opening the real possibility that many other nutraceuticals will be found to exert their health-promoting effects at least in part by stimulating stem cell recovery. ●

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

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- **Cordyceps**, promotes endurance⁵ and enhanced immune function,⁶ and
- **Holy basil**, supports balanced levels of neurotransmitters⁷ and blood sugar⁸ for those already within the normal range, and enhances mood.⁹

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Do not use if pregnant, lactating, or under age 18.

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BY GARRY MESSICK

Teff

The Gluten Free Super Grain

Teff, a cereal grain grown mostly in Eritrea and Ethiopia, has been used for many centuries in African and Arabian countries, but has only begun gaining popularity in the US in recent years. As appreciation for Teff's many nutritional benefits has grown, it has become widely available in health food stores and through various online sources. Teff, which thrives even in harsh climates, has a mild, nutty flavor.

Health benefits of teff include:

Gluten Sensitivity

Teff is gluten free, making it a good alternative grain for people who have gluten sensitivity or celiac disease.¹⁻³

Amino Acids

Teff is an excellent source of lysine, among other essential amino acids. (Most other grains are lacking in lysine, making Teff unusual in that respect.) Lysine is an important building block of protein, and it may help maintain nitrogen balance in the body and help prevent the detrimental process of glycation.^{1,4}

Essential Minerals

Essential minerals such as potassium and calcium are much more abundant in teff compared with other grains. Teff also is rich in fiber, and its iron content is easily absorbed by the body.^{1,5}

Blood Sugar Control

For those who are diabetic or prediabetic, teff added to your diet could help blood glucose levels because it's roughly **20% to 40%** made up of resistant starches and has a low glycemic index.^{1,6}

Vitamin C

Grains in general aren't known for their vitamin content, and tend to be particularly lacking in vitamin C. The opposite is true for teff, which contains significant amounts of vitamin C,⁷ which is crucial for the immune system amongst other functions.

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BY GARRY MESSICK

Dr. Edward Rosick

author of *Optimal Prevention:
Common-Sense Ways to Avoid the Five Most
Common Killer Diseases Today*

Dr. Edward Rosick believes that illness should be stopped through prevention before it has a chance to infiltrate our bodies.

As a triple board-certified (in preventive medicine, holistic medicine and public health), physician and writer living in Michigan, Dr. Rosick says he is committed to helping as many people as possible to reach a state of optimum health and well-being, which he describes as “truly the basis for a joyful life.”

Dr. Rosick’s medical philosophy is simple and common-sense, yet grounded in cutting edge science. As he explains it, “Through a well-balanced diet, the appropriate supplements and hormones, a regular exercise regime and some type of stress reduction (be it meditation, prayer, yoga, etc.), the vast majority of chronic diseases, which are the top killers in the western world today—Alzheimer’s, cancer, heart disease, strokes, and type II diabetes—can be prevented, allowing people to live long, healthy, productive and happy lives.”

In this interview with **Life Extension**®, Dr. Rosick kindly consented to an in-depth discussion of his fascinating new book, *Optimal Prevention: Common-Sense Ways to Avoid the Five Most Common Killer Diseases Today*.

Author Interview

LE: What kind of a role can supplements play in preventive medicine? You occasionally see articles critical of them in the mainstream press.

ER: Yesterday, as I was checking out at my local grocery store, I picked up a copy of *Reader's Digest* and read an article warning people about the “dangers” of supplements. I don't know where *Reader's Digest* gets the authors to write these articles, but I do know from writing over three hundred articles on supplements and integrative medicine that not only is the wise use of supplements not harmful, it can help protect you from the diseases that affect and kill millions of people every year. Recently, the Lewin Group, a leading analytical firm, released information showing that the use of some simple, safe supplements could save over \$24 billion in healthcare costs.

LE: What were some of the health benefits they found, and what would be the overall savings in healthcare costs for each?

ER: For example, if the **25%** of American women of childbearing age who don't take **folic acid** would do so, the number of neural tube defects in their children could be substantially reduced, saving \$1.4 billion over the span of five years.

Another example—if men and women on Medicare began regularly taking **calcium** and **vitamin D** supplements, almost 800,000 hospitalizations for hip fractures could be prevented, saving more than \$16 billion, again, over a five-year span.

One more—if more middle-aged and elderly people began taking **omega-3** fatty acid supplements, about 375,000 hospitalizations and visits to doctors for heart disease could be prevented, saving over \$3 billion a year.

LE: Let's talk about some other specific supplements and their benefits. **Magnesium**, for instance.

ER: This common mineral has been shown in a number of studies to play an important role in preventing or treating a number of cardiovascular illnesses, including atherosclerosis, congestive heart disease, ischemic heart disease, sudden cardiac death, and cardiac arrhythmias. With an impressive résumé like that, it's no wonder that magnesium is a front-line therapy for heart-disease prevention and a supplement that I recommend to almost all my patients.

LE: How about some relatively overlooked nutrients such as **zeaxanthin**?

ER: Zeaxanthin may be important in maintaining a healthy brain and avoiding Alzheimer's. Researchers in France conducted a nine-year study on over 1,300 elderly men and women. The results showed that those men and women who had a decline in their cognitive

abilities, which is often an early sign of Alzheimer's, also had the lowest levels of zeaxanthin in their blood.

LE: There are also a lot of studies showing the benefits of **carnosine**, aren't there?

ER: Carnosine is an extremely safe compound that's composed of the amino acids beta-alanine and L-histidine and should be on your daily supplement list. Carnosine may help prevent Alzheimer's by inhibiting advanced glycation end-product formation and fighting free radicals. It has also been shown (at least in lab studies) to protect against the ravages of beta-amyloid formation. While more definitive human studies need to be done to confirm its potential, I see no reason why carnosine shouldn't be used in the fight to prevent Alzheimer's.

LE: Diabetes is a growing problem in the US. Is it true that testosterone can help keep it at bay?





ER: The evidence shows that optimal testosterone levels protect men against Alzheimer's, heart disease, and strokes. But it also helps protect men against the ravages of diabetes, yes.

A review article in *The Diabetes Educator* gave a succinct overview on the use of testosterone replacement therapy to prevent diabetes in aging men. Studies have consistently shown that testosterone levels are significantly lower in men with type II diabetes. Just as important, other studies have shown that men with higher testosterone levels had a **42%** lower risk of developing type II diabetes! Now I don't know about you, but if a drug came out that could not only protect men against Alzheimer's, heart disease, and strokes—and could decrease your chance of developing diabetes by **42%**—men and their significant others would be breaking down their doctors' doors to get a prescription for it. Fortunately, that substance—testosterone—is already here, so make sure your doctor is willing—and knowledgeable—about testosterone replacement therapy, then start preventing diabetes now!

LE: Let's talk about pesticides. How hazardous are they?

ER: Walk into the gardening section of any large store and you'll see row after row of pesticides. While you might think they must be safe or the government wouldn't allow them to be sold, think again. A report published in the journal *Occupational and Environmental Medicine* shows that pesticide exposure may increase your risk of brain cancer. Yet despite this information, pesticides are still sold in abundance at most local gardening stores.

In a study of almost 700 adults with brain tumors in France, researchers found that in agricultural workers—who have a high exposure to commonly used pesticides—risk of developing brain cancer was **29%** greater than it was in people without exposure to pesticides. Even more frightening, the researchers found that people who used pesticides around their house were twice as likely to be diagnosed with brain cancer as people who didn't use pesticides.

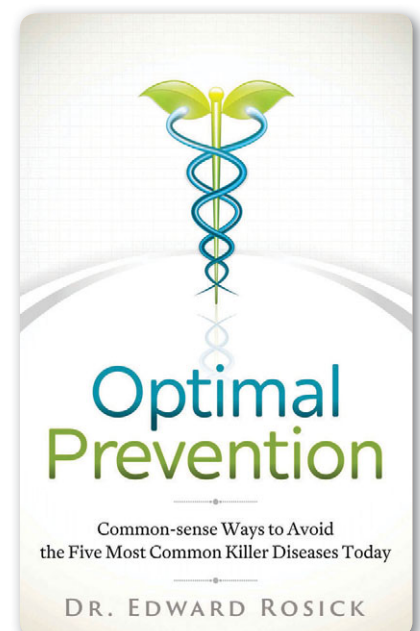
LE: In closing, what message would you like to send to readers of your book?

ER: I hope you read it from cover to cover and implement whatever is right for you. On a larger scale, learn more about prevention and then educate your friends, your relatives, and even your physician. Finally, in a perfect world, the government would wake from its bureaucratic stupor and realize that putting money into preventive medicine would save both lives and money. So write and call your congressional representatives and senators at both the state and national level—if there's one thing politicians respond to, it's an active and engaged populace! ●

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

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BY GARRY MESSICK

The Grain Bowl

Unlike commonly used grains such as wheat that are often refined and cause glucose to spike, whole grains have been increasingly recognized in recent years for their health benefits, including their association with lower cholesterol and blood pressure as well as cutting markers of inflammation. Touting the benefits of whole grains, Lilian Cheung, DSc, RD, a lecturer in nutrition at Harvard School of Public health, says, "You're getting fiber, a healthy plant-based protein, vitamins, minerals, and a variety of phytochemicals that will improve your health" when you make whole grains a part of your diet.

Restaurateur Nik Williamson shares his sentiments. Around the world, restaurants have been adding more whole grain-based meals to their menus. In 2015, Williamson took the trend a step further by opening The Porridge Café in London's fashionable East End. The eatery was a big success, featuring an entire menu of dishes based on a wide variety of grains—oats, rye, quinoa, chia, spelt, barley, buckwheat, amaranth, millet, and black rice. Now, he's channeled his enthusiasm for grains into a new cookbook titled *The Grain Bowl* (Phaidon).

We present below a selection of recipes from *The Grain Bowl* that are as easy to prepare as they are delicious and nutritious.

