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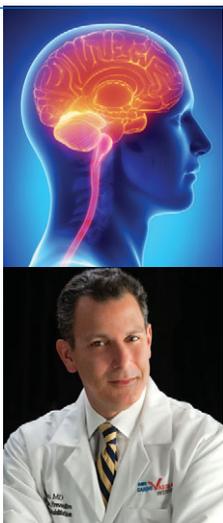
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Although short-term studies show some benefit from oral bicarbonate therapy for chronic kidney disease, long-term safety data are lacking. It turns out that eating fruits and vegetables may be a safer option and is beneficial for people with chronic kidney disease.



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



BY WILLIAM FALOON

Green Tea and Prostate Cancer

In the **October 1992** issue of this publication, I wrote an article about the cancer prevention potential of **green tea extract**. I based my article on about **100** scientific papers.

If you search the **National Library of Medicine** database today, you'll find over **1,000** studies relating to **green tea** and overall **cancer prevention**.

In **June 2005**, the **FDA** went to considerable effort to publish a position paper stating:

"...it is highly unlikely that green tea reduces the risk of prostate cancer."¹

This prompted me to write a rebuttal in the **November 2005** issue of this magazine exposing flaws and omissions in the **FDA's** report.²

The most egregious omission was a study presented at the 96th American Association for Cancer Research Meeting, where men with premalignant prostate

disease were given **600 mg** a day of a **green tea extract** supplement or placebo. The men taking **green tea extract** were **90% less** likely to progress to **prostate cancer** compared to the **placebo** group after one year.³

While this study was relatively small, the **FDA** pretended as if this favorable data did **not** exist when disseminating their report questioning whether green tea had cancer protective effects.

The **FDA** later attacked a maker of green tea leaves that dared to state on their label: "**green tea may prevent prostate and breast cancer.**"

As reported in the **July 2012** issue of this publication, a **Federal Court** ruled against **FDA's** attempt to **censor** an **anti-cancer** claim on the box of these **green tea leaves.**⁴

Move forward to **2017** and the totality of evidence supporting a role for **green tea** in **cancer prevention** has greatly expanded.



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THE HEALTH BENEFITS OF GREEN TEA

With the exception of water, Green Tea is the most commonly consumed beverage in the world, especially in China, Korea and Japan.

Green Tea may be one of the most potent disease preventing substances known. Green Tea's wide range of health benefits include reductions in the risk of heart disease, stroke, cancer and viral-bacterial infections.

In antioxidant studies, Green Tea extracts were 200 times more potent than Vitamin E in inhibiting lipid peroxidation in the brain. Brain aging is accelerated by free radical-producing lipid peroxidation.

This article is based upon 100 scientific papers describing the mechanisms by which Green Tea helps to prevent disease and, perhaps, slow aging.



If you enter “*green tea and prostate cancer*” into the [PubMed.gov](https://pubmed.ncbi.nlm.nih.gov/) database, you can review around 400 published scientific studies on this specific topic.

The preponderance of these studies shows that green tea or its polyphenol extracts may lower **prostate cancer** incidence. A meta-analysis published in **2017** of some of these studies reveals prostate cancer risk reduction in response to *higher* green tea intake.⁵

This recent meta-analysis involved a comprehensive, systematic dose-response review to evaluate the association of green tea intake with prostate cancer risk.

This analysis of green tea catechins (polyphenols) and green tea consumption suggested a reduction in **prostate cancer** incidence.

Data from this **March 2017** analysis found a dose-associated reduction of **prostate cancer** risk in men who drank **green tea**. The more green tea men drank, the lower their prostate cancer risk based on linear analysis.⁵

When this study evaluated green tea **polyphenol** (catechin) intake, there was an associated **62% reduction** in prostate cancer risk based upon three randomized controlled human trials.⁵

Moffitt Cancer Center

Located in Tampa, Florida, **Moffitt** is one of 47 **National Cancer Institute**-designated **Comprehensive Cancer Centers**.⁶ It conducts clinical trials related to cancer prevention and control. Moffitt is ranked as one of the top conventional cancer hospitals in the Southeastern United States.

A team of Moffitt researchers conducted a randomized trial to assess the safety and effectiveness of the active components in green tea to prevent prostate cancer development in men who have premalignant lesions.

According to the Moffitt researchers:

“Laboratory studies have shown that substances in green tea called ‘catechins’ inhibit cancer cell growth, motility and invasion, and stimulate cancer cell death. Green tea catechins also prevent and reduce tumor growth in animal models. Epigallocatechin-3-gallate (EGCG) is the most abundant and potent catechin found in green tea responsible for these cancer prevention effects.”⁷

The goal of the Moffitt clinical trial was to evaluate if a one-year intervention with green tea catechins could suppress prostate cancer development in men who had high-grade intraepithelial neoplasia or atypical small acinar proliferation.

The Moffitt researchers used decaffeinated **green tea capsules** that contained a mixture of catechins that predominantly consisted of **EGCG** at a dose of **200 mg** twice a day.

In this study, **green tea extract** capsules were compared to placebo pills in men with premalignant prostate lesions over a 1-year treatment period. Overall, the difference in the number of prostate cancer cases at the end of one year between the two treatment groups was not statistically significant.

However, in men who only had **high-grade intraepithelial neoplasia** at the beginning of the trial, there was a lower rate of progression to prostate cancer and development of **atypical small acinar proliferation** in the group taking **green tea extract** capsules.⁸

Atypical small acinar proliferation reflects a broad group of prostate lesions with insufficient changes in the cells to definitively diagnose prostate cancer.

In this study, men receiving the **green tea extract** had a decrease in **PSA** (prostate-specific antigen) levels, which is an indicator of reduced prostate cancer risk.

The title of the **Moffitt Cancer Center** press release was:

“Component in Green Tea May Help Reduce Prostate Cancer in Men at High Risk”⁷



While we at **Life Extension**[®] are gratified to see mainstream cancer researchers conduct this study, a **higher** dose of green tea extract may have produced better results, as was shown in an earlier **2006** study that used **600 mg** a day.

A challenge in interpreting published studies about green tea is different doses, different study durations and other factors that make it challenging to reach consistent outcomes. Most reports conclude with the researchers stating, “*More human studies are needed.*”

We at **Life Extension** don’t disagree about the value of more human studies. The undeniable fact is that more than **160,000** American men will be diagnosed with **prostate cancer** this year.⁹

If a high-potency **green tea extract** capsule could reduce these prostate cancer numbers anywhere near what some studies

indicate, this would have an enormous beneficial impact on the health of aging men.

Don’t Forget About Diet

It is important to never rely on any single nutrient to reduce cancer risk. As has been extensively written in **Life Extension Magazine**[®], one’s overall **diet** has an enormous impact on prostate and other cancer risk.¹⁰⁻¹²

The box on the next page is a summary we published in **2016** showing marked **prostate cancer risk reductions** in response to healthier eating patterns.

Reviewing these findings reveals the challenges in clinical studies that seek to assess if a single nutrient prevents cancer and other diseases. For instance, if too many men in a small study group are overeating cancer-causing foods, it could negate what effect the nutrient is really having.



Foods That Feed Prostate Cancer

A number of studies have evaluated the impact of a man's **diet** on his subsequent risk of prostate cancer. Other studies reveal that even **after** a man is diagnosed with prostate cancer, what he **eats** has a huge effect on survival outcomes and disease progression. Here are some published findings we reported on last year:

The results of a small study showed that markers of prostate cancer were reversed in patients with clinically relevant disease who made comprehensive **lifestyle changes**. Such changes included eating a diet low in fat, but rich in fruits and vegetables, along with regular exercise.¹³

The findings showed that in the **control** group, PSA levels increased, indicating progression (worsening) of their disease. In the comprehensive **lifestyle change** group, PSA levels decreased, indicating a probable regression of their prostate malignancies. Those who complied most with the healthy lifestyle changes had the greatest reductions in **PSA** blood levels.

Most interesting from this same study was a finding that took **blood serum** from the participants and added it to a petri dish of dividing human prostate cancer cells. Recall both groups consisted of men with clinically relevant prostate cancer.

Serum from the control group inhibited tumor growth by **9%**, whereas serum from the comprehensive **lifestyle group** inhibited tumor growth an astounding **70%**.¹³

This discovery indicates that **healthy lifestyle choices** result in the **blood** of a prostate cancer patient gaining powers that **impede tumor growth**.

A larger study consisted of 926 men with non-metastatic **prostate cancer** who were evaluated over a median **10-year** period.¹⁴

The diets of these men were categorized either as a "**prudent**" pattern (characterized by a higher intake of vegetables, fruits, fish, legumes, and whole grains) or as a "**Western**" pattern (characterized by a higher intake of processed foods and red meats, as well as high-fat dairy products and refined grains).

In these 926 men with clinically diagnosed prostate cancer, those who consumed the "**Western**" pattern diet had a **2.53-fold increase** in prostate cancer-specific **mortality**. This was especially evident for men who consumed the most **saturated fat** compared to **polyunsaturated** vegetable fats.¹⁴

Secondary analysis of the data by the same group of researchers found that men who consumed more than three servings of **dairy** foods daily had a **76%** higher



all-cause mortality risk and **141%** higher **prostate cancer-specific risk** compared to men who consumed less than one serving a day of **dairy** food.¹⁵

Another published study evaluated levels of **carotenoids** and **vitamin E** in the blood of men with recurring prostate cancer as evidenced by rising PSA. These men were previously treated with surgery or radiation but had **recurring** disease based on steadily elevating **PSA** blood levels. After three months, men with higher blood levels of **lutein** and **zeaxanthin** showed lower **PSA** results. After six months, men with higher blood levels of **vitamin E**, **lycopene**, and **cryptoxanthin** had lower **PSA** readings.¹⁶

The researchers who conducted this study concluded that "...**greater intake of foods containing these micronutrients might be beneficial to men with PSA-defined PrCA [prostate cancer] recurrence.**"¹⁶

A study of men residing in rural Pakistan found that frequent consumption of **red meat** and fat increased **prostate cancer** risk **3.4-fold**. This same study showed that greater consumption of **vegetables, fruit, and fluids** decreased prostate cancer risk by **79% to 91%**!¹⁷

When dietary patterns of Iranian men were evaluated in another study, there was a strong protective effect against **prostate cancer** in response to higher intakes of **fruits and vegetables**. Men in the highest intake range of plant foods like cabbage, tomatoes, apples, and pomegranate had a **67%** reduced prostate cancer risk.¹⁸

A study of Italian men looked at dietary patterns and their association with a man's odds of developing prostate cancer. Men who ate the most animal products or starchy foods had a **1.5-fold** increased rate of prostate cancer. Men whose diets contained the most vitamins and fiber had a **7%** decreased risk.¹⁹

These studies emanating from around the world consistently show prostate cancer risk reductions in response to healthy **dietary** practices. Those with pre-existing prostate cancer should pay particular attention to these findings.

In This Month's Issue...

A fascinating article in this month's issue describes new data showing those who consume **green tea** not only have lower cancer rates, but suffer fewer degenerative illnesses and live longer.

Another article reveals that nutrients like **lutein** used to protect against **macular degeneration** also improve **night vision**. We were the first to introduce lutein as a supplement back in **1985**.

The article on page 76 further corroborates what we have long known, i.e., **magnesium** deficiency worsens **insulin resistance**, an underlying cause of **type II diabetes**.

Of particular interest to all of you is the article on page 24 that describes a new beverage that can function as an "**alternative to coffee**."

Clinical studies reveal how this novel **cocoa-spearmint** drink mix boosts mental sharpness, focus, and attention, while improving microvascular circulation in the brain.

Every time you purchase a blood test, dietary supplement, or other product advertised in this magazine, you help us contribute more funds towards **human** age-reversal research endeavors.