Black Rice Chicken Congee

Serves 2 • Preparation 5 minutes • Cooking 50 minutes

2 garlic cloves, peeled
2 tablespoons coarsely chopped fresh ginger
1 teaspoon olive oil, plus extra for frying
2 ½ cups chicken broth (stock)
½ cup black rice
2 large boneless chicken thighs
All-purpose (plain) flour, for dusting
2 tablespoons salted peanuts or cashews, coarsely chopped
2 tablespoons light soy sauce
2 scallions, coarsely chopped
Salt and black pepper

Put the garlic, ginger, and olive oil into a mortar and use a pestle (or a small food processor) to grind them until you have a paste.

Put 2 cups of the broth (stock) into a medium pan and bring to a simmer. Add the black rice and allow to simmer, covered, over low heat for 30 minutes, or until almost all the broth has been absorbed. Remove from the heat, cover, and set aside.

Sprinkle the chicken with a little flour. Heat a small skillet (frying pan) over high heat, add a little olive oil, then the chicken thighs. Do not move the thighs or shake the pan; this allows caramelization to take place.

Turn the thighs after a couple of minutes. Reduce the heat a little and cook for another few minutes. Once cooked all the way through, remove the chicken thighs from the heat and shred the meat on a clean cutting board. Add the remaining ½ cup broth to the black rice, along with the garlic-ginger paste, and stir over low heat for 10 minutes.

Divide the rice between 2 bowls and top with chicken, nuts, soy sauce, and scallions. Season with salt and pepper to taste, and serve.



Farro with Beets, Feta, Poached Eggs, and Capers

Serves 2 • Preparation 10 minutes • Cooking 30-45 minutes

11 oz. cooked beets, not in vinegar
2 tablespoons vegetable oil
 $\frac{3}{4}$ cup pearled Italian farro
(pearled spelt)
Splash of madeira
1 $\frac{1}{4}$ cups warm vegetable broth (stock)
2 eggs
2 tablespoons white wine vinegar
2 oz. feta, cubed
1 tablespoon capers
Salt and black pepper

Put 9 oz. of the cooked beets into a food processor and puree. Cut the remaining beets into medium dice.

Place a medium pan over medium heat, add the oil and farro (pearled spelt). Stir and cook for 2 minutes. Add the madeira and the broth (stock). Cook for 20 minutes, stirring occasionally, until almost all the liquid has been absorbed. Add the beet puree and cook for 5-10 minutes, or until that also has almost been absorbed.

When the beet mixture is almost ready, bring a pan of water to simmer over medium heat, add the vinegar and stir the water clockwise with a spoon to create a whirlpool. Crack the eggs and drop them, one at a time, into the center of the swirling water but make sure they do not touch each other. The eggs should take 2-3 minutes to cook. The fresher the eggs, the more likely they are to form a perfectly poached egg. Use a slotted spoon to prod an egg white to see if it's firm; if it is then immediately remove the eggs from the water and set aside on a plate lined with paper towels.



Divide the beet farro between 2 bowls. Top with the poached eggs, cubed feta, and diced beets and scatter with the capers. Season with salt and pepper to serve.

Rye and Barley with Sweet Peppers, Arugula, and Chile

Serves 2 • Preparation 5 minutes • Cooking 12-13 minutes

4 tablespoons olive oil
1 teaspoon dried oregano
1 small red chile, finely diced
½ onion, finely chopped
1 garlic clove, finely chopped
1 ½ cups mixed rye and barley flakes
2 ½ cups vegetable broth
1 teaspoon finely grated lemon zest
1 sweet pepper (preserved)
cut into long strands
1 small handful of arugula
2 lemon wedges
Salt and black pepper

Place a heavy pan over medium heat and add 1 tablespoon of the olive oil, the oregano, chile, onion, and garlic and sweat for 2-3 minutes. Add the grains and cook for 3-4 minutes, stirring constantly to prevent the grains from burning.

Pour in the broth (stock), add the lemon zest, and season with salt to taste. Reduce the heat to low and simmer for 7-8 minutes, or until all the liquid has been absorbed and the grains are soft.

Divide the rye and barley between 2 bowls. Top with the sweet pepper strands, arugula (rocket), and the lemon wedges to serve.



Buckwheat with Crispy Bacon, Avocado, and Roasted Tomatoes

Serves 2 • Preparation 10 minutes • Cooking 1¼ hours

4 slices pancetta or lean bacon
1 lb. cherry tomatoes
4 tablespoons extra virgin olive oil
2 teaspoons dried oregano
2 tablespoons olive oil
1 onion, finely chopped
2 garlic cloves, finely chopped
1 cup buckwheat
¼ cup red wine
2 teaspoons grated parmesan
½ avocado, sliced
Salt and black pepper

Place a skillet over medium heat. Add the pancetta or bacon and allow to crisp, then turn over to crisp on other side. Remove from the heat, set aside on a plate lined with paper towels, then snip into small pieces.

Preheat the oven to 350°.

Put the tomatoes into a baking dish, add the extra virgin olive oil, and turn to coat them. Sprinkle with the oregano and some salt and pepper. Bake in the oven for 45 minutes, or until just black at the edges. Remove from the oven. Reserve a few tomatoes for the garnish and put the rest into a blender and blend to puree.

Place a medium pan over medium heat. Add 1 tablespoon of the olive oil, the onion and garlic, and cook for 2-3 minutes, or until translucent. Add the buckwheat and pour in the red wine. Allow the wine to be absorbed by the buckwheat, then add the tomato puree. Cook for 20 minutes, or until the puree has almost all been absorbed. Remove from the heat.

Stir in the Parmesan and divide the buckwheat between 2 plates. Top with avocado, pancetta or bacon, and reserved tomatoes. Sprinkle with a little salt and pepper to serve.



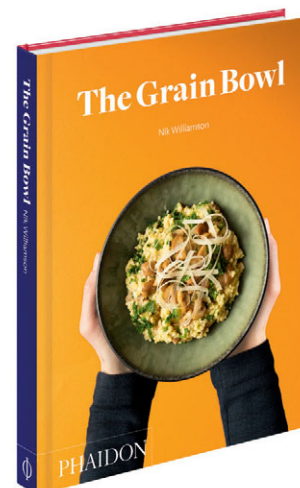
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4 bottles		\$9.45 each



Vitamin D3 • 2,000 IU (Natural Mint Flavor)

Item #01732 • 1 ounce

Great for traveling or for those who have trouble swallowing a softgel or capsule

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1 bottle	\$28	\$21
4 bottles		\$18.75 each

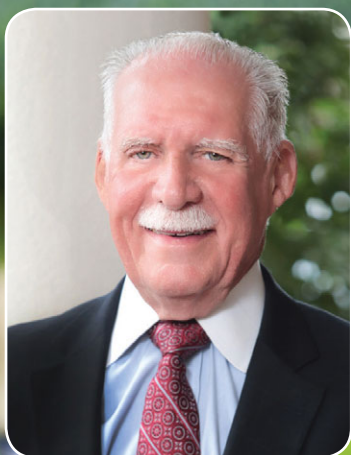
Caution: Individuals consuming more than 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Do not exceed 10,000 IU per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with high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

* If you have a thyroid condition or are taking anti-thyroid medications, do not use without consulting your health care practitioner.

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

BY JON VAN ZILE

The IRONMAN at 75

**DR. ROBERT WILLIX**

Dr. Robert Willix is the kind of guy who describes training for the IRONMAN triathlon in the brutal South Florida sun as “so much fun”—and this isn’t even the most surprising thing about his bid to compete in his second IRONMAN.

At 75 years old, Dr. Willix is pushing himself to the physical and mental limit to qualify for one of the hardest, most competitive athletic events in the world. He completed his first IRONMAN forty years ago and says he always thought it would be good to go back to Hawaii, where the renowned triathlon was founded in 1978.

“Finishing an IRONMAN is a life-changing event. Once you do it, it’s in your blood. I wanted to see if I could do it again. Would my body hold up? Would I get injured? Could I actually do it?”

An Operating-Table Epiphany

Dr. Willix's road to the IRONMAN began long before he landed in Hawaii decades ago.

"When I was 35, I was operating on a 34-year-old and I had this sudden vision that he could have been me," Willix said. "He was overweight. I was overweight. He had a high-stress job. I had a high-stress job."

Hoping to change his life, Dr. Willix quit heart surgery, became a vegan, and began training for marathons and triathlons. He completed his first IRONMAN in 1984 at the age of 44. Back then, the IRONMAN was still relatively new, but it was no less grueling than it is today. Competitors swim 2.4 miles in the open ocean, compete in a 112-mile bike race, and run a full 26.2 mile marathon, all on the same day.

Unfortunately, Dr. Willix's career in endurance sports ended only a year later, when he was involved in a serious car accident while training for another triathlon. After that, "life happened" as Dr. Willix built his career in medicine, later opening the Enlightened Medicine Clinic in Boca Raton, Florida. But he never lost his competitive fire—and never allowed his own conditioning and health to deteriorate.

Today, as he contemplates going back to Hawaii, he's facing a very different challenge. Athletes have to compete in qualifying events to get an invitation, which means Dr. Willix will first have to clear the competitive field in his age group in a November qualifying triathlon. And with his son as his coach (also an endurance athlete), Dr. Willix is adjusting to a different kind of training regimen.

Dr. Willix's Training and Supplement Regimen

Since his first IRONMAN, training has dramatically changed. In the old days, training for a triathlon was all about logging distance. You swam a few miles, ran 40 miles a week, biked a few hundred miles—the distance was the goal.

Today, Dr. Willix says training is much more complex and strategic.

"Where we used to aim for distance, now we aim for intensity, in part because most of us have jobs. I don't have four hours a day to train, so I train for two hours a day, doing things like interval training, wind sprints. You aim for peak intensity."

While the training has taken a toll on him—he suffered a partially separated shoulder earlier this

year when he fell off his bike and then rode 14 miles home—he says the training is its own reward.

"You feel great when you're physically fit. That's true at 40, 60, 70, or 90. I feel great right now. It's more mental than physical."

To support this rigorous training program, Dr. Willix has designed comprehensive and highly personalized supplements for himself.

"Because I'm training, I have more inflammation. I'm concentrating on vegan supplements that reduce inflammation, like **clary sage oil**, **turmeric**, and **curcumin**. I also take **coenzyme Q10**."

The foundation of his supplement program is a multivitamin he designed himself and has micro-encapsulized at an overseas supplier.



Enlightened Living Medicine

Located in Boca Raton, Florida, Enlightened Living Medicine operates by a simple philosophy: lead with hope.

In founding his clinic, Dr. Robert Willix wanted to offer his patients highly personalized “whole-person” medical care that focused on wellness and disease prevention, instead of the typical model of waiting for a disease to develop and then aggressively treating the symptoms with pharmaceuticals and surgery. Patients at Enlightened Living Medicine have access to state-of-the-art diagnostic protocols that measure wellness factors including oxygen efficiency, body fat percentage, hormone status, bone density, and other tests that are not typically available at traditional doctor’s offices.

These tests form the foundation of patient treatment, says Dr. Willix. By tracking “wellness measures” instead of disease markers, the staff is able to develop personalized treatment plans. These might include bioidentical hormone therapy, medically supervised weight loss, nutrition counseling, and other modalities—all under the supervision of board-certified physicians.



“The multivitamin is a base of what you do,” he explains. “When it comes to a good multi, you really have to look at several things. Is there enough **vitamin B**? If not, add an additional vitamin B complex. Is there enough **vitamin A**? A multivitamin is when you really should be looking at what’s next in your life and what’s important at your age.”

Because most people don’t have the expertise to formulate their own supplements, Dr. Willix recommends the **Life Extension®** multivitamins, including the Two-Per-Day and Life Extension Mix™.

To boost his athletic performance, Dr. Willix also takes protein powders mixed into “green” drinks and is considering adding amino acids to support muscle recovery and building.

He recommends that adults get a **vitamin D** test and supplement with vitamin D to bring levels up to a safer blood concentration. “We know that most people are deficient in vitamin D,” he says.

For men, Dr. Willix is also a believer in supplements that reduce benign prostatic hyperplasia (BPH), including **saw palmetto** and **pygeum**, plus *indole-3-carbinol* or I3C to naturally support healthy testosterone levels.

When it comes to testosterone, Dr. Willix believes the best option for aging men is to “make it themselves whenever possible.” This might include testosterone-boosting herbs and regular exercise.

“They used to say you only needed to exercise three days a week, but now we’re finding it’s more like five days a week. The good news is that you don’t have to exercise for very long to get the benefits. Thirty minutes a day is plenty, but it’s so important.”

Ideally, men over 40 should start having regular tests for total testosterone, free testosterone, estradiol, luteinizing hormone, DHT, and sex-hormone binding

globulin tests. If tests reveal a testosterone deficiency, they should take action to correct it.

“I think there’s pretty good evidence that males starting around age 30 begin to lose testosterone,” he said. “Normal testosterone levels should be where they were at when you were in your twenties.”

If exercise and supplementation doesn’t work to adequately raise testosterone levels, Dr. Willix recommends testosterone supplementation. In fact, testosterone supplementation is an important part of his personal health program.

“There’s strong evidence that bioidentical testosterone will preserve muscle mass and vigor,” he says. “And for men who are worried about prostate cancer, there’s absolutely no evidence that testosterone supplementation has anything to do with prostate cancer. That’s a myth that’s been in medicine for years and it’s dead wrong.”

Why Doctors Shouldn't Look for "Disease"

No matter what happens at his qualifying race, Dr. Willix is still an inspiring example of what's possible—and this is no accident. Dr. Willix believes that doctors should be the ultimate role models for health, and he relies on his own comprehensive approach to keep him in top shape. This includes physical fitness, nutrition, supplementation, hormone replacement therapy, stress control, and spirituality.

"I believe that physicians have to become the model for their patients. I live the lifestyle I want my patients to live."

In many cases, this begins with education and helping patients understand how the environment affects their health. As an example, Dr. Willix points to the dangerous ingredients and synthetic hor-

mones that pollute our food supply, not to mention the alarming lack of physical activity most people get and the many stresses of modern life.

"There are so many toxic things going on in the environment that we didn't have 100 years ago," he says.

The rampant use of hormones in agriculture and industry poses a special challenge. In his own practice, Dr. Willix has observed that 40-year-old men often have lower testosterone levels than men in their 60s and believes it's due to the heavy use of hormones in meat and dairy farming that began in recent decades.

Overall, he believes good health is achieved through balance—eating a healthy diet of wholesome food, getting adequate daily exercise, reducing stress, maintaining a youthful hormone profile, having a strong spiritual connection, and

visiting your doctor so you can keep track of your true measures of health.

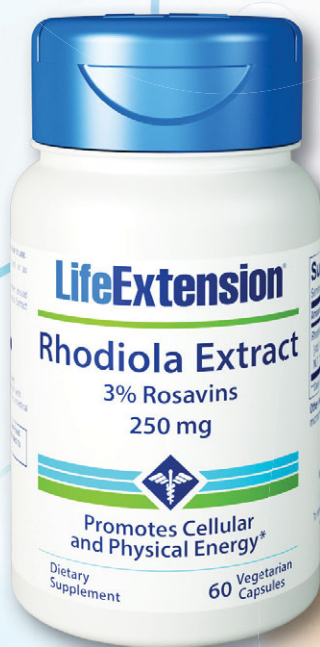
"I've been teaching fitness, exercise, and nutrition since I left heart surgery," he says. "It's hard to motivate people. But if you can show them that they can get their energy back and bring their inner athlete back out, that's a great motivation. People are almost always ready to change." ●

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

For more information about Dr. Willix and Enlightened Living Medicine, please visit <http://elmedicine.com/>



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Blood Testing The Ultimate Information

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COMPREHENSIVE PANELS	
MALE LIFE EXTENSION PANEL (LC322582) \$269 CBC/Chemistry Profile (See description) C-Reactive Protein Homocysteine DHEA-S Free Testosterone TSH for thyroid function Total Testosterone Estradiol PSA (prostate-specific antigen) Vitamin D 25-hydroxy Hemoglobin A1c	
FEMALE LIFE EXTENSION PANEL (LC322535) \$269 CBC/Chemistry Profile (See description) C-Reactive Protein Homocysteine DHEA-S Free Testosterone TSH for thyroid function Total Testosterone Estradiol Vitamin D 25-hydroxy Progesterone Hemoglobin A1c	
CHRONIC FATIGUE PROFILE* (LC100005) \$345 CBC/Chemistry profile (See description), Epstein-Barr Virus Antibodies (IgG/IgM), Cytomegalovirus Antibodies (IgG/IgM), Ferritin, Free and Total Testosterone, DHEA-S, Free T3, Free T4, Cortisol, C-Reactive protein, Vitamin B12 and Folate, Insulin	
WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028) \$275 CBC/Chemistry profile (see description), DHEA-S, Free and Total Testosterone, Estradiol, Progesterone, Cortisol, TSH, Free T3, Free T4, Reverse T3, Insulin, Hemoglobin A1c, Vitamin D 25-hydroxy, C-Reactive Protein (high sensitivity), and Ferritin.	
MALE ELITE PANEL* (LC100016) \$575 CBC/Chemistry Profile (See description), Free and Total Testosterone, Total Estrogens, Estradiol, DHEA-S, Progesterone, Pregnenolone, DHT, FSH, LH, TSH, Free T3, Free T4, Reverse T3, Free and Total PSA, IGF-1, SHBG, Vitamin D 25-OH, hs-CRP, Ferritin, Homocysteine	
FEMALE ELITE PANEL* (LC100017) \$575 CBC/Chemistry Profile (See description), 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	
MALE HORMONE ADD-ON PANEL (LCADDM)* \$120 Pregnenolone and Dihydrotestosterone (DHT) To provide an even more in-depth analysis of a man's hormone status, Life Extension has created this panel as an addition to the Male Life Extension Panel.	
FEMALE HORMONE ADD-ON PANEL (LCADDF)* \$125 Pregnenolone and Total Estrogens To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel.	
COMPREHENSIVE THYROID PANEL (LC100018) \$199 TSH, T4, Free T4, Free T3, Reverse T3, TPO, ATA	
LIFE EXTENSION THYROID PANEL (LC304131) \$75 TSH, T4, Free T3, Free T4.	
THYROID PANEL WITH REVERSE T3 (LC100044) \$120 TSH, T4, Free T3, Free T4, Reverse T3	
THE CBC/CHEMISTRY PROFILE (LC381822) \$35 Note: This CBC/Chemistry Profile is included in many Life Extension panels. Please check panel descriptions.	
CARDIOVASCULAR RISK PROFILE Total Cholesterol Cholesterol/HDL Ratio HDL Cholesterol Estimated CHD Risk LDL Cholesterol Glucose Triglycerides Iron	
LIVER FUNCTION PANEL AST (SGOT) Total Bilirubin ALT (SGPT) Alkaline Phosphatase LDH	
KIDNEY FUNCTION PANEL BUN BUN/Creatinine Ratio Creatinine Uric Acid	
BLOOD PROTEIN LEVELS Total Protein Globulin Albumin Albumin/Globulin Ratio	
BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE Red Blood Cell Count Monocytes White Blood Cell Count Lymphocytes Eosinophils Platelet Count Basophils Hemoglobin Polys (Absolute) Hematocrit Lymphs (Absolute) MCV Monocytes (Absolute) MCH Eos (Absolute) MCHC Baso (Absolute) Polynucleated Cells RDW	
BLOOD MINERAL PANEL Calcium Sodium Potassium Chloride Phosphorus Iron	
MALE COMPREHENSIVE HORMONE PANEL* (LC100010) \$299 CBC/Chemistry Profile, DHEA-S, Estradiol, DHT, PSA, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.	
FEMALE COMPREHENSIVE HORMONE PANEL* (LC100011) \$299 CBC/Chemistry Profile, DHEA-S, Estradiol, Total Estrogens, Progesterone, Pregnenolone, Total and Free Testosterone, SHBG, TSH, Free T3, Free T4, Cortisol.	
FOOD SAFE ALLERGY TEST** (LCM73001) \$198 This test measures delayed (IgG) food allergies for 95 common foods.	
STRESS MANAGEMENT PROFILE (LC100043) \$125 Cortisol AM/PM, DHEA-S, Glucose, Insulin, Progesterone, Free T3, Lipid Panel.	
ADRENAL STRESS PROFILE-SALIVA** (LC100046) \$175 Cortisol X4, DHEA-S, Cortisol AM/DHEA-S ratio, Secretory IgA.	
BASIC CORTISOL PROFILE-SALIVA** (LC100047) \$129 Cortisol X4 to measure cortisol rhythm over time.	
SLEEP HORMONES PROFILE-SALIVA** (LC100048) \$175 Cortisol and Melatonin plus ratio.	
MTHFR/COMT GENETIC METHYLATION PROFILE** (LC100045) \$149 Tests for genetic mutations in MTHFR and COMT.	