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For longer life,



William Faloon, Co-Founder
Life Extension Foundation
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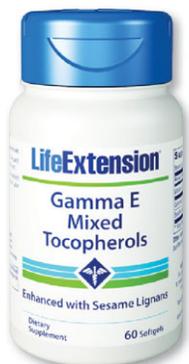




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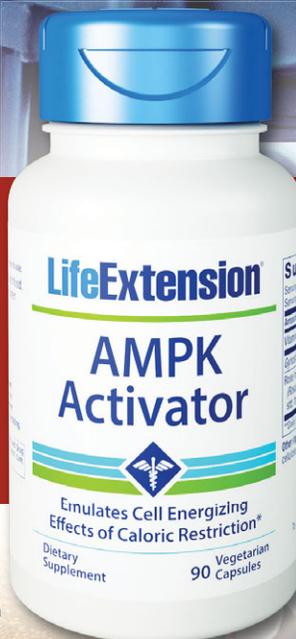
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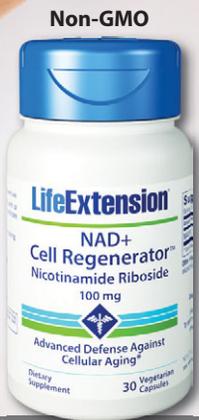
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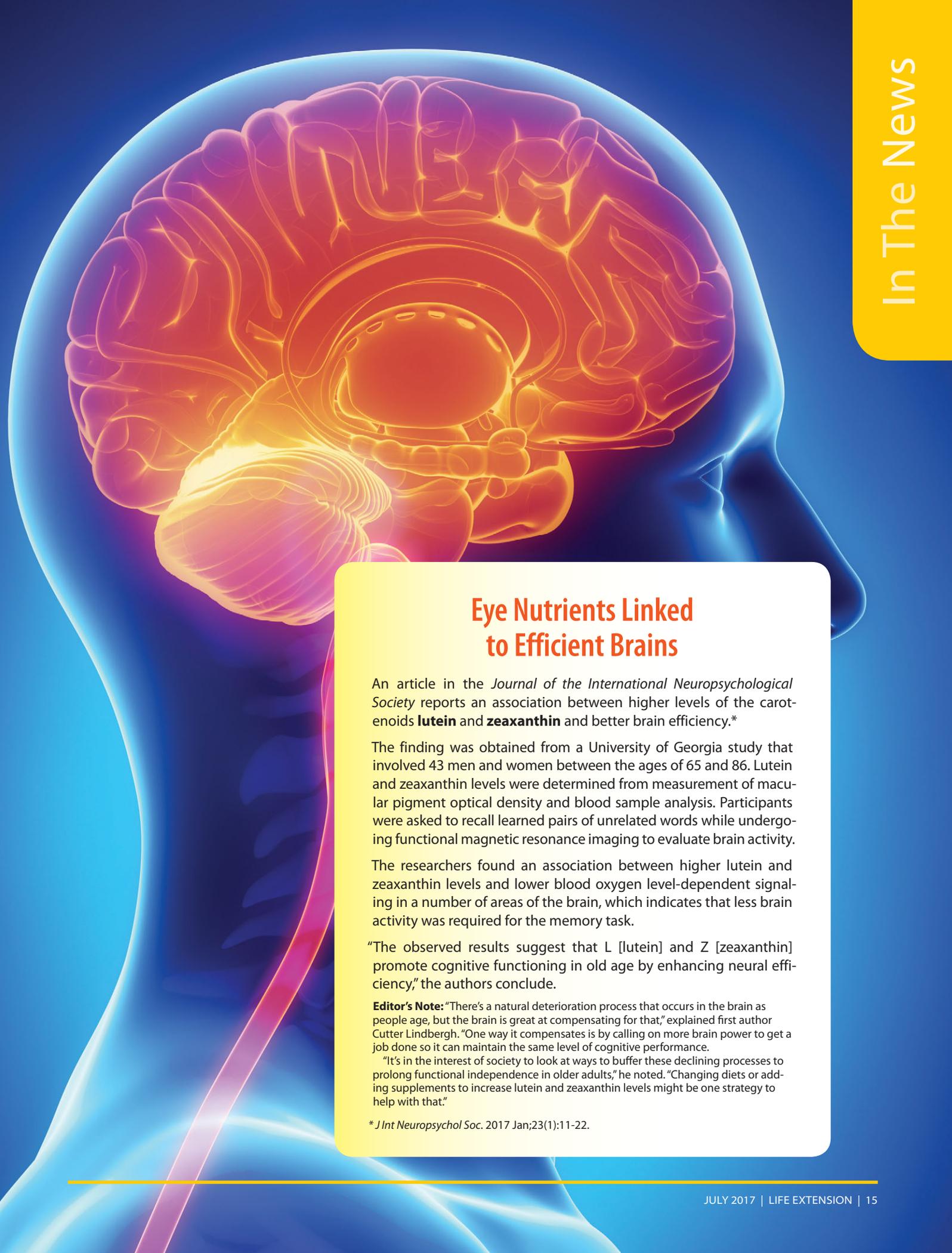


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Eye Nutrients Linked to Efficient Brains

An article in the *Journal of the International Neuropsychological Society* reports an association between higher levels of the carotenoids **lutein** and **zeaxanthin** and better brain efficiency.*

The finding was obtained from a University of Georgia study that involved 43 men and women between the ages of 65 and 86. Lutein and zeaxanthin levels were determined from measurement of macular pigment optical density and blood sample analysis. Participants were asked to recall learned pairs of unrelated words while undergoing functional magnetic resonance imaging to evaluate brain activity.

The researchers found an association between higher lutein and zeaxanthin levels and lower blood oxygen level-dependent signaling in a number of areas of the brain, which indicates that less brain activity was required for the memory task.

"The observed results suggest that L [lutein] and Z [zeaxanthin] promote cognitive functioning in old age by enhancing neural efficiency," the authors conclude.

Editor's Note: "There's a natural deterioration process that occurs in the brain as people age, but the brain is great at compensating for that," explained first author Cutter Lindbergh. "One way it compensates is by calling on more brain power to get a job done so it can maintain the same level of cognitive performance."

"It's in the interest of society to look at ways to buffer these declining processes to prolong functional independence in older adults," he noted. "Changing diets or adding supplements to increase lutein and zeaxanthin levels might be one strategy to help with that."

* *J Int Neuropsychol Soc.* 2017 Jan;23(1):11-22.



Autistic Children Benefit From Vitamin D3

Findings from a randomized trial involving children with **autism spectrum disorder** (ASD) revealed improvement in symptoms of the disorder among those who received **vitamin D3** supplementation.*

"This study is the first double-blinded, randomized, controlled trial proving the efficacy of vitamin D3 in ASD patients," the authors announced.

The trial included 85 boys and 24 girls between the ages of 3 and 10 years diagnosed with ASD. The children were randomized to receive for four months either **300 IU** of vitamin D3 per kilogram daily or a placebo. Serum 25-hydroxyvitamin D levels, autism severity and social maturity were assessed at the beginning and end of the study.

"Autism symptoms—such as hyperactivity, social withdrawal, and others—improved significantly following vitamin D3 supplementation but not after receiving the placebo," reported lead author Dr. Khaled Saad of Egypt's Assiut University.

Editor's Note: "Depending on the parameters measured in the study, oral vitamin D supplementation may safely improve signs and symptoms of ASD and could be recommended for children with ASD," the authors conclude.

* *J Child Psychol Psychiatry*. 2016 Nov 21.

Cells Programmed to Become Younger

In a study published in the journal *Cell*, researchers describe a process whereby reprogramming cells to a younger state can reverse aspects of aging.*

By inducing the expression of four genes known as the Yamanaka factors, any cell can become a pluripotent stem cell which, similar to an embryonic stem cell, is capable of dividing without limit and becoming any cell type.

Although there are dangers in unchecked cell growth, such as cancer, the potential anti-aging benefits for humans are astounding.

In the research, Yamanaka factors were induced for a short period of time in the skin cells of mice with the aging disease progeria. The remarkable results: not only did the mice appear younger, but organ and cardiovascular function improved. They also lived **30%** longer than untreated mice and did not develop cancer.

Normal older mice were also treated. This group saw improvement in the regeneration capacity of the pancreas and muscles.

“Our study shows that aging may not have to proceed in one single direction,” stated senior author Juan Carlos Izpisua Belmonte. “It has plasticity and, with careful modulation, aging might be reversed.”

Editor’s Note: “In other studies, scientists have completely reprogrammed cells all the way back to a stem-cell-like state,” said co-first author Pradeep Reddy. “But we show, for the first time, that by expressing these factors for a short duration you can maintain the cell’s identity while reversing age-associated hallmarks.”

* *Cell*. 2016 Dec 15;167(7):1719-1733.e12.

Magnesium and Chromium Fight Insulin Resistance

A study conducted by Medical College of Qingdao University has found an improvement in indicators of insulin resistance in middle-aged individuals who supplemented with **magnesium** and **chromium**.*

One hundred twenty insulin resistant subjects between the ages of 45 to 59 were divided into groups who received **160 mcg** per day of chromium, **200 mg** per day of magnesium, chromium plus magnesium, or a placebo for three months. Fasting blood glucose, fasting insulin, insulin resistance index, and T-lymphocyte messenger RNA levels of glucose transporter 4 (GLUT4, a protein that transports glucose) and glycogen-synthase-kinase-3 β (GSK-3 β , an enzyme) were determined before and after treatment.

In the group that received both magnesium and chromium, fasting blood glucose, fasting insulin, insulin resistance index, and GSK-3 β were significantly lower at the end of the study. Additionally, a **2.9-fold** increase in GLUT4 was observed only among those who received both minerals.

Editor's Note: "GLUT4 and GSK-3 β are important components in an insulin-induced signal transduction pathway that plays a key role in glucose metabolism," authors Mei Dou, PhD, and colleagues explain. "Increased expression of GLUT4 has been associated with enhanced glucose translocation from the exterior to the interior of cells in insulin-sensitive tissues and repression of GSK-3 β has been shown to enhance insulin receptor activity.

"The results of the present study suggest the therapeutic potential of combined chromium/magnesium therapy in insulin resistant individuals."

* *Asia Pac J Clin Nutr.* 2016 Dec;25(4):747-753.

Calcium Supplementation Safe for Hearts

The journal *Annals of Internal Medicine* has revealed a new evidence-based guideline from the National Osteoporosis Foundation and the American Society for Preventive Cardiology which affirms that **calcium** from supplements or food that doesn't exceed the tolerable upper intake level of **2,000 to 2,500 mg** per day is safe for the heart.*

The updated guideline is the result of a review of four randomized trials and 27 studies conducted by a team from Tufts University Medical School.

Among clinical trials there was no statistically significant difference in cardiovascular disease risk or mortality between subjects who received calcium in comparison with the placebo groups. No cohort study conclusively linked calcium intake—whether from diet, supplements or both—to cardiovascular disease or mortality from any cause.

Editor's Note: "On the basis of our assessments of internal validity, precision of risk estimates, and consistency of results from randomized trials and prospective cohort studies, we conclude that calcium intake (from either food or supplement sources) at levels within the recommended tolerable upper intake range is not associated with cardiovascular disease risks in generally healthy adults," Mei Chung, MPH, PhD, and colleagues write.

* *Ann Intern Med.* 2016 Dec 20;165(12):856-866.

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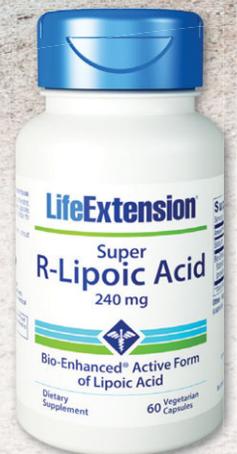


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If you have a thyroid condition or are taking anti-thyroid medications, do not use without consulting your health care practitioner.

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BY JOHN RAMIREZ

A NATURAL ALTERNATIVE TO COFFEE

Cocoa-Spearmint Drink Boosts Mental Focus

Each morning, about **64%** of adult Americans consume at least one cup of coffee.¹

The brain responds by releasing **noradrenaline** that provides a quick energy boost. This is often followed by a “**caffeine letdown**” whereby noradrenaline in the brain is depleted and subsequent coffee fails to provide sufficient mental boost.

According to a recent poll, **26%** of Americans say they are addicted to coffee.¹ Some wish they could quit for a few weeks to regain the energy-boost that coffee previously provided.

For many people, **brain fog** develops in mid-to-late afternoon. Others find it difficult to focus clearly upon awakening.

A healthy **alternative to coffee** has been shown to quickly reverse mental deficits. Those who experience brain fatigue in the morning or later in the day now have a pick-me-up alternative that also improves brain **focus** and **clarity**.

Coffee Has Beneficial Effects

Coffee beans contain **polyphenols** such as chlorogenic acid that have demonstrated health benefits.

For some people, even decaf creates discomforts like heartburn and excess nerve stimulation.

For those who don't want to reach for a cup of coffee, the combination of **cocoa** and **spearmint** is a great alternative for erasing brain fog and achieving **mental clarity**.

Natural compounds have been clinically demonstrated to improve attention and concentration by preserving brain **neurotransmitters** (such as **nor-adrenaline**).

A proprietary **spearmint extract** combined in **cocoa powder** can now be mixed into a convenient beverage. It can be used for precisely those times when we need a boost to mental sharpness, focus, and attention.

In addition, **cocoa powder** promotes micro-vascular blood flow in the brain, assuring moment-by-moment oxygenation to brain regions needed for focus and working memory.

Cognitive Benefits of Spearmint

Spearmint leaves have long been used in cuisine and to produce a soothing, refreshing scent associated with relaxation.^{2,3} Studies now show that spearmint can “wake up” the brain and boost cognitive function.

Two recent scientific studies reveal the powers of a group of **phenolic compounds** found in a proprietary extract of spearmint.^{4,5} Results showed that the spearmint improved attention, concentration, and brain function.

The first study was an open-label (no control group) pilot study among 11 healthy adults, average age 59.⁴ All subjects had self-reported memory impairment at baseline.



Subjects received **900 mg** of a **spearmint extract** once daily with breakfast for 30 days.

Subjects underwent an acute evaluation to determine the immediate effects of the supplement. The computerized cognition tests began one hour before the first dose, and again at 2.25 and 4 hours after the dose. This battery of cognitive tests measured memory, reasoning, attention/concentration, and planning.

On two acute tests of attention and concentration measuring working memory, subjects demonstrated significant improvements over baseline at 2.25 hours, and again at four hours, following a **single** dose of the **spearmint extract**.

By 4 hours, a **46% improvement** was demonstrated on one task, with a **121% improvement** on the other.

In this same study group using a test evaluating **planning abilities**, subjects showed a **39% improvement** over baseline at four hours.

Long-term tests, conducted after 30 days of daily supplementation, also showed significant overall improvements.

On a test of reasoning, subjects showed a **35% improvement** over baseline scores, and on a second test measuring attention and concentration, they showed an impressive **125% improvement**.

The researchers also measured a **48% increase** in planning ability that was reported as a “trend” toward improvement.⁴

Controlled Clinical Trial of Spearmint Extract

A larger, randomized, double-blind, placebo-controlled study followed after the first was published, which further demonstrated the brain benefits of this **spearmint extract**.