Other Popular Tests and Panels

- | | |
|--|---|
| <input type="radio"/> HEALTHY AGING PANEL-COMPREHENSIVE* (LC100026) \$249 | <input type="radio"/> HORMONES |
| CBC/Chemistry profile, 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. | <input type="radio"/> DHEA-SULFATE (LC004020) \$61 |
| | This test shows if you are taking the proper amount of DHEA. |
| <input type="radio"/> HEALTHY AGING PANEL-BASIC* (LC100025) \$149 | <input type="radio"/> MALE BASIC HORMONE PANEL (LC100012) \$75 |
| CBC/Chemistry profile, C-Reactive Protein (high sensitivity), Vitamin B12, Folate, Vitamin D 25-hydroxy, Hemoglobin A1c, TSH, Ferritin, and Insulin. | DHEA-S, Estradiol, Free and Total Testosterone, PSA |
| <input type="radio"/> NMR LIPOPROFILE® (LC123810) \$99 | <input type="radio"/> FEMALE BASIC HORMONE PANEL (LC100013) \$75 |
| The NMR LipoProfile® directly measures LDL particle size and number as well as HDL particle number, total cholesterol, and triglycerides. It also provides a calculation of one's risk of insulin resistance by assessing abnormalities in lipoprotein markers. | DHEA-S, Estradiol, Free and Total Testosterone, Progesterone |
| <input type="radio"/> ANEMIA PANEL* (LC100006) \$79 | <input type="radio"/> DIHYDROTESTOSTERONE (DHT)* (LC500142) \$50 |
| CBC/Chemistry Profile, Ferritin, Total Iron Binding Capacity (TIBC), Vitamin B12, Folate | Measures serum concentrations of DHT. |
| <input type="radio"/> AUTOIMMUNE DISEASE SCREEN* (LC100041) \$199 | <input type="radio"/> ESTRADIOL (LC004515) \$33 |
| ANA screen, hs-CRP, TNF-alpha, Immunoglobulins, IgA, IgG, IgM | For men and women. Determines the proper amount in the body. |
| <input type="radio"/> DIABETES MANAGEMENT PROFILE – COMPREHENSIVE (LC100040) \$129 | <input type="radio"/> INSULIN FASTING (LC004333) \$29.90 |
| Hemoglobin A1C, Glucose, Insulin, Lipid Panel, Glycomark | Can predict those at risk of diabetes, obesity, heart and other diseases. |
| <input type="radio"/> DIABETES MANAGEMENT PROFILE – BASIC (LC100039) \$39 | <input type="radio"/> PREGNENOLONE* (LC140707) \$116 |
| Hemoglobin A1C, Glucose, Insulin | Used to determine ovarian failure, hirsutism, adrenal carcinoma, and Cushing's syndrome. |
| <input type="radio"/> ADVANCED CARDIAC BIOMARKERS | <input type="radio"/> PROGESTERONE (LC004317) \$55 |
| <input type="radio"/> ADVANCED OXIDIZED LDL PANEL* (LC100035) \$285 | Primarily for women. Determines the proper amount in the body. |
| 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"/> SEX HORMONE BINDING GLOBULIN (SHBG) (LC082016) \$33 |
| <input type="radio"/> OXIDIZED LDL PANEL* (LC100034) \$175 | This test is used to monitor SHBG levels which are under the positive control of estrogens and thyroid hormones, and suppressed by androgens. |
| 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"/> GENERAL HEALTH |
| <input type="radio"/> OMEGA CHECK™ (LCOMEGA) \$131.25 | <input type="radio"/> VITAMIN D (25OH) (LC081950) \$47 |
| Provides valuable information on your risk of developing heart disease, sudden heart attack and cardiac death. The Omega Check™ also includes your AA:EPA ratio allowing you to determine and track a major factor in total body inflammation. | This test is used to rule out vitamin D deficiency. |
| | <input type="radio"/> FERRITIN (LC004598) \$28 |
| | Ferritin levels reflect your body's iron stores and is also a biomarker for insulin resistance. |
| | <input type="radio"/> PSA (PROSTATE SPECIFIC ANTIGEN) (LC010322) \$31 |
| | Screening test for prostate disorders and possible cancer. |

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** This test is packaged as a kit.

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L-Glutamine
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L-Lysine
L-Taurine Powder
L-Tyrosine Powder
Super Carnosine
Taurine

Blood Pressure & Vascular Support

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

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Bone Restore
Bone Restore with Vitamin K2
Bone Strength Formula with KoAct®
Bone-Up™
Calcium Citrate with Vitamin D
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Cognitex® with Brain Shield®
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Fish Oil & Omegas

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

Food

California Estate Extra Virgin Olive Oil
Rich Rewards® Breakfast Blend
Rich Rewards® Breakfast Blend Natural Mocha Flavor
Rich Rewards® Breakfast Blend Natural Vanilla Flavor
Rich Rewards® Breakfast Blend Whole Bean Coffee
Rich Rewards® Decaf Roast
Stevia Sweetener

Glucose Management

CinSulin® with InSea2® and Crominex® 3+
Mega Benfotiamine
Natural Glucose Absorption Control
Tri Sugar Shield®

Heart Health

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

Hormone Balance

DHEA (Dehydroepiandrosterone)
Inner Power
Pregnenolone
Triple Action Cruciferous Vegetable Extract with Resveratrol
Triple Action Cruciferous Vegetable Extract

Immune Support

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

Inflammation Management

5-LOX Inhibitor with AprèsFlex®
Advanced Bio-Curcumin® with Ginger & Turmerones
Black Cumin Seed Oil
Black Cumin Seed Oil with Bio-Curcumin®
Boswellia
Cytokine Suppress™ with EGCG
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®
ArthroMax® Herbal Joint Formula
Bio-Collagen with Patented UC-II®
Fast-Acting Joint Formula
Glucosamine/Chondroitin Capsules
Krill Healthy Joint Formula
MSM (Methylsulfonylmethane)

Kidney & Bladder Support

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

Liver Health & Detoxification

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

Longevity & Wellness

Alpha-Lipoic Acid
AMPK Activator
AppleWise Polyphenol Extract
Berry Complete
Blueberry Extract
Blueberry Extract with Pomegranate
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 Fucoïdan with Maritech® 926
Optimized Resveratrol
Optimized Resveratrol with Nicotinamide
Riboside
pTeroPure®
Pycnogenol® French Maritime
Pine Bark Extract
Resveratrol with Pterostilbene
RNA (Ribonucleic Acid)
Super R-Lipoic Acid
X-R Shield

Men's Health

Mega Lycopene Extract
PalmettoGuard® Saw Palmetto with
Beta-Sitosterol
PalmettoGuard® Saw Palmetto/Nettle Root
Formula with Beta-Sitosterol
Pomi-T®
Prelox® Natural Sex for Men®
Super MiraForte with Standardized Lignans
Triple Strength ProstaPollen™
Ultra Natural Prostate

Minerals

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

Miscellaneous

Solarshield® Sunglasses

Mood & Stress Management

5 HTP
L-Theanine
Natural Cortisol Balance
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

Anti-Aging Rejuvenating Scalp Serum
Biosil
Dr. Proctor's Advanced Hair Formula
Dr. Proctor's Shampoo
European Leg Solution Featuring Certified
Diosmin 95
Face Master Platinum
Facial Toning System
Hair, Skin & Nail Rejuvenation Formula
w/VERISOL®
Hair Suppress Formula

Life Extension Toothpaste
Sinus Cleanser
Venotone
Xyliwhite Mouthwash

Pet Care

Cat Mix
Dog Mix

Probiotics

Bifido GI Balance
BroccoMax®
FLORASSIST® Balance
FLORASSIST® GI with Phage Technology
FLORASSIST® Heart Health
FLORASSIST® Mood
FLORASSIST® Oral Hygiene
FLORASSIST® Throat Health
Theracac® 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-Redness & Adult Blemish Lotion
Bioflavonoid Cream
Broccoli Sprout Cream
Collagen Boosting Peptide Serum
Corrective Clearing Mask
DNA Repair Cream
Essential Plant Lipids Reparative Serum
Eye Lift Cream
Face Rejuvenating Anti-Oxidant Cream
Fine Line-Less
Healing Formula
Healing Mask
Healing Vitamin K Cream
Hyaluronic Facial Moisturizer
Hyaluronic Oil-Free Facial Moisturizer
Hydrating Anti-Oxidant Facial Mist
Hydroderm
Lifting & Tightening Complex
Lycopene Cream
Melatonin Cream
Mild Facial Cleanser
Multi Stem Cell Skin Tightening Complex
Neck Rejuvenating Anti-Oxidant Cream
Pigment Correcting Cream
Rejuvenating Serum
Rejuvenex® Body Lotion
Rejuvenex® Factor Firming Serum
Renewing Eye Cream
Resveratrol Anti-Oxidant Serum
Shade Factor
Skin Lightening Serum
Skin Restoring Phytoceramides with Lipowheat®
Skin Stem Cell Serum
Stem Cell Cream with Alpine Rose
Tightening & Firming Neck Cream
Triple-Action Vitamin C Cream
Ultimate MicroDermabrasion
Ultra Eyelash Booster
Ultra Lip Plumper
Ultra Rejuvenex®
Ultra 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)
New Zealand Whey Protein Concentrate
(Natural Chocolate and Vanilla Flavor)
Tart Cherry with CherryPure®
Whey Protein Isolate
(Chocolate and Vanilla Flavor)