In this study, 90 subjects, average age 59—with known age-associated **memory impairment** but not dementia—were enrolled.⁵

One of the study’s target outcomes was the effect of the extract on subjects’ **working memory**. This is important because good “working memory” enables multiple memories/sensory inputs to be integrated to direct decisions and reactions.

Subjects received the spearmint extract daily with breakfast for 90 days at one of two doses, **900 mg** or **600 mg**, or placebo. The extract was standardized to contain **14.5%** rosmarinic acid, one of spearmint’s important components.

At day zero, and on days 45 and 90, subjects underwent a battery of computerized tests of cognitive performance.



What You Need to Know

Spearmint and Cocoa for Brain Performance

- That afternoon low point in mental sharpness, focus, and attention is something most of us have learned to live with.
- Some reach for another cup of coffee, but at this time of day that extra cup could cost them valuable sleep.
- Human studies have demonstrated that a group of phenolic compounds from spearmint can enhance performance on tests of working memory, the critical factor in sustaining attention and focus during problem solving.
- Cocoa powder was recently shown to significantly improve the match between brain cell activity and brain blood flow, an important requirement for crisp mental function that also correlates with resistance to developing dementia.
- Spearmint extracts have now been added to a high-quality cocoa powder to provide a boost for attention and mental focus, capitalizing on the benefits of each natural compound.
- There is no longer any reason to tolerate morning grogginess or the “four o’clock fade.” A cup of spearmint hot chocolate may be just the right prescription for sustained brain performance throughout the day.

The study results found that, by day 90, subjects taking the **900-mg** supplement dose had a significant **3-time improvement** in the quality of their **working memory** compared with **placebo** recipients. This indicates alert brain function.

The lower-dose (**600 mg**) group showed a non-significant improvement over baseline.

Another cognitive test measured spatial working memory (the ability to know where items are arranged in space, and how to use this information). People on the **900 mg/day** supplement dose demonstrated a nearly-**3-times improvement** compared to the **placebo**.

Of additional interest, the higher-dose (**900 mg**) group also showed significant improvements in their **sleep patterns**, with increased ease in getting to sleep, and better alertness and behavior following awakening.

Together these clinical trials provide compelling support for this novel **spearmint extract** on helping individuals stay focused and on-task by boosting working memory capacity—under both acute and chronic circumstances.

What is Working Memory?

Many studies of cognition report on something called **working memory**. We can think of working memory as akin to our desktops (real or on a computer). It is the “space” where we hold various bits of information while we compare them with each other, eventually developing a plan for how to respond to a given situation. All of this takes place in the blink of an eye, and we are not ever conscious of the complex interactions going on deep in our brains.

For example, a driver approaching a red light puts “red light” in working memory, and then pulls out “filed” information about what a red light means. That in turn triggers further associations, so that the driver adds “car approaching from the right,” the current speedometer indication, road conditions, and myriad other facts, and then integrates them in an orderly way, resulting in an apparently automatic response to press the brake pedal, continue scanning for traffic, a glance in the rearview mirror, and all the other mental and motor tasks required to bring the car to a safe stop ahead of the intersection.

Loss of working memory, then, impairs our ability to operate safely and efficiently in an ever-changing world, and contributes to the confusion, momentary disorientation, and uncertainty that plague so many of us as we age.

Improvements in working memory are therefore measurable gains in an individual’s ability, not only to cope, but to thrive as an independent-living adult.



All subjects had measurements of their **neurovascular coupling and cognitive function** at baseline and on days one and 30 after beginning the **cocoa** consumption.

What this study demonstrated was that, at 24 hours, subjects with impaired baseline **neurovascular coupling** had a **10.6%** improvement in neurovascular coupling, and, by 30 days, these subjects’ performance on a test requiring **attention** significantly improved.⁶

The baseline time to complete this test was **167** seconds (more than 2.75 minutes), while after 30 days of supplementation that time was just **116** seconds (less than two minutes), a **51-second gain**. Clearly, the cocoa beverage was speeding up brain function and alertness.

This study’s important contribution is that it showed how cocoa supplementation can boost brain **blood flow** in response to need (defined as neurovascular coupling), that directly affects our ability to focus and pay attention, even over the short term.

The study also found, somewhat surprisingly, that the flavanol-rich and the flavanol-poor cocoa drinks produced the same effects, showing that something other than flavanols was responsible for the observed improvements.⁶

Another study enrolled 20 young adults (average age 33) who were randomly assigned to receive **11.6 grams** of cocoa powder, a mix of caffeine and theobromine (components of cocoa), or a placebo.⁷

This study focused on the immediate, short-term cognitive effects of cocoa consumption, with cognitive function tests administered before treatment, and one and two hours after treatment.

Cocoa Improves Brain Focus and Blood Flow

Cocoa (without sugar) is a beverage with a reputation for producing comfort and relaxation.

A recent clinical study has demonstrated the benefits of **cocoa powder** on **brain focus** in humans. In addition, scientists evaluated a **microvascular** phenomenon called **neurovascular coupling**. This beneficial effect occurs when tiny blood vessels dilate (open-up) to deliver more blood to brain regions where increased cellular activity is required.⁶

Sixty adults, average age 73, participated in a double-blind, randomized clinical trial. All subjects were hypertensive or had well-controlled type II diabetes.

Subjects were randomly assigned to receive a **cocoa beverage** that was either *rich in flavanols* or *deficient in flavanols*, consuming two cups of the assigned drink daily for 30 days.

The study showed that, compared to placebo, cocoa powder significantly shortened **reaction time** and boosted **alertness** in a test that required focus, attention, and concentration.⁷

Essentially, the results suggest that the small amount of naturally occurring caffeine + bioactives of cocoa called theobromine are responsible for cocoa powder's impact on alertness and mood.

The study tested various aspects of enhanced brain functioning such as reaction time, rapid visual information processing and energetic arousal and found that all were improved with the ingestion of the cocoa powder and its components.

Together, these studies show that **cocoa** produces **near-immediate improvements** in the **cognitive** functions when we need to pay attention, to focus, and to concentrate. These are all measures of improved working memory.

Spearmint and Cocoa Effects on Brain

While many details are still under investigation, it is clear that natural compounds found in **spearmint extract** and in **cocoa powder** exert potent activity, not only on brain cells, but also on the vascular structures that support and nourish them.

Phenolics present in **spearmint** inhibit the **acetylcholinesterase** enzyme, resulting in higher concentrations of the neurotransmitter **acetylcholine**, which is critical for memory and cognitive function.⁸⁻¹⁰

In a mouse study, a spearmint phenolic, **rosmarinic acid**, was shown to provide continued **neuroprotection** for key memory centers of the brain (e.g., hippocampus and cortex), against the cellular damage caused by oxidative stress.¹¹

Even more exciting, rosmarinic acid and the other phenolics present in spearmint induce the expression of essential **growth factors** that promote formation of **new** brain cells.¹²

In particular, rosmarinic acid was shown to significantly enhance new cell growth in cultures of cells from the working memory center of the brain, the hippocampus.¹²

Cocoa also contains polyphenols that have been shown to improve performance on tests of cognition in animal models.¹³

Cocoa has the ability to improve **neurovascular coupling**, the matching of blood flow to the areas of the brain being called on to perform cognitive tasks.⁶

Unique Properties of Spearmint Extract K110-42

Modern science has unraveled many of the secrets of **spearmint**, which is rich in phenolic compounds, like rosmarinic acid.

Research reveals that such phenolic compounds inhibit an enzyme, acetylcholinesterase, that breaks down the vital memory-associated neurotransmitter acetylcholine.⁸⁻¹⁰

As a result, greater amounts of the neurotransmitter are available to brain cells in memory-intensive portions of the brain.

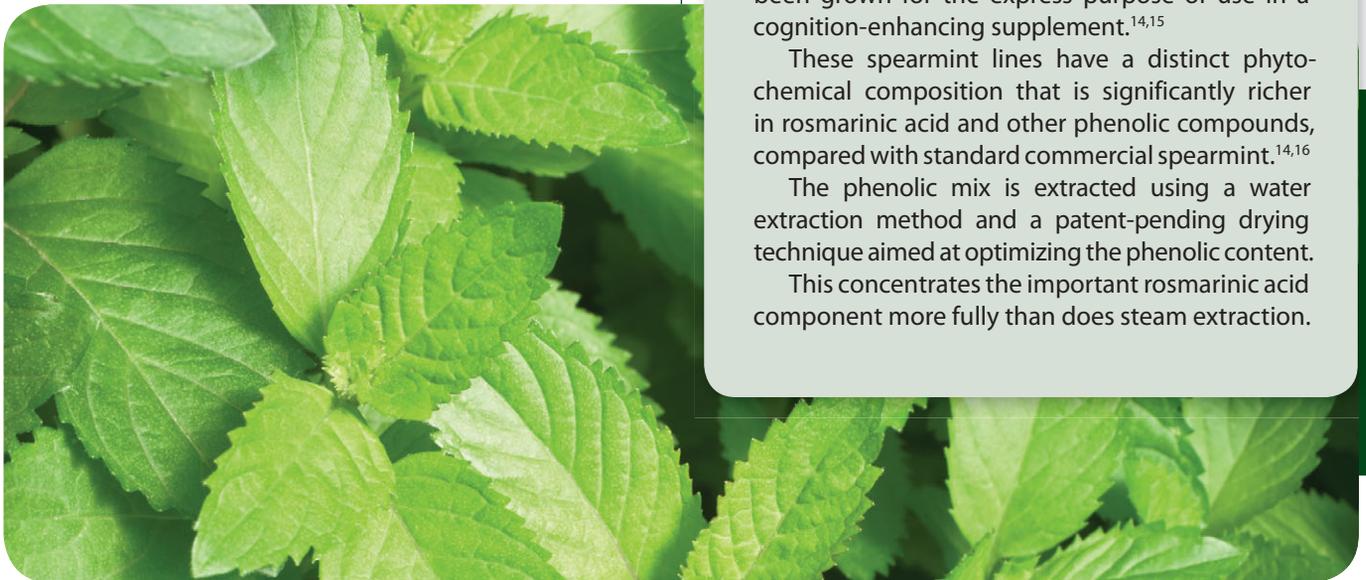
Spearmint phenolic compounds are also potent oxidative stress-preventives, helping to protect brain cells from direct oxidative damage.^{11,12}

A proprietary mix of spearmint phenolic compounds, sourced from patent-pending, non-GMO lines of spearmint, known as K110-42, has now been grown for the express purpose of use in a cognition-enhancing supplement.^{14,15}

These spearmint lines have a distinct phytochemical composition that is significantly richer in rosmarinic acid and other phenolic compounds, compared with standard commercial spearmint.^{14,16}

The phenolic mix is extracted using a water extraction method and a patent-pending drying technique aimed at optimizing the phenolic content.

This concentrates the important rosmarinic acid component more fully than does steam extraction.



Summary

Recent human studies make a compelling case for taking a powdered drink mix of **spearmint extract** and **cocoa powder**.

The combination seems ideal for use as an immediate pick-me-up beverage for those times when we could use better focus, attention, and concentration.

These plant-sourced ingredients have demonstrated brain-activating effects that provide cognitive benefits throughout the day.

For those who seek an alternative to **coffee**, or want to cut back their **caffeine** consumption, enjoying a cup of hot **spearmint-cocoa** may provide clearer thinking, better focus, and greater mental clarity. ●

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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Why is Neurovascular Coupling Important in the Brain?

Cocoa is rich in numerous phenolic and other bioactive compounds, and has recently been found to have a specific beneficial effect on **neurovascular coupling**,⁶ a measure of how well blood flow matches brain cell activity in tiny regions of the brain.¹⁷⁻¹⁹

Strong neurovascular coupling suggests that blood flow is well matched to those brain areas that need fresh oxygen and nutrients.

It is now known that those with impaired neurovascular coupling are more likely to have cognitive decline, and, furthermore, that deterioration of neurovascular coupling precedes measurable impairment in cognitive function during brain aging.^{20,21}

So, any therapy that can restore normal neurovascular coupling may indeed help to slow the onset or progression of these dreaded conditions.



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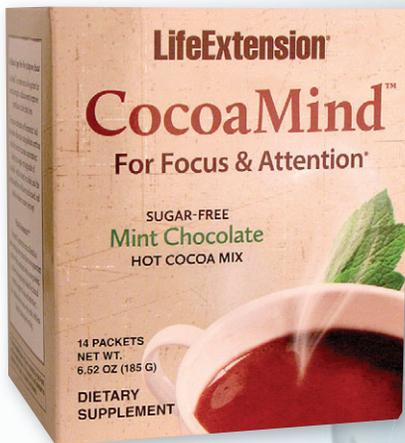
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BY SUSAN PICKENS



Improve
**Night
Vision**



Night driving becomes increasingly difficult and dangerous with age, primarily related to changes in our vision and eye structures.

Many older people restrict their driving by avoiding high-risk situations, such as night driving.¹

Here are three facts about the age-related visual loss:

- Even normal retinal aging limits our vision, especially in the **dark**.²
- Those with early **age-related macular degeneration** are **4.3** times as likely to report difficulty with night driving, **5-fold** more likely to have trouble with near vision, and **2.7** times as likely to have difficulty with glare, compared with same-age people in normal retinal health.²
- At least **43%** of people five years out from cataract surgery experience glare-related difficulties with driving.³

But one doesn't have to accept the end of independence and mobility as one's eyes age. Two new studies published in late **2016** offer hope for those of us still driving, especially at night.

Together, these studies provide new support for supplementing with **macular carotenoids**, natural pigments that we must consume in order to **shield** our vulnerable retinal cells from degeneration with age.