Vitamins

Ascorbyl Palmitate
Benfotiamine with Thiamine
Beta-Carotene
BioActive Complete B-Complex
Biotin
Buffered Vitamin C Powder
Fast-C® with Dihydroquercetin
Gamma E Mixed Tocopherol Enhanced
with Sesame Lignans
Gamma E Mixed 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™

Women's Health

Advanced Natural Sex for Women® 50+
Breast Health Formula
Femmenessence MacaPause®
Natural Estrogen
Progesta-Care®
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			
01874	ACETYL-L-CARNITINE ARGINATE • 90 veg. caps	52.00	39.00	35.00			
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			
00681	AHCC® • 500 mg, 30 caps	59.98	44.99				
29727	AHCC® (KINOKO® GOLD) • 500 mg, 60 veg. caps	74.95	52.47				
00457	ALPHA-LIPOIC ACID W/BIOTIN • 250 mg, 60 caps	37.00	27.75	24.00			
01907	AMPK ACTIVATOR • 90 veg. caps	48.00	36.00	33.00			
01509	ANTI-ADIPOCYTE FORMULA W/MERATRIM® & INTEGRA LEAN® (Advanced) • 60 veg. caps	39.00	29.25	27.00			
02140	ANTI-ALCOHOL w/HEPATOPRO COMPLEX • 60 caps	22.00	16.50	15.00			
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			
02004	ARTERIAL PROTECT • 30 veg. caps	48.00	36.00	33.00			
01617	ARTHROROMAX® W/THEAFLAVINS & APRÈSFLEX® 120 veg. caps	44.00	33.00	30.00			
01618	ARTHROROMAX® ADVANCED W/UC-II® & APRÈSFLEX® 60 caps	36.00	27.00	24.00			
02108	ARTHROROMAX® HERBAL JOINT FORMULA • 60 veg. caps	40.00	30.00	27.00			
01404	ARTHO-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			
01923	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	11.50	8.63				
01622	BIFIDO GI BALANCE • 60 veg. caps	20.00	15.00	13.50			
01873	BILBERRY EXTRACT • 100 mg, 90 veg. caps	36.00	27.00	24.00			
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	19.99	15.99				
*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				
02025	BLOOD PRESSURE (Dual Action) • 60 veg. tabs	44.00	33.00	28.00			
SUBTOTAL OF COLUMN 1							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
70000	BLOOD PRESSURE MONITOR (ACCUFIT™) • med/lg cuff	79.99	49.99				
70004	BLOOD PRESSURE MONITOR • Digital wrist cuff	69.95	52.46				
02024	BLOOD PRESSURE (Triple Action AM/PM) • 60 veg. tabs	44.00	33.00	28.00			
01214	BLUEBERRY EXTRACT • 60 veg. caps	22.50	16.88	15.00			
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			
01942	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			
26576	BROCCO MAX® • 60 veg. caps	26.95	20.21				
01203	BROMELAIN (Specially-coated) 500 mg, 60 enteric coated tablets	21.00	15.75	14.25			
C							
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			
01829	CARNOSINE • 500 mg, 60 veg. caps	36.00	27.00	24.00			
02020	CARNOSINE (Super) • 500 mg, 60 veg. caps	40.00	30.00	27.00			
01932	CAT MIX • 100 grams powder	14.00	10.50	8.25			
01899	CHILDREN'S FORMULA LIFE EXTENSION MIX™ 100 chewable tablets	20.00	15.00	13.50			
00550	CHLORELLA • 500 mg, 200 tablets	23.98	17.99				
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	48.00	36.00	32.00			
01504	CHROMIUM W/CROMINEX® 3+ (Optimized) 500 mcg, 60 veg. caps	9.00	6.75	6.00			
01503	CINSULIN® W/INSEAL2® 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) 120 softgels	36.00	27.00	24.75	19.75		
00819	CLA BLEND W/GUARANA & SESAME LIGNANS (Super) 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		
SUBTOTAL OF COLUMN 2							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01659	COGNIZIN® CDP CHOLINE CAPS • 250 mg, 60 veg. caps	36.00	27.00	25.50			
01945	COMPLETE B-COMPLEX (BioActive) • 60 veg. caps	12.00	9.00	8.00			
02198	COMPREHENSIVE NUTRIENT PACKS ADVANCED • 30 packs	90.00	67.50	61.50			
01949	COQ10 w/d-LIMONENE (Super-Absorbable) 50 mg, 60 softgels	25.00	18.75	16.50	15.00		
01948	COQ10 w/d-LIMONENE (Super-Absorbable) 100 mg, 100 softgels	46.00	34.50	28.00	26.25		
01929	COQ10 (Super Ubiquinol) • 100 mg, 60 softgels	56.00	42.00	36.00	33.00		
01733	COQ10 w/BIOPQQ® (Super Ubiquinol) • 100 mg, 30 softgels	54.00	40.50	33.00	30.00		
01426	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 100 mg, 60 softgels	62.00	46.50	39.00	36.00		
01425	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 50 mg, 100 softgels	58.00	43.50	34.50	31.50		
01427	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 50 mg, 30 softgels	20.00	15.00	12.00			
01431	COQ10 w/ENH MITOCHONDRIAL SUPPORT™ (Super Ubiquinol) • 200 mg, 30 softgels	62.00	46.50	39.00	36.00		
00862	CRAN-MAX® • 500 mg, 60 veg. caps	17.50	13.13	11.25			
01424	CRAN-MAX® WITH ELLIROSE™ (Optimized) • 60 veg. caps	18.00	13.50	12.00			
01529	CREATINE CAPSULES • 120 veg. caps	10.95	8.21	6.94			
01746	CREATINE WHEY GLUTAMINE POWDER • 454 grams (vanilla)	30.00	22.50	19.50			
01429	CR MIMETIC LONGEVITY FORMULA • 60 veg. caps	39.00	29.25	27.00			
00407	CURCUMIN® (Super Bio) • 400 mg, 60 veg. caps	38.00	28.50	26.25			
01924	CURCUMIN® w/GINGER & TURMERONES (Advanced Bio) 30 softgels	30.00	22.50	20.25			
01804	CYTOKINE SUPPRESS™ W/EGCG • 30 veg. caps	30.00	22.50	20.25			
COSMESIS							
80157	ADVANCED ANTI-GLYCATION PEPTIDE SERUM • 1 oz	53.00	39.75	34.50			
80154	ADVANCED LIGHTENING CREAM • 1 oz	65.00	48.75	42.75			
80155	ADVANCED PEPTIDE HAND THERAPY • 4 oz	46.00	34.50	29.25			
80152	ADVANCED TRIPLE PEPTIDE SERUM • 1 oz	65.00	48.75	42.75			
80140	ADVANCED UNDER EYE SERUM W/STEM CELLS • .33 oz	49.00	36.75	31.50			
80139	AMBER SELF MICRODERMABRASION • 2 oz	49.00	36.75	31.50			
80158	ANTI-AGING FACE OIL • 1 oz	59.00	44.25	39.00			
80118	ANTI-AGING MASK • 2 oz	72.00	54.00	47.52			
80151	ANTI-AGING REJUVENATING FACE CREAM • 2 oz	65.00	48.75	42.75			
80153	ANTI-AGING REJUVENATING SCALP SERUM • 2 oz	46.00	34.50	29.25			
80134	ANTI-GLYCATION SERUM W/BLEBERRY & POMEGRANATE EXTRACTS • 1 oz	33.00	24.75	23.51			
80133	ANTIOXIDANT FACIAL MIST • 2 oz	32.00	24.00	22.80			
80127	ANTIOXIDANT REJUVENATING FOOT CREAM • 2 oz	45.00	33.75	32.10			
80105	ANTI-REDNESS & ADULT BLEMISH LOTION • 1 oz	74.50	55.88	49.17			
80147	BIOFLAVONOID CREAM • 1 oz	46.00	34.50	29.25			
80144	BROCCOLI SPROUT CREAM • 1 oz	46.00	34.50	29.25			
80156	COLLAGEN BOOSTING PEPTIDE SERUM • 1 oz	59.00	44.25	39.00			
80120	CORRECTIVE CLEARING MASK • 2 oz	64.50	48.38	42.57			
80141	DNA REPAIR CREAM • 1 oz	49.00	36.75	31.50			
80108	ESSENTIAL PLANT LIPIDS REPARATIVE SERUM • 1 oz	74.95	56.21	49.46			
SUBTOTAL OF COLUMN 3							