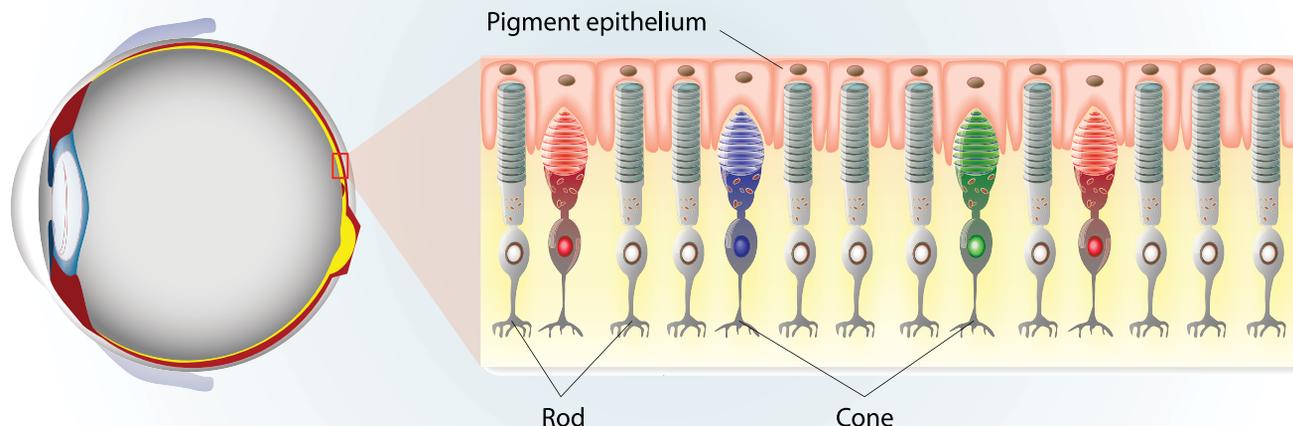
Those pigments, **lutein**, **zeaxanthin** and **meso-zeaxanthin**, have long been recognized for their importance in overall retinal protection.⁴⁻⁶

The new studies show that supplementation with these pigments provides **targeted** benefits important to **night drivers**, namely, how our eyes respond upon exposure to a bright light against a dark background.

This article will examine new studies showing lutein, zeaxanthin, and **meso-zeaxanthin** improve **photostress recovery time** and **disability glare**.

Based on these findings, it is apparent that even those of us with apparently normal vision should optimize their intake of the **macular carotenoids** like **zeaxanthin**, to see better.

Structure of the Retina



Eyes Naturally Contain Carotenoids

You might be surprised to know your eyes naturally contain **pigments** that are found in plants such as spinach, kale, corn, and collard greens.

These **macular carotenoids** consist of lutein and zeaxanthin, and *meso*-zeaxanthin pigments.

Macular carotenoids absorb **blue light**, which is one of the most damaging kinds of visible light.⁷ These carotenoids are also capable of preventing some of the oxidative stress experienced by the delicate light receptor cells in the retina. The retina is the layer of nerve cells that sends visual information from the eye to the brain.⁷

Macular carotenoids occur naturally in the **retinal pigmented epithelium** that lies just underneath the light-sensitive cells of the retina. There, they act much the way **blue-light filters** in front of computer screens do, to reduce the amount of harmful blue light that our retinas must experience.

But over time the concentration of macular and circulating carotenoids declines, partly with **aging** and partly as a result of metabolic changes.⁸⁻¹² These effects leave our eyes vulnerable to glare, and slow to recover from sudden exposure to bright lights (say, the headlights of an oncoming car).

New Findings About Macular Carotenoids

Two recent studies looked at the impact of supplemental carotenoids on the eye's natural protective layer, and its response under conditions of bright light and glare – precisely what nighttime drivers encounter.

Researchers wanted to determine the effects of **macular carotenoids** on the following measurable parameters related to **night driving**:

- **Photostress recovery** (how quickly retinal cells recover from intense exposure to bright lights)
- **Disability glare threshold** (the point at which subjects could no longer see a target through a glaring ring of light)¹³
- **Macular pigment optical density** (density of the protective pigment layer)

In the first study, scientists recruited 59 healthy volunteers, average age of 22.¹³ They divided the subjects into three groups, each receiving a daily dose of:

- Placebo
- Lutein (**10 mg**), plus zeaxanthin (**1 mg**), plus *meso*-zeaxanthin (**1 mg**)
- Lutein (**20 mg**), plus zeaxanthin (**2 mg**), plus *meso*-zeaxanthin (**2 mg**)

The supplementation continued for one year, with measurements of macular pigment optical density, photostress recovery, and disability glare made at baseline (before supplementation), and at 6 and 12 months.

The study found that **macular pigment optical density**, the measure of how much protective macular

pigment was present, *increased significantly* in both carotenoid-treated groups, compared with placebo recipients, both at six and at 12 months. Furthermore, both photostress recovery times and disability glare thresholds *improved significantly* from baseline in the supplemented groups, compared with placebo, at both follow up visits.

The study showed that supplementation with lutein, zeaxanthin, and *meso*-zeaxanthin, at either a low or a higher dose, substantially improved the protection of the volunteers' eyes. Their visual performance *improved* under conditions similar to **night driving**: the ability to see a target despite bright, glaring lights around it was enhanced by the supplementation.

Interestingly, **macular pigment optical density** was significantly associated with both the **glare** and the **photostress** responses. This study showed that increases in macular pigment optical density enhance visual performance in bright light conditions, which in turn improves night vision.¹³

Effects in Older Study Subjects

The first study showed greater **macular pigment optical density** in *young* adults is associated with better **vision** under conditions of **bright light** and **glare**.

The second study looked at **older** people and demonstrated that blood levels of macular carotenoids are closely related to their **density** in the eye (macular pigment optical density).¹⁴ The researchers added an omega-3 fatty acid (DHA) to the zeaxanthin-lutein supplement.

This study involved 20 older patients (aged 57 to 71) with either **wet macular degeneration** or chronic central serous chorioretinopathy in one eye, with the other eye still healthy.¹⁴

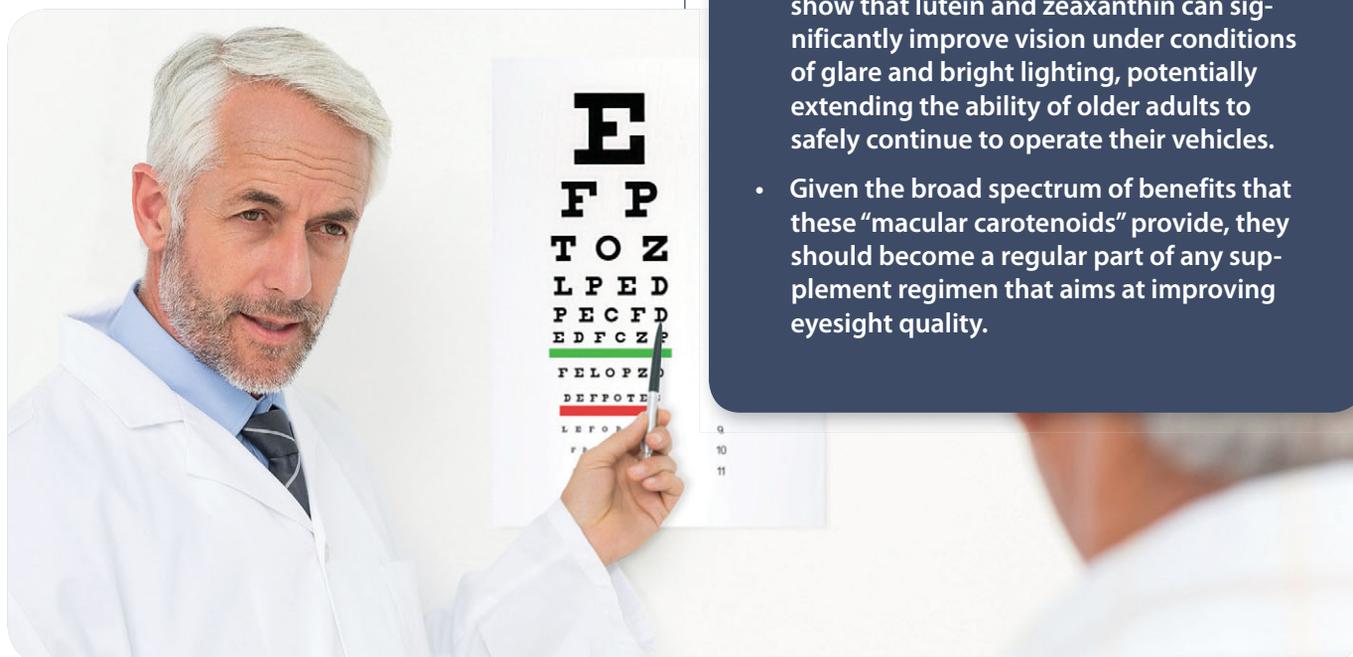
All patients in this study received the same supplement, a combination of lutein and zeaxanthin, plus the omega-3 fatty acid DHA for a 6-month period.

Visual acuity (standard vision test) and contrast sensitivity (how well the subjects could discern differences in contrast) were measured at baseline and again at one, three, and six months into the study, while macular pigment optical density was calculated at each time point using photos of the retinas.¹⁴

What You Need to Know

Carotenoids Offer Potent Eye Protection

- Nighttime driving scares many older drivers because it can be so hard to see in the face of glaring headlights and other bright lights.
- Lutein and zeaxanthin have long been known to help prevent age-related macular degeneration, the leading cause of age-related blindness.
- New studies published in late 2016 now show that lutein and zeaxanthin can significantly improve vision under conditions of glare and bright lighting, potentially extending the ability of older adults to safely continue to operate their vehicles.
- Given the broad spectrum of benefits that these "macular carotenoids" provide, they should become a regular part of any supplement regimen that aims at improving eyesight quality.



The results showed that supplementation translated into significantly **higher** macular pigment optical density at each time period. Furthermore, *contrast sensitivity* was significantly increased at three months and remained improved at the end of the six-month study.

Together, these studies demonstrate the importance of routine supplementation with **lutein, zeaxanthin**, and (optionally) *meso*-zeaxanthin as well as the **omega-3** fatty acid **DHA** for protecting aging eyes and preserving features essential to night vision.

Macular Pigment Protects Against Glaring Light

These human studies demonstrate that supplementation with lutein and zeaxanthin provides significant benefits in fighting glare and helping our eyes recover from sudden bright light exposures.

Some hints that this might be the case come from earlier studies.

It has long been known that higher levels of zeaxanthin and lutein in the retina are protective against degenerative eye disease.¹⁵ In addition, higher levels of these carotenoids in the retina are closely associated with improved visual acuity.¹⁵

Contrast sensitivity, the ability to see distinctions between varying levels of contrast, has also been associated with improved **macular pigment optical density**, which can be increased with supplementation using lutein, zeaxanthin, and *meso*-zeaxanthin.¹⁶

In **2011**, higher **macular pigment optical density** was closely associated with faster photostress recovery times and improved glare disability measurements.¹⁷

It has long been established that supplementation with lutein and zeaxanthin can be an important contributor to reducing the risk for age-related **macular degeneration**.¹⁸⁻²⁰

Two large randomized controlled trials called AREDS and AREDS2 evaluated the use of carotenoids (beta carotene in AREDS and lutein/zeaxanthin in AREDS2), and found supplementation with lutein and zeaxanthin provide the same benefits as beta carotene, but with lower risk of complications.^{21,22}

The new **2016** studies now establish that **macular carotenoids** can improve vision under conditions that apply during night driving, in addition to their known benefits for retinal function.

Combat Night Blindness With a Novel Flavonoid

Night blindness—impairment of our ability to see in the dark—occurs with age, even in the absence of ocular disease. It is caused because *rhodopsin*, a light-sensitive protein found in the **rod cells** of the retina, regenerates more slowly as we age.²³

Rod cells are the eye's most sensitive cells and they allow us to see in very dim light. Loss of rod cells is associated with night blindness or reduced vision in dim light.²⁴

Fortunately, a flavonoid compound present in many berries called **cyanidin-3-glucoside** (C3G) is particularly beneficial for night vision,^{25,26} because it stimulates the regeneration of rhodopsin.²⁷⁻²⁹





Summary

Nighttime driving can be intimidating for older drivers, largely because of the painful glare encountered in oncoming headlights and other bright light sources against the otherwise dark background. This can lead many to give up driving.

But new science released just last year now shows that lutein, zeaxanthin, and *meso*-zeaxanthin can significantly reduce the effects of glare and loss of visual sensitivity that occur when driving at night.

These findings extend previous work demonstrating the importance of these supplements for preventing deteriorating vision from age-related macular degeneration.

The new studies provide valuable insight for anyone who wants to continue to enjoy the freedom, independence, and mobility that come with driving, particularly after dark.

Daily supplementation with lutein, zeaxanthin and *meso*-zeaxanthin makes sense in the context of preserving eyesight for as long as possible. ●

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 MARTIN STEIN

Green Tea Reduces MORTALITY



Green tea is considered one of the healthiest drinks on the planet.¹

Besides its ability to improve circulation, it can help stabilize blood sugar and combat underlying causes of cancer.²⁻⁶

But it's not just that green tea is healthy—it can reduce your risk of dying!

A decade of meticulous research evaluated hundreds of thousands of people in relationship to their dietary habits. The results showed that the **higher** the consumption of **green tea** and its **polyphenol** constituents, the lower the overall risk of dying from any cause. This longevity benefit is especially pronounced in **older populations**.^{1,7}

Green tea combats many **underlying processes** that contribute to premature aging and disease.

Here, we'll evaluate compelling studies showing that green tea reduces all-cause mortality. Then we'll look at how green tea or its components help reduce the impact of specific health problems that contribute to premature death.

Green Tea Reduces Mortality

For many years, green tea and its compounds have demonstrated compelling benefits in basic science and animal studies. But until about a decade ago, there were conflicting results about those health benefits in people.^{1,8}

Now, a handful of epidemiological *cohort studies* has made the human health benefits much clearer.

In these types of studies, researchers follow a large group of people over a long period of time, recording both the health *outcome* of interest (death from all causes) and ingestion of substances (green tea consumption) that might influence the outcomes. Once the data have been collected, they are analyzed in search of statistically significant associations between ingested substance and the outcome.

By early **2017**, several large cohort studies and meta-analyses of smaller cohort studies had been completed examining the association between green tea consumption and death from all causes. While the results varied somewhat by design and by the populations being studied, they all had one thing in common: They found significant reductions in **all-cause mortality** among habitual green tea users, compared with nonusers or low-level consumers.^{1,7-11}

The largest individual studies involved populations of 40,000 to more than 160,000 subjects, and they all showed significant all-cause mortality risk reductions of **11%-18%** in those drinking the largest daily amounts of green tea (five or more cups), compared to non-green tea drinkers.^{1,7-9} Those studies also found that the more tea a person drinks, the greater the risk reduction.



A smaller but still sizable study of 14,001 older adults found a still more impressive overall risk reduction of **58%** in the highest-consumption group—a figure that rose to **68%** in women only.¹⁰

Finally, a meta-analysis pooling the results of 18 individual cohort studies found a **20%** reduction in **all-cause** mortality risk among the highest vs. the lowest category of green tea consumption.¹¹ That study also broke down the data to show that for each one-cup increment of green tea consumed daily, the risk of all-cause mortality fell by **4%**, a figure that supports the overall reductions in the preceding studies.¹¹

Together, these studies vividly illustrate the powerful ability of green tea consumption to mitigate the risk of dying from any cause.

Green Tea Fights Age-Related Diseases

How is green tea consumption capable of producing such drops in the risk of death across the board? The reason is because green tea possesses **multi-targeted** properties that combat *five fundamental processes* that underlie degenerative disease: oxidative stress, sugar-induced damage (glycation), inflammation, mitochondrial dysfunction, and disruptions to the intestinal microbiome.¹²⁻²⁰

As a result, green tea consumption has been found to have a beneficial impact on the chronic conditions responsible for killing the majority of older adults, including cardiovascular and neurodegenerative diseases, diabetes/obesity, and cancer, as well as some less-obvious factors like dental problems. Let's look at each individually.

Cardiovascular Disease

Cardiovascular disease remains the leading killer of older Americans and is therefore a major contributor to all-cause mortality. Green tea consumption is widely recognized as a means of lowering cardiovascular disease risk.

Each of the studies mentioned earlier that showed significant reductions in all-cause mortality risk also showed significant decreases in the risk of dying from cardiovascular disease. Specifically, those who consumed the largest amounts of green tea reduced their risk of dying from cardiovascular disease by **14%** to as much as **76%** (and up to **82%** for women).^{1,7-11}

These benefits are largely driven by green tea's high content of **catechins** (a type of **polyphenol**), the most abundant of which is *epigallocatechin gallate* (EGCG).²¹⁻²³

Higher levels of **green tea catechins** are associated with lower levels of triglycerides and LDL cholesterol.²² EGCG has potent protective effects against the **oxidation** of **LDL** cholesterol.²¹⁻²³ This is important because oxidized LDL cholesterol is a major risk factor for, and early contributor to, atherosclerosis and plaque formation that blocks arterial blood flow.²³

In vitro studies demonstrate that green tea's effects can protect against oxidized LDL-induced **endothelial dysfunction** (an early finding in atherosclerosis) by modulating the production of two forms of *nitric oxide* that regulate **signaling** changes in blood pressure and flow.²³

Diabesity

Diabesity (the combination of type II diabetes and obesity) is another major contributor to premature death because it sets up older adults for metabolic, cardiac, neurologic, and malignant catastrophes by feeding **inflammatory** changes throughout the body.

Green tea—and especially the EGCG contained in green tea extracts—powerfully fights many of the causes and consequences of diabesity.

A human study revealed that taking **90 mg/day** of EGCG increases the body's ability to burn fat for energy, which results in increased energy expenditure. These actions not only combat the accumulation of fat, but also help prevent inflammation caused by fat cells.²⁴ An animal study showed that EGCG can reduce body weight and shrink fat mass, in large part by stimulating the burning of fat for energy.²⁵

Other favorable effects of green tea extracts and EGCG include reductions in fat uptake and liver fat storage, reductions in markers of fat-induced chemical stress, reductions in fat-induced insulin production, and reductions in inflammation produced by fat cells.²⁶ As an added benefit, green tea extract prevents fat absorption by inhibiting the pancreatic enzymes required for its digestion in the intestine.²⁷

Neurodegenerative Diseases

Neurodegenerative diseases like Alzheimer's and Parkinson's contribute to early death, and they represent a sizable slice of the overall mortality rate.²⁸⁻³⁰

Green tea extracts and EGCG fight the causes and progression of neurodegenerative diseases in multiple ways. For example, EGCG may prevent Alzheimer's disease by reducing production of the toxic protein called **beta-amyloid**, as well as the resulting inflammation, which otherwise destroys brain cells.^{31,32}



What You Need to Know

Green Tea Reduces Mortality

- A recent barrage of studies has confirmed that people who consume green tea are significantly less likely to die from all causes put together.
- The risk of dying may be reduced by as little as 5% and as much as 76%, depending on study design and population, but the results are consistent across multiple studies.^{1,7-11}
- Green tea and its extracts exert this remarkable anti-mortality effect by reducing the risk of developing fatal chronic diseases, including cardiovascular and neurodegenerative diseases, obesity and diabetes, and cancer, as well as other conditions that predispose us to an early death, like tooth and gum disease.
- Research demonstrates that the green tea components, EGCG and others, exert these widespread effects because of very specific and focused impact on a small handful of biochemical and cellular processes.
- Green tea extracts should be considered an essential part of an overall strategy to extend life and evade disease.

Not only does this increase the survival of brain cells, it also stimulates new **brain cell** production, especially in the memory-storage hippocampal area of the brain. These actions have resulted in improved behaviors in an animal model of Alzheimer's.³²⁻³⁴

Cancer

Cancer is the second-leading cause of death in the US, which makes reducing cancer risk an important way to reduce all-cause mortality.

Green tea polyphenols have been found to suppress cancer development and its aggressiveness in in vitro studies of many different cancers, including prostate, melanoma, breast, liver, lung, brain, and bladder malignancies.³⁵⁻⁴¹

Epidemiological studies show that people who drink **five** or more cups of green tea per day have a **38%** lower risk of developing **liver cancer**, compared with nondrinkers.³⁸ In a group of men with **prostate cancer**, supplementation with **green tea extract** reduced markers of oxidative stress and increased natural protective mechanisms.³⁹

Studies of breast cancer in relation to green tea consumption are particularly compelling, and deserve specific mention.

Green tea appears to have multiple effects on breast cancers, both before and after malignancies are discovered.

Studies show, for instance, that among women diagnosed with breast cancer, those with higher green tea consumption are less likely to have tumors spread to regional lymph nodes, or to metastasize, compared with women who consume little or none of the beverage.⁴²

And green tea consumption correlates significantly with diminished recurrence rates of early breast cancers: consumption of three or more cups/day reduces recurrence risk by **31%**, and among those with the very earliest (stage I) tumors, significant risk reduction of **57%** has been observed.⁴³

Even in studies not restricted to early-stage cancers, green tea consumption has shown a dose-related impact.

One large study showed that, compared with non-tea drinkers, those consuming, yearly, 250 or more grams of green tea leaves had risk reductions of **32%** to **41%** for breast cancer occurrence, figures generally supported in a large meta-analysis study as well.^{44,45}

Lab studies shed additional light on green tea's role in breast cancer prevention.

In culture experiments, EGCG was shown to inhibit rare but deadly inflammatory stem-like breast cancer cells, which contribute to extremely poor prognoses when found.⁴⁶



And in living animals, green tea supplementation inhibited metastatic spread, and reduced the ability of metastases to grow in bones of mice with transplanted human breast tumor tissue.⁴⁷

Finally, EGCG and green tea extracts are showing signs of effectiveness in the most challenging of breast cancer types, those lacking receptors for estrogen, in which relatively safe and simple treatment with estrogen-fighting drugs is not effective.^{48,49}

Green tea extracts and EGCG act by a wide range of mechanisms to achieve these effects, including:

- Inhibiting the out-of-control cell replication cycle typical of cancers,^{36,50}
- Inducing early cell death (apoptosis) in malignant cells,^{36,50}
- Suppressing the formation of new blood vessels to nourish rapidly-growing tumor masses, resulting in their destruction,^{35,51,52}
- Reducing production of the “protein-melting” enzymes tumors use to invade between cells and spread their malignant tissue,^{41,53,54}
- Inhibiting a host of proinflammatory signaling systems, including nuclear factor kappa B, and cyclooxygenase (COX).⁵⁵

Oral Health

Oral health, tooth decay, and gum disease are rarely thought of as being associated with premature death, but that's a dangerous misconception. The alarming truth is that people with gum disease can be anywhere from **34%-72%** more likely to die of cardiovascular disease and other complications, compared to those in good oral health.⁵⁶⁻⁵⁹

Tooth loss has also been found to increase the risk of dying by up to **36%** in older adults, while preventing tooth decay and loss can reduce that risk by **46%**.^{60,61}

Green tea extracts have been found to help slow or prevent tooth decay and loss. Research shows that green tea extract can reduce wear and roughness caused by chemical erosion on tooth material.⁶²

Summary

Studies published over the past decade are substantiating that green tea and its compounds can reduce our risk of dying from all causes.

Significant green tea-associated reductions in all-cause mortality have been reported in a long series of studies in multiple populations, with effects as modest as a **5%** reduction, up to a **76%** reduction in the risk of dying.^{1,7-11}

These human longevity benefits correlate with the ability of green tea to protect cells throughout our aging bodies against degenerative alterations.

In response to **higher** intake of green tea and its extracts, studies reveal a reduced risk of developing cancer, diabetes, and vascular, neurodegenerative disorders.

Polyphenol extracts from green tea represent a **low-cost** addition to an overall strategy to prevent disease and extend life. ●

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

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

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

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

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

SAFE- GUARD Your Skin from Within

Unique *ORAL* formula provides *Polypodium leucotomos* fern extract along with nicotinamide and red orange extract.



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

Item # 01938 • 120 vegetarian capsules

For full product description and to order **Shade Factor™**, call **1-800-544-4440** or visit **www.LifeExtension.com**

This product is not a substitute for topical sunscreens.

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.



Surprising *Dangers* of Elevated Uric Acid

Elevated levels of **uric acid** are associated with **gout**, an excruciating form of arthritis.

More recent evidence demonstrates powerful correlations between high uric acid levels and some of the most **deadly** conditions of our time, including metabolic syndrome, diabetes, kidney failure, and cardiovascular disorders.¹⁻⁵

In **2016-2017**, a group of studies appeared linking uric acid elevations to bipolar disorder.⁶⁻⁹

Many people don't realize that it is possible to have **high** uric acid **without** having gout. About **21%** of Americans have elevated levels of **uric acid** (**hyperuricemia**), but only **4%** suffer from gout.¹⁰

A **2016** study highlighted a natural plant extract, called ***Terminalia bellerica***, that can effectively lower uric acid blood levels *without* the side effects associated with **prescription drugs**.¹¹

Let's look at how lowering **uric acid** blood levels is an important step not only in addressing gout, but also in helping prevent life-shortening diseases.¹¹



Terminalia Bellerica Lowers Uric Acid

Terminalia bellerica is a tree native to lower elevations in Southeast Asia, whose fruit has been used for centuries in Indian traditional medicine to treat a variety of diseases, particularly diabetes.¹²

In 2011, a component of the *T. bellerica* fruit rind, **gallic acid**, was shown to promote antidiabetic activity in a study of diabetic rats.¹² In that study, the extract lowered blood sugar levels, and, in a surprising finding, the animals' pancreases showed **regeneration** of their insulin-producing **islet cells**.

Additional beneficial effects noted in that study included reductions in serum total cholesterol, triglycerides, LDL, urea, creatinine (a measure of kidney dysfunction when elevated)—and also **uric acid**.¹²

Other studies have shown that *T. bellerica* has protective properties against oxidative stress, which in turn are thought to directly inhibit the action of an enzyme involved in the synthesis of **uric acid**.^{11,13}

Human Studies

These findings in diabetic rats led a group of Indian researchers to perform a randomized, controlled clinical trial to determine the efficacy and tolerability of a standardized extract of *T. bellerica* at lowering **uric acid** levels in humans.¹¹

For the study, 110 people with elevated uric acid received one of the following: a placebo, **40 mg** daily of the uric-acid lowering drug *febuxostat*, **500 mg** of *T. chebula* extract twice daily, or either **250 mg** or **500 mg** of *T. bellerica* standardized extracts twice daily.