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		
80163	EYE LIFT CREAM • 0.5 fl oz	59.00	44.25	39.00			
80123	FACE REJUVENATING ANTIOXIDANT CREAM • 2 oz	69.50	52.13	45.87			
80107	FINE LINE-LESS • 1 oz	74.50	55.88	49.17			
80131	HAIR SUPPRESS FORMULA • 4 oz	59.00	44.25	38.94			
80137	HEALING FORMULA ALL-IN-ONE CREAM • 1 oz	53.00	39.75	34.07			
80115	HEALING MASK • 2 oz	64.50	48.38	42.57			
80102	HEALING VITAMIN K CREAM • 1 oz	79.50	59.63	52.47			
80109	HYALURONIC FACIAL MOISTURIZER • 1 oz	58.00	43.50	38.28			
80110	HYALURONIC OIL-FREE FACIAL MOISTURIZER • 1 oz	58.00	43.50	38.28			
80138	HYDRATING ANTIOXIDANT FACE MIST • 4 oz	39.95	29.96	28.50			
80103	LIFTING & TIGHTENING COMPLEX • 1 oz	74.50	55.88	49.17			
80146	LYCOPENE CREAM • 1 oz	28.00	21.00	19.05			
80135	MELATONIN CREAM • 1 oz	33.00	24.75	20.33			
80114	MILD FACIAL CLEANSER • 8 fl. oz	59.00	44.25	38.94			
80159	MULTI STEM CELL SKIN TIGHTENING COMPLEX • 1 oz	59.00	44.25	39.00			
80122	NECK REJUVENATING ANTIOXIDANT CREAM • 2 oz	64.00	48.00	42.24			
80111	PIGMENT CORRECTING CREAM • 1/2 oz	74.00	55.50	48.84			
80106	REJUVENATING SERUM • 1 oz	74.50	55.88	49.17			
80150	RENEWING EYE CREAM • 1/2 oz	65.00	48.75	42.75			
80142	RESVERATROL ANTI-OXIDANT SERUM • 1 oz	46.00	34.50	29.25			
80112	SKIN LIGHTENING SERUM • 1/2 oz	85.00	63.75	56.10			
80130	SKIN STEM CELL SERUM • 1 oz	74.00	55.50	51.75			
80143	STEM CELL CREAM W/ALPINE ROSE • 1 oz	66.00	49.50	43.50			
80148	TIGHTENING & FIRMING NECK CREAM • 2 oz	39.00	29.25	26.25			
80161	TRIPLE ACTION VITAMIN C CREAM • 1 oz jar	59.00	44.25	39.00			
80162	ULTIMATE MICRODERMABRASION • 8 fl. oz	39.00	29.25	26.25			
80160	ULTRA EYELASH BOOSTER • 0.25 oz (2 units \$39)	59.00	44.25				
80116	ULTRA LIP PLUMPER • 1/3 oz	64.00	48.00	42.24			
80101	ULTRA WRINKLE RELAXER • 1 oz	89.95	67.46	59.82			
80113	UNDER EYE REFINING SERUM • 1/2 oz	74.50	55.88	49.17			
80104	UNDER EYE RESCUE CREAM • 1/2 oz	74.50	55.88	49.17			
80129	VITAMIN C SERUM • 1 oz	85.00	63.75	56.10			
80136	VITAMIN D LOTION • 4 oz	36.00	27.00	25.25			
80145	VITAMIN E-ESSENTIAL CREAM • 1 oz	28.00	21.00	19.50			
80149	YOUTH SERUM • 1 oz	65.00	48.75	42.75			
D							
00658	7-KETO® DHEA METABOLITE • 25 mg, 100 caps	28.00	21.00	18.00			
01479	7-KETO® DHEA METABOLITE • 100 mg, 60 veg. caps	40.00	30.00	27.00			
01640	DHA (Vegetarian) • 30 veg. softgels	20.00	15.00	13.50			
00607	DHEA • 25 mg, 100 tablets (Dissolve in mouth)	14.00	10.50	8.81			
01478	DHEA COMPLETE • 60 veg. caps	48.00	36.00	32.40			
00335	DHEA • 25 mg, 100 caps	16.00	12.00	11.00			
00454	DHEA • 15 mg, 100 caps	14.00	10.50	9.00			
00882	DHEA • 50 mg, 60 caps	19.00	14.25	12.75			
01689	DHEA • 100 mg, 60 veg. caps	24.00	18.00	16.50			
01358	DIGEST RC® • 30 tablets	19.95	14.96	12.75			
SUBTOTAL OF COLUMN 4							

MARCH 2017

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	I		
02021	DIGESTIVE ENZYMES (Enhanced Super) • 60 veg. caps	22.00	16.50	15.00				
02022	DIGESTIVE ENZYMES w/PROBIOTICS (Enhanced Super) • 60 veg. caps	28.00	21.00	18.00				
01671	D, L-PHENYLALANINE • 500 mg, 100 veg. caps	18.75	14.06	12.00				
01540	DMAE BITARTRATE • 150 mg, 200 veg. caps	18.00	13.50	11.25				
01570	DNA PROTECTION FORMULA • 60 veg. caps	34.00	25.50	24.00				
01931	DOG MIX • 100 grams powder	18.00	13.50	11.25				
02006	DOPA-MIND™ • 60 veg. tabs	48.00	36.00	32.00				
00321	DR. PROCTOR'S ADVANCED HAIR FORMULA • 2 oz	39.95	29.96	24.00				
00320	DR. PROCTOR'S HAIR SHAMPOO • 8 oz	24.95	18.71	16.50				
E								
01528	ECHINACEA EXTRACT • 250 mg, 60 veg. caps	14.35	10.76	9.38				
01997	ENDOTHELIAL DEFENSE™ w/POMEGRANATE COMPLETE AND CORDIART™ • 60 softgels	68.00	51.00	46.50				
00997	ENDOTHELIAL DEFENSE™ w/GLISODIN® • 60 veg. caps	54.00	40.50	36.00				
01937	EPA/DHA (Mega) • 120 softgels	20.00	15.00	13.50				
02009	ESOPHACOO™ • 120 chewable tablets	20.00	15.00	13.50				
01737	ESOPHAGEAL GUARDIAN (Berry flavor) • 60 chewable tablets	36.00	27.00	24.00				
01042	EUROPEAN LEG SOLUTION DIOSMIN 95 600 mg, 30 veg. tabs	20.00	15.00	13.50				
01706	EXTRAORDINARY ENZYMES • 60 caps	26.00	19.50	18.00				
02008	(CALIFORNIA ESTATE) EXTRA VIRGIN OLIVE OIL • 500 ml (16.9 fl. oz)	33.00	24.75	22.50				
01514	EYE PRESSURE SUPPORT W/MIRTOGENOL® • 30 veg. caps	38.00	28.50	25.50				
F								
*01054	FACE MASTER® PLATINUM • Facial Toning System	199.00	199.00					
00965	FAST-ACTING JOINT FORMULA • 30 caps	39.00	29.25	27.00				
01717	FAST-C® W/DIHYDROQUERCETIN • 120 veg. tabs	26.00	19.50	18.00				
20053	FEM DOPHILUS® • 30 caps	25.95	19.46					
20055	FEM DOPHILUS® • 60 caps	39.95	29.96					
01064	FEMMENESSENCE MACAPAUSE® • 120 veg. caps	34.99	26.24					
02007	FIBER-IMMUNE SUPPORT (Apple Cinnamon) • 235 grams	34.00	25.50	23.50				
01749	FLAX SEED (Organic golden) • 14 oz	11.67	8.75					
02125	FLORASSIST® GI w/PHAGE TECHNOLOGY • 30 liquid veg. caps	33.00	24.75	22.50				
01821	FLORASSIST® HEART HEALTH • 60 veg. caps	32.00	24.00	21.00				
02019	FLORASSIST® ORAL HYGIENE • 30 lozenges	18.00	13.50	12.75				
01825	FLORASSIST® BALANCE • 30 liquid veg. caps	32.00	24.00	21.00				
02000	FLORASSIST® MOOD • 60 caps	33.00	24.75	22.50				
01920	FLORASSIST® THROAT HEALTH • 30 lozenges	20.00	15.00	13.50				
01913	FOLATE HIGH POTENCY (Optimized) • 5,000 mcg, 30 veg. tablets	25.00	18.75	16.50				
01939	FOLATE (Optimized) • 1,000 mcg, 100 veg. tablets	19.00	14.25	12.75				
01842	FOLATE + VITAMIN B12 (BioActive) • 90 veg. caps	12.00	9.00	8.00				
01544	FORSKOLIN • 10 mg, 60 veg. caps	16.00	12.00	10.50				
01513	FUCOIDAN W/MARITECH® 926 (Optimized) • 60 veg. caps	36.00	27.00	24.75				
G								
02070	GAMMA E MIXED TOCOPHEROL/TOCOTRIENOLS • 60 softgels	40.00	30.00	27.00				
02075	GAMMA E MIXED TOCOPHEROL w/ENHANCED SESAME LIGNANS • 60 softgels	32.00	24.00	21.75				
01394	GARLIC (Optimized) • 200 veg. caps	24.95	18.71	15.75				
02100	GASTRO-EASE • 60 veg. caps	44.00	33.00	30.00				
SUBTOTAL OF COLUMN 5								

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	I		
*01122	GINGER FORCE® • 60 liquid caps	34.95	26.21					
01658	GINKGO BILOBA CERTIFIED EXTRACT™ 120 mg, 365 veg. caps	50.00	37.50	33.00				
00756	GLA WITH SESAME LIGNANS (Mega) • 60 softgels	19.50	14.63	13.50				
00345	(L-) GLUTAMINE CAPSULES • 500 mg, 100 veg. caps	14.95	11.21	10.13				
00141	(L-) GLUTAMINE POWDER • 100 grams	22.00	16.50	15.00				
00522	GLUCOSAMINE/CHONDROITIN CAPSULES • 100 caps	38.00	28.50	24.00				
01541	GLUTATHIONE, CYSTEINE & C • 100 veg. caps	20.00	15.00	13.50				
01669	GLYCINE • 1,000 mg, 100 veg. caps	12.00	9.00	8.10				
01411	GRAPE SEED EXTRACT W/RESVERATROL & PTEROSTILBENE 100 mg, 60 veg. caps	36.00	27.00	25.50				
01620	GREEN COFFEE EXTRACT COFFEEGENIC® 400 mg, 90 veg. caps	32.00	24.00	21.00				
00953	GREEN TEA EXTRACT (Mega) • lightly caffeinated, 100 veg. caps	30.00	22.50	18.00				
00954	GREEN TEA EXTRACT (Mega) • decaffeinated, 100 veg. caps	30.00	22.50	18.00				
H								
01074	5 HTP • 100 mg, 60 caps	27.95	20.96					
*02002	HAIR, SKIN & NAIL REJUVENATION FORM W/VERISOL® 90 tabs	32.00	24.00	22.00				
01738	HCA (Garnicia) • 90 veg. caps	17.00	12.75	11.25				
29754	HCACTIVE™ GARCINIA CAMBOGIA EXTRACT • 90 caps	30.00	22.50					
01393	HEPATOPRO • 900 mg, 60 softgels	50.00	37.50	34.50				
01527	HUPERZINE A • 200 mcg, 60 veg. caps	40.00	30.00	27.00				
00661	HYDRODERM® • 1 oz	79.95	59.96	49.00				
I								
01704	IMMUNE MODULATOR W/TINOFEND® • 60 veg. caps	17.00	12.75	11.25				
00955	IMMUNE PROTECT W/PARACTIN® • 30 veg. caps	29.50	22.13	19.91				
02005	IMMUNE SENESCENCE PROTECTION FORMULA™ • 60 veg. tabs	40.00	30.00	27.00				
01049	INNERPOWER™ • 530 grams powder	42.00	31.50					
01674	INOSITOL CAPSULES • 1,000 mg, 360 veg. caps	62.00	46.50	43.50				
01292	INTEGRA-LEAN® AFRICAN MANGO IRVINGIA 150 mg, 60 veg. caps	28.00	21.00	18.00				
30731	IONIC SELENIUM • 2 oz, 300 mcg	13.25	9.94					
01677	IRON PROTEIN PLUS • 300 mg, 100 caps	28.00	21.00	19.50				
01492	IRVINGIA W/PHASE 3™ CALORIE CONTROL COMPLEX (Optimized African Mango) • 120 veg. caps	56.00	42.00	36.00				
J, K, L								
00056	JARRO-DOPHILUS EPS® • 60 veg. caps	22.95	17.21					
01834	K W/ADVANCED K2 COMPLEX (Super) • 90 softgels	30.00	22.50	20.25				
01600	KRILL HEALTHY JOINT FORMULA • 30 softgels	32.00	24.00	21.75				
01050	KRILL OIL • 60 softgels	33.95	25.46					
00316	KYOLIC® GARLIC FORMULA 102 • 200 veg. caps	27.45	20.59					
00214	KYOLIC® GARLIC FORMULA 105 • 200 caps	28.45	21.34					
00789	KYOLIC® RESERVE • 600 mg, 120 caps	28.95	21.71					
01681	LACTOFERRIN • 60 caps	44.00	33.00	30.00				
00020	LECITHIN • 16 oz granules	18.00	13.50	12.00				
02155	LIFE EXTENSION MIX™ • 315 tablets	80.00	60.00	52.00	43.75			
02157	LIFE EXTENSION MIX™ W/EXTRA NIACIN • 315 tablets	80.00	60.00	52.00	43.75			
02154	LIFE EXTENSION MIX™ • 490 caps	90.00	67.50	58.00	47.50			
SUBTOTAL OF COLUMN 6								

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
02156	LIFE EXTENSION MIX™ POWDER • 14.81 oz	80.00	60.00	52.00	43.75		
02165	LIFE EXTENSION MIX™ • 315 tablets w/o copper	80.00	60.00	52.00	43.75		
02164	LIFE EXTENSION MIX™ • 490 caps w/o copper	90.00	67.50	58.00	47.50		
02166	LIFE EXTENSION MIX™ POWDER • 14.81 oz w/o copper	80.00	60.00	52.00	43.75		
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			
M							
01992	MACUGUARD® OCULAR SUPPORT • 60 softgels	25.00	18.75	17.50			
01993	MACUGUARD® OCULAR SUPPORT w/ASTAXANTHIN 60 softgels	44.00	33.00	30.00			
01459	MAGNESIUM CAPS • 500 mg, 100 veg. caps	12.00	9.00	7.50			
01682	MAGNESIUM (CITRATE) • 160 mg, 100 veg. caps	12.00	9.00	7.50			
02107	(EXTEND-RELEASE) MAGNESIUM • 60 veg. caps	13.00	9.75	8.75			
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 veg. caps	8.00	6.00	5.16			
00331	MELATONIN • 10 mg, 60 veg. 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 fl. 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			
02101	MEMORY PROTECT • 36 day supply	24.00	18.00	16.00			
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	33.00	24.75	22.00			
01522	MILK THISTLE (European) • 60 veg. caps	34.00	25.50	22.50			
01922	MILK THISTLE (European) • 60 softgels	28.00	21.00	18.75			
01925	MILK THISTLE (European) • 120 softgels	44.00	33.00	30.00			
01940	MIRAFORTE w/STANDARDIZED LIGNANS (Super) • 120 veg caps	62.00	46.50	42.00			
01869	MITOCHONDRIAL BASICS W/BIOPPQ® • 30 caps	44.00	33.00	30.00			
01868	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPPQ® • 120 caps	72.00	54.00	48.00			
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			
N							
01534	N-ACETYL-L-CYSTEINE • 600 mg, 60 veg. caps	14.00	10.50	9.25			
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			
02012	NATURAL CORTISOL BALANCE • 30 veg. caps	45.00	33.75	30.00			
01892	NATURAL ESTROGEN • 60 veg. tabs	38.00	28.50	25.50			
SUBTOTAL OF COLUMN 7							

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		
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			
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			
01603	NEURO-MAG® MAGNESIUM L-THREONATE • 90 veg. caps	40.00	30.00	27.00			
01602	NEURO-MAG® MAGNESIUM L-THREONATE w/CALCIUM & VITAMIN D3 • 25 grams • Lemon flavor	40.00	30.00	27.00			
01990	NITROVASC w/CORDIART™ • 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			
O							
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 (SUPER) • 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		
01991	ONCE-DAILY HEALTH BOOSTER • 60 softgels	54.00	40.50	38.00			
02113	ONE-PER-DAY • 60 tablets	22.00	16.50	15.00			
01328	ONLY TRACE MINERALS • 90 veg. caps	15.00	11.25	9.38			
P							
01789	PALMETTOGUARD® SAW PALMETTO w/BETA-SITOSTEROL 30 softgels	15.00	11.25	10.50	9.00		
01790	PALMETTOGUARD® SAW PALMETTO/NETTLE ROOT w/BETA-SITOSTEROL • 60 softgels	28.00	21.00	19.50	18.00		
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	93.46				
*01080	PECTA SOL-C® MODIFIED CITRUS PECTIN • 270 veg. caps	79.95	67.96				
01811	PEONY IMMUNE • 60 veg. caps	36.00	27.00	24.00			
**00673	PGX® PLUS MULBERRY (WellBet®) • 180 veg. caps	34.95	26.21				
01953	POMEGRANATE COMPLETE • 30 softgels	24.00	18.00	15.75			
00956	POMEGRANATE FRUIT EXTRACT • 30 veg. caps	19.50	14.63	13.16			
**01837	POMI-T® • 60 veg. caps	35.00	26.25	24.00			
01500	PQQ CAPS W/BIOPPQ® • 10 mg, 30 veg. caps	24.00	18.00	13.50	12.00		
01647	PQQ CAPS W/BIOPPQ® • 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			
00525	PROBOOST™ THYMIC PROTEIN A • 30 packets	66.60	49.95				
01441	PROGESTA-CARE® • 4 oz cream	36.39	27.29	25.72			
SUBTOTAL OF COLUMN 8							

MARCH 2017

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01928	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 • 403 grams	30.00	22.50	19.50			
01743	PROTEIN-ISOLATE (Whey) Chocolate • 437 grams	30.00	22.50	19.50			
01770	PROTEIN CONCENTRATE (New Zealand Whey) Vanilla 500 grams	30.00	22.50	19.95			
01771	PROTEIN CONCENTRATE (New Zealand Whey) Chocolate 640 grams	30.00	22.50	19.95			
01812	PROVINAL® PURIFIED OMEGA-7 • 30 softgels	27.00	20.25	18.00			
01676	PS CAPS (Phosphatidylserine) • 100 mg, 100 veg. caps	54.00	40.50	36.00			
01508	PTEROPURE® Pterostilbene • 50 mg, 60 veg. caps	32.00	24.00	22.50			
01209	PUMPKIN SEED EXTRACT (Water-soluble) • 60 veg. caps	20.00	15.00	13.50			
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			
Q, R							
01309	QUERCETIN (Optimized) • 250 mg, 60 veg. caps	22.00	16.50	15.00			
01030	RED YEAST RICE (Bluebonnet) • 600 mg, 60 veg. caps	17.60	13.20				
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 FIRMING 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			
02031	RESVERATROL W/NICOTINAMIDE RIBOSIDE (Optimized) • 30 veg. caps	42.00	31.50	27.00			
02030	RESVERATROL (Optimized) • 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 REWARDS® DECAFFEINATED ROAST GROUND COFFEE 12 oz. bag	14.00	10.50				
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			
S							
01432	SAFFRON W/SATIEREAL® (Optimized) • 60 veg. caps	36.00	27.00	24.00			
01935	SAMe (S-ADENOSYL-METHIONINE) 200 mg, 30 enteric coated tablets	25.00	18.75	16.50			
01933	SAMe (S-ADENOSYL-METHIONINE) 400 mg, 30 enteric coated tablets	36.00	27.00	24.00			
SUBTOTAL OF COLUMN 9							

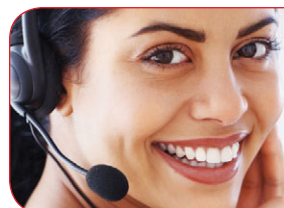
ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01934	SAMe (S-ADENOSYL-METHIONINE) 400 mg, 60 enteric coated tablets	66.00	49.50	45.00			
01740	SEA-IODINE™ • 1,000 mcg, 60 veg. caps	8.00	6.00	5.40			
01879	SE-METHYL L-SELENOCYSTEINE • 200 mcg, 90 veg. caps	11.00	8.25	7.50			
00318	SERRAFLAZYME • 100 tablets	18.00	13.50	12.00			
01938	SHADE FACTOR • 120 veg. caps	44.00	33.00	30.00			
01884	SILYMARIN • 100 mg, 90 veg. caps	14.00	10.50	9.50			
01249	SINUS CLEANSER • 4 oz. bottle	25.00	18.75				
01596	SKIN RESTORING PHYTOCERAMIDES w/LIPOWHEAT® 30 liquid veg. 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			
01649	SOY ISOFLAVONES (SUPER ABSORBABLE) • 60 veg. caps	28.00	21.00	18.75			
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			
01778	SUPER SELENIUM COMPLEX • 200 mcg, 100 veg. caps	14.00	10.50	9.00	8.25		
T							
02023	TART CHERRY W/CHERRYPURE® 60 veg. caps	20.00	15.00	14.00			
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	33.96				
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			
02003	TRIPLE ACTION THYROID • 60 veg. caps	36.00	27.00	24.00			
01803	TRI SUGAR SHIELD® • 60 veg. caps	36.00	27.00	24.00			
01386	TRUFIBER™ • 180 grams	32.95	24.71				
01389	TRUFLORA® 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			
02116	TWO-PER-DAY • 60 tablets	10.50	7.88	7.13			
02115	TWO-PER-DAY • 120 tablets	20.00	15.00	13.50			
02114	TWO-PER-DAY • 120 caps	22.00	16.50	15.00			
00326	L-TYROSINE • 500 mg, 100 tablets	13.50	10.13				
SUBTOTAL OF COLUMN 10							