After 24 weeks, the uric acid levels in the placebo recipients had *risen* significantly compared to baseline levels. In contrast, **all** non-placebo groups showed a **reduction** in uric acid levels compared to baseline and to placebo subjects.¹¹

The most effective dose of *T. bellerica* was at **500 mg** twice daily, which reduced uric acid levels by nearly **twice** as much as the lower dose.

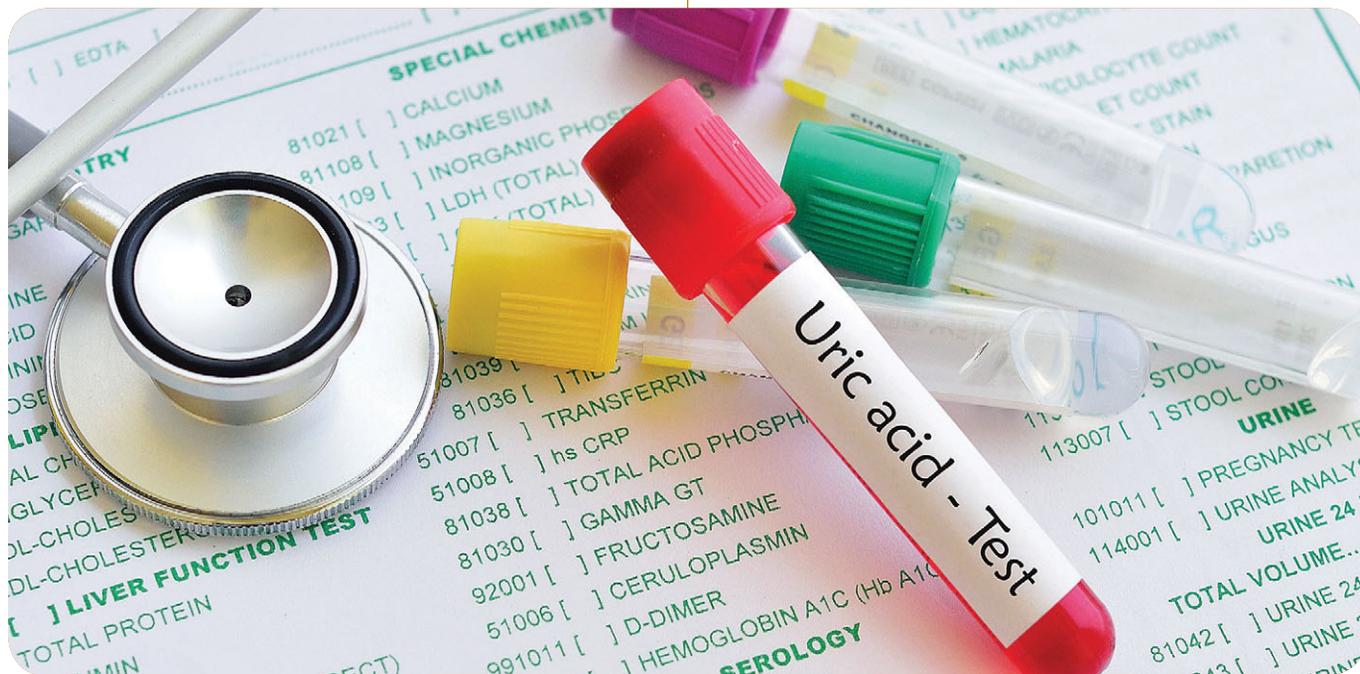
And while the *T. bellerica* treatment was only about **60%** as effective as the prescription drug **febuxostat** at reducing uric acid levels, it achieved these results without the side effects associated with this drug,¹¹ which include liver function abnormalities, rash, nausea, and joint pain.¹⁴

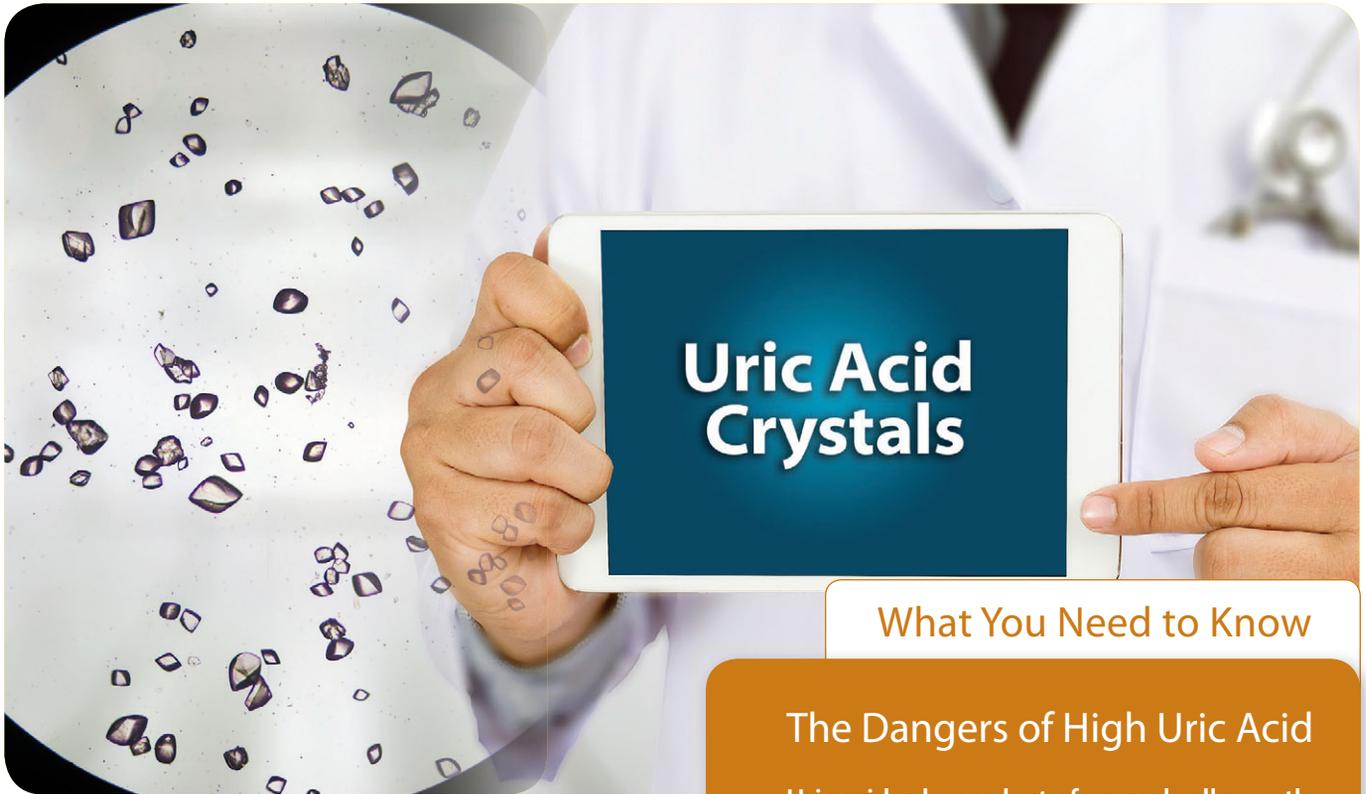
Because the other common uric acid-lowering drug, **allopurinol**, also carries a wide range of side effects—including a potentially life-threatening hypersensitivity syndrome¹⁵—*T. bellerica* supplementation offers a leap forward in safely lowering high uric acid levels while reducing risks of the conditions associated with them.

Why is it Important to Lower Uric Acid Levels?

Our bodies naturally produce uric acid when we break down and recycle the molecules that constitute DNA and RNA. An enzyme called *xanthine oxidase* is responsible for conversion of those compounds into uric acid, which is then normally excreted in the urine.

But age-related declines in kidney function lead to impaired excretion and gradual buildup of uric acid in the blood, accounting for the elevated serum uric acid levels in up to **25%** of adults.¹⁶





What You Need to Know

The Dangers of High Uric Acid

- Uric acid, a byproduct of normal cell growth and turnover, builds up in our blood-streams as we age, and is exacerbated by the modern American diet.
- While initially associated with gout, rising uric acid levels are now associated with many dangerous, lifespan-shortening conditions including cardiovascular and kidney disease, diabetes, and metabolic syndrome.
- While all of these conditions are proving challenging to treat using modern mainstream medicine, most are proving amenable to prevention with natural compounds.
- *Terminalia bellerica* is an Asian tree whose fruit contains valuable bioactive compounds long used in Indian traditional medicine.
- Extracts of *T. bellerica* have now been shown to safely and effectively reduce uric acid in humans.
- Given the anticipated benefits of across-the-board uric acid reduction, these findings make *T. bellerica* extracts an essential part of any disease-preventing strategy.

Making matters worse, a diet rich in red meats and sugars, especially fructose—in other words, the typical American diet—can sharply increase uric acid production, further exacerbating the problem.^{17,18} In fact, gout has historically been called “the disease of kings” because of its association with rich diets.¹⁹

While gout was the original disorder associated with high uric acid, more recent evidence reveals that it is associated with conditions that are far worse.

Uric acid blood levels above **8.6 mg/dL** in men or **7.1 mg/dL** in women are classified as hyperuricemia (although some laboratories and research groups use different limits).^{20,21} High uric acid levels have now been found to be significantly associated with risks for:

- Decreasing kidney function²²
- Chronic low-level inflammation, itself a major risk factor for many chronic disorders²³
- Metabolic syndrome^{18,24,25}
- Type II diabetes²⁶⁻²⁸
- A wide array of cardiovascular risks, including elevated blood pressure, heart arrhythmias, and risk of death from heart attacks and strokes.^{1,29-35}

TABLE: Risk Elevations Associated with High Uric Acid Levels

Condition	Risk Increase With Elevated Uric Acid
Kidney failure	7% per 1 mg/dL increase ²²
Chronic inflammation as measured by hs-CRP	52% ²³
Metabolic syndrome	410% ²⁵
Diabetes	18% per 1 mg/dL increase ²⁶
Unstable lipid-rich arterial plaques	143% ³⁶
Prehypertension	44% ³⁴
Atrial fibrillation (cardiac arrhythmia)	67% ³⁵
Heart muscle enlargement	96% in highest vs. lowest uric acid levels; 26% increase per 1 mg/dL elevation of uric acid ³¹
In-Hospital death from heart attack	432% ³²
Major adverse cardiac event (death, congestive heart failure, repeat heart attack, stroke)	184% ³³

The **Table** above shows elevations in risks associated with high **uric acid** levels in blood.

If recent findings are any indication, these conditions may represent only the tip of the uric acid iceberg.

For example, in **2016** and **2017**, a group of Italian researchers published several papers demonstrating that elevated uric acid levels play a role in **bipolar disorder**,⁶⁻⁸ while a **2015** study related high uric acid with **depression** in adolescents.³⁷

Several drugs can be effective for many cases of major depression. Yet very few drugs are helpful with **bipolar disorder**, a condition that’s possibly even more heartbreaking than depression.

Together, the evidence that uric acid plays a major role in so many human disorders presents an opportunity for intervention with a safe, effective, plant extract, **T. bellerica**.

Summary

Levels of uric acid rise with age, exacerbated by declining kidney function and our meat- and sugar-rich diets.

Formerly associated mostly with painful gout, we now know that uric acid elevations threaten millions more people with elevated risks for kidney disease, diabetes, metabolic syndrome, and a wide range of cardiovascular disorders.

Exciting research has revealed the potent uric acid-lowering effect of extracts from the fruits of the **Terminalia bellerica** tree, a South Asian shade tree long used in traditional medicine.

These findings suggest one more natural way to combat the risks of so many age-related disorders—and they make **T. bellerica** an important weapon in our arsenal against premature aging and death.

Uric acid is included in **Life Extension®**’s **CBC/Chemistry blood test** that costs only **\$35**. Page 62 shows the many health markers included in this ultra-low-priced blood test that you can order by calling **1-800-208-3444** (24 hours). ●

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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URIC ACID

Blood Testing

PLUS MANY OTHER MARKERS FOR ONLY \$35

Blood tests can detect underlying health issues before serious illness manifests.

Cutbacks by Medicare and private insurance companies have caused important tests to be omitted from standard panels.

The basic blood panel offered by **Life Extension**[®] provides far more tests—including **uric acid**—than what most conventional labs check for today.



For the low price of **\$35**, **Life Extension's**
CBC/Chemistry Panel provides:

Lipid Profile:

- Total cholesterol
- Triglycerides
- HDL cholesterol
- LDL cholesterol (calc.)
- VLDL cholesterol (calc.)
- Total cholesterol/HDL ratio
- Estimated Coronary Heart Disease risk

Blood Sugar:

- Fasting glucose

Liver Function:

- Alkaline phosphatase
- LDH (lactate dehydrogenase)
- AST (aspartate aminotransferase)
- ALT (alanine transaminase)
- Total protein • Albumin • Globulin
- Albumin/globulin ratio • Bilirubin

Electrolytes and Minerals:

- Sodium • Potassium • Chloride
- Calcium • Phosphorus • Iron

Kidney Function:

- Uric acid
- BUN (blood urea nitrogen)
- Creatinine
- BUN/creatinine ratio
- eGFR (estimated glomerular filtration rate)

Complete Blood Count:

- Red blood cell count
- Hemoglobin
- Hematocrit
- MCV (mean corpuscular volume)
- MCH (mean corpuscular hemoglobin)
- MCHC (mean corpuscular hemoglobin concentration)
- RDW (red blood cell distribution)
- White blood cell count
- Immune Cell Differentiation Count
- Platelet count

You can place your order by calling **1-800-208-3444** or log on to LifeExtension.com/CBC

You'll be sent a list of drawing stations in your area along with a pre-paid requisition. You can walk into the drawing station nearest you at your convenience.

Our price for all these tests is about **50% less** expensive than commercial labs, and you get your results back fast. You also have free access to our Wellness Specialists to help review your results.

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Not available in Maryland. Restrictions apply for residents of MA, NY, NJ, RI, and PA.

Support Healthy **Uric Acid** Levels



URIC ACID CONTROL



A tannin-rich extract derived from the edible fruit of the *Terminalia bellerica* tree helps keep uric acid levels within healthy range.

This patent-pending, standardized extract from *Terminalia bellerica* supports healthy expression of two critical enzymes involved in uric acid metabolism:

- **Xanthine oxidase,**
- **Inducible nitric oxide synthase (iNOS)**

The name of this standardized *Terminalia bellerica* extract is **Ayuric®**. The suggested dose is one capsule twice a day.

Uric Acid Control

Item #01921 • 60 vegetarian capsules

	Retail Price	Your Price
1 bottle	\$24	\$18
4 bottles		\$16.50 each

Ayuric® is a registered trademark of Natreon, Inc. with patents pending.

Non-GMO

For full product description and to order **Uric Acid Control**, call **1-800-544-4440** or visit **www.LifeExtension.com**

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FAST, SOOTHING RELIEF for Digestive Discomfort



EsophaCool™ neutralizes **acid** in the area of the **esophagus** where discomfort most often occurs.

With two acid-neutralizers (magnesium and calcium carbonate) along with proprietary **GutGard™** licorice extract, **EsophaCool™**'s novel formula works rapidly to provide relief to the upper digestive tract.

Natural berry/vanilla-flavored **EsophaCool™** tablets taste good *without* added simple **sugars** (only stevia and xylitol).

The suggested use is two EsophaCool™ tablets two to three times daily as needed.

EsophaCool™

Item #02009 • 120 chewable tablets

	Retail Price	Your Price
1 bottle	\$20	\$15
4 bottles		\$13.50 each



For full product description and to order **EsophaCool™**, call **1-800-544-4440** or visit **www.LifeExtension.com**

CAUTION: If taken in high doses, magnesium may have a laxative effect. Due to potential interactions, take at least 4 hours apart from prescription medications. If you have an estrogen-dependent cancer, consult a healthcare professional before use. Do not take if pregnant or lactating.

GutGard is a trademark of Natural Remedies PVT. LTD

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LIFE EXTENSION MIX™

Tablets, Capsules, or Powder...Your Choice!

Few people consistently eat enough **plant** foods to protect against common age-related decline.

Commercial multivitamins do not provide vital plant components needed for good health.¹⁻³

Life Extension Mix™ is superior to other multivitamins—partly because it provides a remarkably broad array of **fruit** and **vegetable** extracts.

Rounding out the superiority is a comprehensive list of **vitamins, minerals, amino acids**, and more.

When **Life Extension Mix™** was introduced in **1983**, it provided the most efficient way to obtain higher-potency nutrients. **Life Extension Mix™** has been upgraded over the past **33 years** to reflect many findings in the scientific literature.

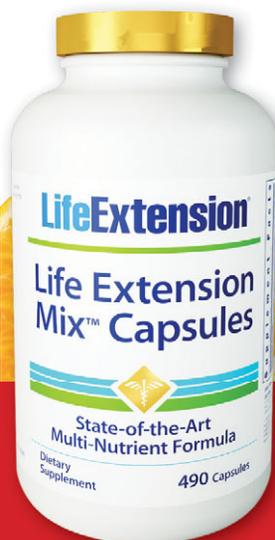
Life Extension Mix™ is the most comprehensive, high-potency daily multivitamin.



LIFE EXTENSION MIX™
315 TABLETS • ITEM #02155

	RETAIL PRICE EACH BOTTLE	YOUR PRICE EACH BOTTLE
1 BOTTLE	\$80.00	\$60.00
4 BOTTLES		\$52.00
10 BOTTLES		\$43.75

The tablet version of Life Extension Mix™ contains **190 mg** of niacin and **1 mg** of copper. There is an extra-niacin version that provides **336 mg** of niacin at no additional charge (02157). Niacin maintains healthy cholesterol, triglyceride, and fibrinogen levels in those within normal ranges. Those with underlying liver disease sometimes cannot tolerate niacin. The suggested dose is 9 tablets per day in divided doses with meals.



LIFE EXTENSION MIX™
490 CAPSULES • ITEM #02154

	RETAIL PRICE EACH BOTTLE	YOUR PRICE EACH BOTTLE
1 BOTTLE	\$90.00	\$67.50
4 BOTTLES		\$58.00
10 BOTTLES		\$47.50

The encapsulated version of Life Extension Mix™ used by many customers provides **1 mg** of copper. These capsules are also available without copper (02164). The suggested dosage is 14 capsules per day in divided doses with meals.



LIFE EXTENSION MIX™
14.81 OZ POWDER • ITEM #02156

	RETAIL PRICE EACH BOTTLE	YOUR PRICE EACH BOTTLE
1 BOTTLE	\$80.00	\$60.00
4 BOTTLES		\$52.00
10 BOTTLES		\$43.75

The powder version of Life Extension Mix™ contains **1 mg** of copper. This powder version is also available without copper (02166). The suggested dose is three scoops per day in divided doses with meals.

For full product description and to order your supply of LIFE EXTENSION MIX™, call 1-800-544-4440 or visit www.LifeExtension.com

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Contains soybeans.

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 WILLIAM FALOON



William Faloon speaking on December 8, 2016, at an age-reversal seminar in Fort Lauderdale, Florida.

AGE REVERSAL *RESEARCH UPDATE*

The background features a network of white lines connecting various medical icons (nurse cap, syringe, first aid kit, pill bottle, caduceus, water drop, heart rate, plus sign, pill) to a central glowing sphere held by a hand. The overall theme is medical research and health.



In **2015** we made a commitment to fund **research** that goes beyond mere disease prevention and treatment.

Our inspiration was ignited by findings showing consistent reversals of aging processes in experimental rodent models.¹⁻⁸

Even more compelling is the possibility that degenerative aging may be reversed in **humans**.

It has become abundantly clear that therapies may exist right now to systemically **rejuvenate** elderly people.

Researchers we are involved with have filed **Investigational New Drug** applications with the **FDA** to launch full-scale clinical trials. The goal is to statistically validate age reversal in study groups of 30-50 people.

Healthy young blood donors are being recruited to provide **plasma concentrates** that will be infused into elderly people. Based on previous animal studies,^{3,6,7} it is expected that old people receiving concentrated **young plasma** may grow **younger**.

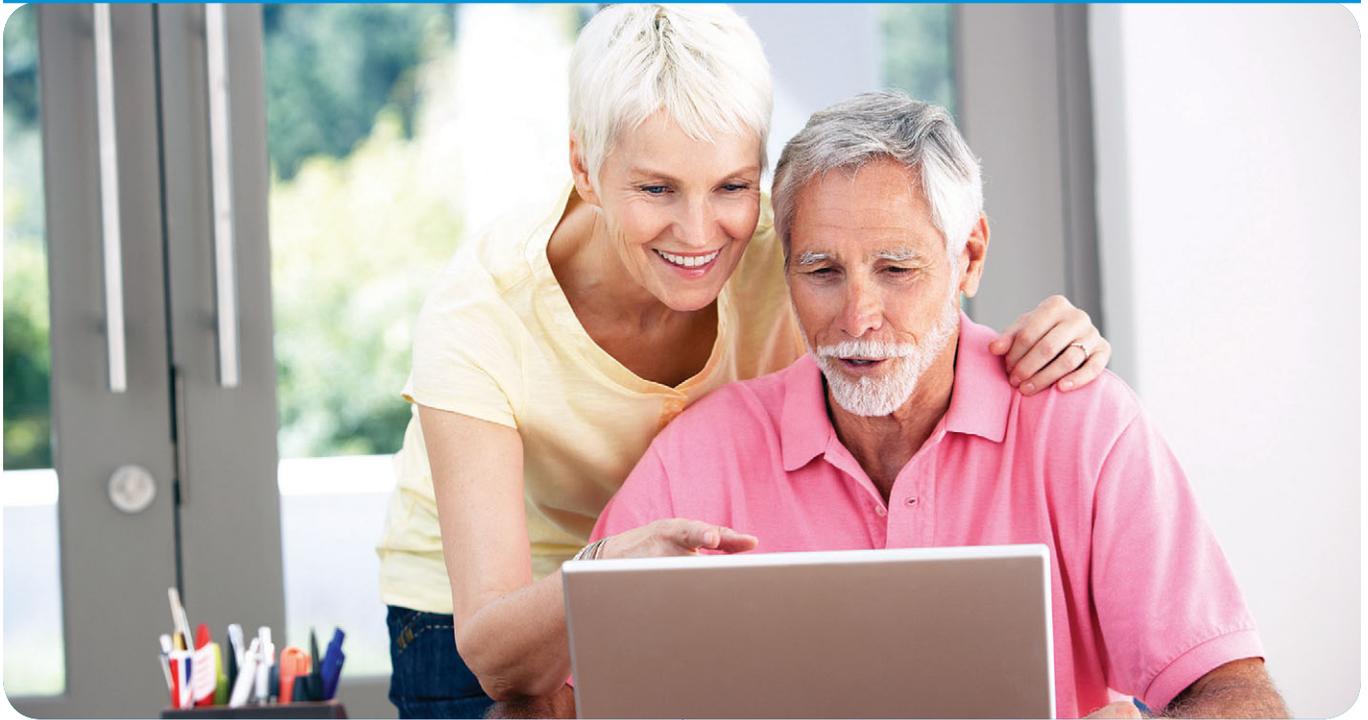
In **August 2016**, we announced the formation of **Age Reversal Therapeutics, Inc.** The company's mission was to fund human studies and rapidly make effective therapies available to those who have a short time to live.

Age Reversal Therapeutics, Inc. was only allowed to accept funds from "accredited investors," which required burdensome SEC paperwork. When the offering expired on **March 31, 2017**, there was less than **\$1 million** invested or committed. This amount was insufficient to fund the clinical studies. So **100%** of the funds we received were returned to investors.

We've also received tax-deductible **donations** of about **\$54,000** that remain in a charity account. These funds will **only** be used to fund human age-reversal projects.

Each day, over 5,000 Americans perish from age-related illnesses.⁹ Based on what's been recently discovered, many of these human lives could have been saved.

This article describes our new plan to accelerate human **age-reversal** research.



We live in an unprecedented era as it relates to our understanding of pathological aging. This knowledge enables us to investigate and measure the effects of interventions that may enable meaningful reversals of degenerative processes.

The prospect of age reversal has not gone unnoticed. Headline news routinely reports on today's **billionaires**, who are funding projects aimed at achieving longer and healthier lifespans.¹⁰⁻¹⁷

We at **Life Extension**® applaud those seeking to turn aging into a relic of the past, as was done with smallpox, polio, and other diseases.

The multiple factors involved in aging however, make it unlikely that any person alone will discover the ultimate cure. A more rational approach is to utilize the talents of like-minded activists in a united effort.

Pulling Resources Together

The new strategy initiated in **April 2017** is a "**private association**" that brings together like-minded individuals into a group that seeks to rejuvenate aging people... like you and me.

The group holds regularly scheduled conference calls whereby information is disseminated about participating in age-reversal studies, self-experimentation, investing/donating to specific projects, and raising public awareness.

This **private association** is analogous to groups formed in the past to advance a **science** when the medical profession showed little interest.

Below is an excerpt from the March 2014 edition of **Life Extension Magazine**® that describes the success of such an association:

"In 1767, a few wealthy and civic-minded citizens in Amsterdam gathered to form the **Society for Recovery of Drowned Persons**.¹⁸

Amsterdam is a city of canals and hence people fell in and drowned. It thus became the birthplace for the teaching and promotion of the resuscitation of dead persons.

Within four years of its founding, the society in Amsterdam claimed that 150 persons were saved by their recommendations.¹⁹

The **Society for Recovery of Drowned Persons** introduced scientific techniques, along with ethical changes that started a collective belief that resuscitation of the dead was possible.

Following successes of the Amsterdam society, **rescue societies** sprang up in most European capitals in the 18th century, all with the goal of finding a way of successfully resuscitating victims of sudden death. Many of these techniques (or variations of them) are used in modern emergency medical practice."

Our **private association** will seek to rescue aged humans who may not live long enough for rejuvenation therapies to be fully validated. We might save many lives, as did the civic-minded Amsterdam group 250 years ago.

Here is the game plan:

1. We believe aging is at least partially reversible using existing therapies;
2. There is a growing interest in transforming this into clinical reality;
3. Those interested in age reversal want active (not passive) engagement;
4. The most efficient way to advance age-reversal research is via a *private association* (analogous to the Amsterdam society).

Choosing a Name

I initially proposed our private group be named ***Society for Rescue of Senescent Persons***.

Others in the group suggested something more recognizable, so the name on our website is now:

Society for Rescue of Aged Persons

Please understand that this association is informal, has no bylaws, incorporating documents, or other legal structure. Its sole purpose is to unite people in ways that will accelerate the availability of rejuvenation technologies to benefit all of humanity, including members of the group.

This **private association** initially consists of activists, investors, and donors involved in our previous age-reversal initiatives. These individuals share a common desire to rejuvenate aged people.