		YOUR PRICE					
ITEM No.	PRODUCT	Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	QTY	Total
U, V							
01921	URIC ACID CONTROL • 60 veg. caps	24.00	18.00	16.50			
00213	VANADYL SULFATE • 7.5 mg, 100 veg. tablets	15.00	11.25	9.38			
02102	VENOFLOW • 30 veg. caps	52.00	39.00	36.00			
00408	VENOTONE • 60 caps	18.95	14.21	12.00			
01327	VINPOCETINE • 10 mg, 100 veg. tablets	18.00	13.50	10.50			
00372	VITAMIN B3 NIACIN • 500 mg, 100 caps	7.65	5.74	4.99			
02028	VITAMIN B5 • 500 mg, 100 veg. caps (Pantothenic Acid)	11.00	8.25	7.50			
01535	VITAMIN B6 • 250 mg, 100 veg. caps	12.50	9.38	8.25			
00361	VITAMIN B12 • 500 mcg, 100 lozenges	8.75	6.56	5.44			
01634	VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 60 veg. tablets	10.00	7.50	6.75			
00927	VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 250 veg. tablets	25.50	19.13	17.44			
00084	VITAMIN C POWDER (BUFFERED) • 454 grams	23.95	17.96	16.50			
01736	VITAMIN C-MAGNESIUM CRYSTALS (EFFERVESCENT) 180 grams	20.00	15.00	13.50			
01732	VITAMIN D3 • 2,000 IU, 1 fl. oz, Mint flavor	28.00	21.00	18.75			
01753	VITAMIN D3 • 1,000 IU, 90 softgels	7.00	5.25	4.50			
01751	VITAMIN D3 • 1,000 IU, 250 softgels	12.50	9.38	8.44			
01713	VITAMIN D3 • 5,000 IU, 60 softgels	10.00	7.50	6.50			
01718	VITAMIN D3 • 7,000 IU, 60 softgels	14.00	10.50	9.45			
01758	VITAMIN D3 W/SEA-IODINE™ • 5,000 IU, 60 caps	14.00	10.50	9.38			
00864	VITAMIN D3 LIQUID • 2,000 IU, 1 fl. oz	28.00	21.00	18.75			
01840	VITAMINS D AND K W/SEA-IODINE™ • 60 caps	24.00	18.00	16.50			
01863	VITAMIN E (Natural) • 400 IU, 90 softgels	28.00	21.00	19.50	18.00		
01936	VITAMIN K2 (Low dose) • 45 mcg, 90 softgels	18.00	13.50	12.00			
W							
01902	WAIST-LINE CONTROL™ • 120 veg. caps	42.00	31.50	28.50			
X, Y							
01919	X-R SHIELD • 90 veg. caps	15.00	11.25	9.75			
00409	XYLIWHITE™ MOUTHWASH • 16 oz	10.00	7.50				
Z							
01813	ZINC HIGH POTENCY • 50 mg, 90 veg. caps	7.95	5.96	5.25			
01561	ZINC LOZENGES • 60 veg. lozenges	9.00	6.75	6.00			
01961	ZINC LOZENGES (Enhanced) • 30 veg. lozenges	12.00	9.00	6.00			
**01051	ZYFLAMEND® WHOLE BODY • 120 liquid veg. caps	72.95	54.71				
BOOKS							
34002	THE 30-DAY HEART TUNE-UP by Steven Masley, MD • 2016	17.59	13.19				
33999	THE MENOPAUSE CURE by Jill D. Davey & Sergey Dzugan, MD • 2016	17.32	12.99				
33998	THE RIGHT TO TRY by Darcy Olsen • 2016	26.99	20.24				
33840	THE CRWAY® TO GREAT GLUCOSE CONTROL CD by Paul McGlothlin and Meredith Averill • 2016	189.00	189.00				
33890	FORTIFY YOUR LIFE by Tieraona Low Dog, MD • 2016	28.89	21.67				
33885	THE BLUE ZONES SOLUTION by Dan Buettner • 2015	26.00	19.50				
SUBTOTAL OF COLUMN 11							

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ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
33880	OUTSTANDING HEALTH: THE 6 ESSENTIAL KEYS TO MAXIMIZE YOUR ENERGY AND WELL BEING by Michael Galtzer, MD & Larry Trivieri Jr. • 2015	24.95	18.71				
33878	TESTOSTERONE REPLACEMENT THERAPY by Dr. John Crisler • 2015	19.99	14.99				
33877	THE TRUTH ABOUT MEN AND SEX by Abraham Morgentaler, MD, FACS • 2015	16.99	12.74				
33876	TOX-SICK • by Suzanne Somers • 2015	26.00	19.50				
33875	DOCTORED: THE DISILLUSIONMENT OF AN AMERICAN PHYSICIAN • by Sandeep Jauhar • 2015	26.00	19.50				
33874	MISSING MICROBES • by Martin J. Blaser, MD • 2014	28.00	21.00				
33873	EATING ON THE WILD SIDE • by Jo Robinson • 2014	16.00	12.00				
33872	GET SERIOUS • by Brett Osborn, MD • 2014	24.95	18.71				
33868	TOXIN TOXOUT: GETTING HARMFUL CHEMICALS OUT OF OUR BODIES AND OUR WORLD • by Bruce Lourie and Rick Smith • 2014	25.99	19.49				
33867	THE COMPLETE MEDITERRANEAN DIET by Michael Ozner, MD • 2014	19.95	14.96				
33869	UNLEASH THE POWER OF THE FEMALE BRAIN by Daniel Amen, MD • 2014	16.00	12.00				
33870	MAGNIFICENT MAGNESIUM by Dennis Goodman, MD • 2014	14.95	11.21				
DPT05	DISEASE PREVENTION AND TREATMENT, EXPANDED FIFTH EDITION (Hardcover) • 2014	69.95	39.95	36.00			
33865	THE RESTORATION OF THE HUMAN BODY [IN 7 PARTS] by Sergey A. Dzigan, MD, PhD • 2014	29.95	22.46				
33862	I'M TOO YOUNG FOR THIS • by Suzanne Somers • 2013	26.00	19.50				
33835	PHARMOCRACY • by William Faloon • 2011	24.00	9.60	8.00			
33958	THE VITAMIN D SOLUTION by Michael F. Holick, PhD, MD (Paperback) • 2013	16.00	12.00				
33838	YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY by Gary Goldfaden, MD • 2012	26.00	15.00				
33815	KNOCKOUT • by Suzanne Somers • 2009	25.99	17.00				
33809	TESTOSTERONE FOR LIFE by Abraham Morgentaler, MD • 2008	16.95	11.87				
33696	LIFE EXTENSION REVOLUTION by Philip Lee Miller, MD (Paperback)	16.00	12.00				
33805	MIAMI MEDITERRANEAN DIET WITH 300 RECIPES by Michael D. Ozner, MD, FACC, FAHA (Hardcover) • 2008	24.95	16.25				
33803	WHAT YOUR DOCTOR MAY NOT TELL YOU ABOUT DIABETES by Steven V. Joyal, MD • 2008	14.99	10.49				
SUBTOTAL OF COLUMN 12							

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Item #02022 • 60 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$28	\$21
4 bottles		\$18 each



References

1. *Altern Med Rev.* 2008 Dec;13(4):307-14.
2. *JOP.* 2005 May 10;6(3):206-15.
3. Available at: <http://www.sabinsa.com/newsroom/articles/bacillus-coagulans-probiotic-of-choice-nutracos-march-april-2012.pdf>. Accessed September 30, 2015.
4. Available at: http://www.sabinsa.com/newsroom/WhitePapers/Probiotics_For_Health_And_Well_Being_Nutra.pdf. Accessed September 30, 2015.

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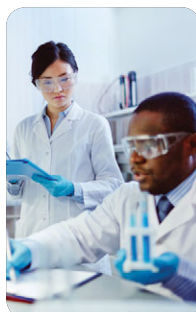
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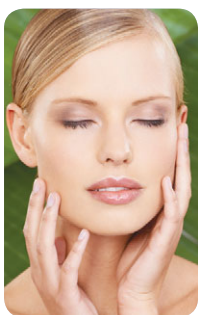
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No one has fought longer against high **drug prices** than Life Extension®. The solution to **price gouging** is to abolish archaic **regulations** that cause many **prescription drugs** to be unaffordable.



24 HOW STRESS ACCELERATES AGING

Cortisol, a **stress** hormone, accelerates aging and increases mortality. Researchers have identified natural compounds that safely reduce excess cortisol.



36 CREATE YOUTHFUL SKIN FROM THE INSIDE OUT

Ceramides are natural components found in young skin. **Ingesting** oral **plant ceramides** has been shown to rejuvenate aged skin from within.



46 HEALTHY GUMS PROMOTE LONGEVITY

Poor oral health can result in chronic disease. A novel **toothpaste** provides targeted **nutrients** to help keep teeth and gums in optimal health.



60 GOVERNMENT UNDERSTATES TOBACCO LETHALITY

A staggering number of tobacco-related deaths are not officially reported. Illnesses caused by cigarette smoking increase **healthcare costs** for all Americans. There are better ways to stop this epidemic of tobacco addiction.



73 NUTRIENTS BOOST STEM CELL FUNCTION

Rejuvenating stem cells can partially reverse tissue aging. New studies reveal natural compounds that can boost **stem cell** function.