What You Need to Know

New Age-Reversal Efforts

- **Life Extension** made a commitment in 2015 to fund age-reversal research.
- Therapies may exist right now to systemically rejuvenate elderly people.
- Researchers we are associated with have filed **Investigational New Drug (IND)** applications with the **FDA** to launch full-scale clinical trials with an eye toward statistically validating age reversal in study groups of 30-50 subjects.
- More than 5,000 Americans die each day from age-related illnesses. Based on recent discoveries, many of these lives could have been saved.
- Multiple factors involved in aging make it unlikely that any one person will find the cure.
- Our new strategy is a "*private association*," the ***Society for Rescue of Aged Persons***, which will seek to rescue older people who might otherwise not live long enough to benefit from upcoming rejuvenation therapies.
- The ***Society for Rescue of Aged Persons*** will exchange scientific information, foster strategic alliances, and support biomedical endeavors aimed at reversing degenerative aging.
- To apply for informal membership in the ***Society for Rescue of Aged Persons***, log on to: www.rescueelderly.org

How the Private Association Operates

The **Society for Rescue of Aged Persons** consists of about 1,000 individuals who have demonstrated their desire to donate, invest, and/or actively participate in advancing human age-reversal studies.

Partnerships may form within or outside the group in any manner the individual members choose to congregate. Information will be shared at the discretion of the individual members.

There are some prestigious individuals in this group who are bound by confidentiality/nondisclosure contracts. We nonetheless welcome their input and any meaningful scientific data they are permitted to disseminate. A key to our success will be open-source information sharing whenever feasible.

To reiterate, the **Society for Rescue of Aged Persons** has no formal structure. Its purpose is to exchange scientific information, foster strategic alliances, and support biomedical endeavors aimed at reversing degenerative aging.

Who Is Eligible to Join?

Since **2015**, we have asked **Life Extension** supporters for assistance to advance our mission.

We've gathered together an impressive group of scientists and activists. At this point, we are limiting this group to those who are willing to actively participate in our noble cause. We are not seeking spectators.

Readers of this publication should be assured that when any breakthrough occurs, they will be informed about where and how to access the scientifically-validated rejuvenation therapy.

To apply for informal membership in the **Society for Rescue of Aged Persons**, you can log on to:

www.RescueElderly.org

Moving Forward...

We live in an era whereby limitations on maximum lifespans may soon be vanquished.

Multiple biomedical technologies are emerging comparable to the personal computer/communication revolution that arose in **1981**.

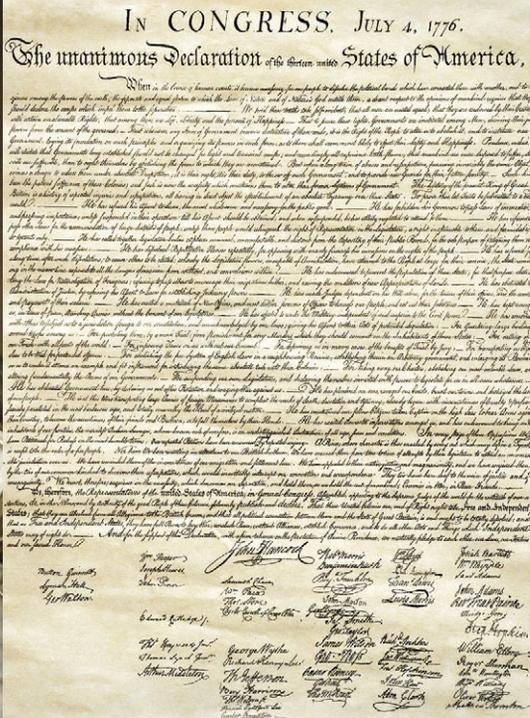
Our mission is to demonstrate statistically significant human **age reversal** so that an eruption of charitable and capitalistic forces will compete to induce even longer, healthier lifespans.

Each day our research is delayed, we grow older and more frail. There is tremendous **urgency** to move human rejuvenation projects forward.

Every time you purchase a blood test, nutrient, or other product advertised in this magazine, you help us contribute more funds toward **human** age-reversal endeavors. ●

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





Benjamin Franklin Quote:

Relating to signers of the Declaration of Independence:

“We must, indeed, all hang together or, most assuredly, we shall all hang separately.”

Paraphrase relating to age-reversal research:

“We must, indeed, all work together or, most assuredly, we will all prematurely age and die.”

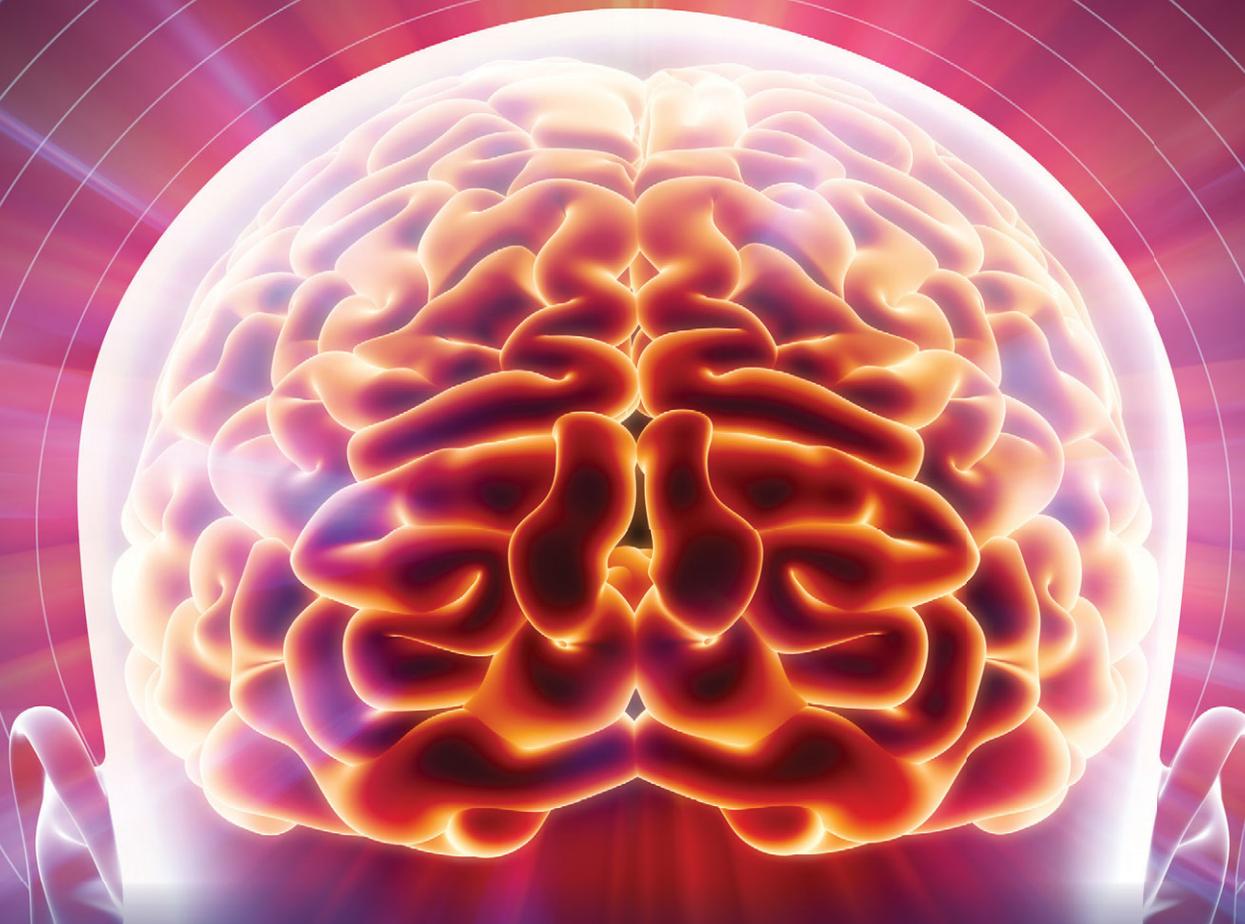
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Age-Reversal Human Projects

- Young Plasma Transfer/apheresis
- Stem cell-mobilized young plasma infusion
- Thymic Regeneration
- GDF-11 restoration
- Purge senescent cells with senolytics
- Remove cellular debris with rapamycin

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



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MAGNESIUM

Deficiency

Increases Insulin

Resistance

Magnesium is a mineral involved in over 300 metabolic processes in the body.

Most Americans do not obtain enough magnesium from dietary sources,¹ which may contribute to a variety of chronic diseases.²⁻⁴

There is a lack of involvement from the medical community in recommending magnesium. A study published in the *Journal of the American Medical Association (JAMA)* concluded that:

"...results of this study indicate that a significant number of patients with serum magnesium abnormalities are clinically unrecognized and demonstrate the efficacy of routine serum magnesium measurements."⁵

A deficit of magnesium can lead to migraines,⁶⁻⁸ bone loss,⁹ stroke,¹⁰⁻¹² heart disease,^{13,14} and many other illnesses.

What has excited researchers is the role that **magnesium** can play to decrease the risk factors for **type II diabetes**.



The Harm of Intensive Farming Practices

The **Green Revolution** occurred between the 1940s and 1960s and marked one of the largest increases of food production in history.^{15,16}

An American biologist named **Norman Borlaug** pioneered the farming technologies in this era. He received a Nobel Peace Prize in 1970 for saving over a billion people from starvation.¹⁷

While fertilization techniques developed as part of the green revolution have increased the production of food exponentially, one result has been a reduction in the amounts of minerals and vitamins in our food.¹⁸ The result? More food, less nutrients.

Since the revolution, magnesium levels in grains have declined by an average of **19.6%**. This is a concern in regions where up to **75%** of the daily magnesium intake is from grains.¹⁸

Researchers see a correlation between nutrient shortages and the use of commercial fertilizers containing **nitrogen, phosphorus, and potassium**.¹⁸ Plants require these elements to live, but some of these ingredients also compete with magnesium for absorption. Research suggests that the use of these types of fertilizers is creating unbalanced nutrition in our commercially available vegetables.



Magnesium is required for plant function. For example, it is essential for the production of chlorophyll, a green pigment responsible for photosynthesis. In some plants, magnesium activates enzymes involved in the production of **glutathione**,¹⁸ a free-radical scavenger that has been shown to play a role in multiple cellular events, including gene expression and immune response.¹⁹

Wide-Ranging Benefits of Magnesium

All the cells in our body depend on magnesium to function. It is one of the many substances necessary to produce **ATP** (energy currency of the cell) and is a necessary cofactor for many key enzymes necessary for physical functioning.^{18,20,21} It is for these many reasons that magnesium plays such a key role in keeping all systems of our body functioning optimally.

Researchers often conduct a **meta-analysis** that combines many studies to reveal common findings. This enables an assessment of the impact that specific research may have on disease.

A recent meta-analysis of over one million participants from 40 studies found that magnesium intake *reduced* the risk of stroke, heart failure, type II diabetes, and all-cause mortality.²² The following numbers show impressive reductions per **100 mg/day** increments in magnesium intake by patients:

- **7%** reduced risk of stroke
- **22%** reduced risk of heart failure
- **19%** reduced risk of type II diabetes
- **10%** reduced risk in all-cause mortality

The benefits of magnesium go even further, and new research has confirmed previous findings of its role on adequate glucose utilization and insulin signaling.

Trials on Magnesium for Glucose Improvement

Some of the most concrete research on magnesium has shown how it manages **insulin resistance**, a major cause of **type II diabetes**.²³ It is important to understand what occurs when the body becomes resistant to insulin.

Blood levels of **glucose** rise after a meal is consumed. Insulin is necessary to move the glucose from the blood and transport it inside the cells.



What You Need to Know

Magnesium

- Many Americans do not obtain enough magnesium from dietary sources.
- Industrial farming practices contribute to the problem, as they slowly deplete the soil of critical nutrients like magnesium.
- Magnesium deficits are seen in many diseases that affect the aging population.
- Recent findings show the importance of magnesium supplementation in improving glucose levels and insulin sensitivity.

When glucose is consistently elevated it causes excess insulin secretion. Chronically elevated insulin causes insulin receptors on our cells to eventually stop responding to insulin after having too much of it.

Despite the pancreas secreting more and more **insulin**, the insulin receptors in our cells do not respond. The result is an increase in blood glucose levels that can lead to diabetes and its related diseases.

Scientists have discovered very specific details of magnesium's relationship to **diabetes**. Their research has revealed that **insulin receptors** depend on **magnesium** to function properly and respond to insulin. In addition, they have discovered that high levels of **insulin** also cause an increase in the amount of urinary magnesium excreted from the kidneys, thereby reducing the body's levels of this important mineral.²⁴

This research highlights the severity of magnesium deficiency on the increased dangers of insulin resistance. What happens is a vicious cycle that reinforces this diabetic condition, in which lack of magnesium causes insulin resistance and excessive insulin reduces the levels of magnesium in the body.

A **2015** study published in the journal *Diabetes Metabolism* evaluated the efficacy of a daily dose of **382 mg** of magnesium on 116 individuals aged 30 to 65 with prediabetes and low magnesium, taken for a period of four months.²⁵

At the end of the trial, significant changes compared to placebo were seen. The researchers found an **11.6%** reduction in fasting glucose, a **8.8%** decrease in post-meal glucose, a **30.5%** decrease in insulin resistance scores, and a **26.7%** decrease in triglycerides. This led authors to conclude that:

*"...magnesium supplementation reduces plasma glucose levels, and improves the glycemic status of adults with prediabetes and hypomagnesaemia [low magnesium]."*²⁵



Magnesium Reduces Pancreatic Cancer Formation

It is known that **insulin resistance** is associated with a higher risk of **pancreatic cancer**. In an estimated **80%** of cases, those with pancreatic cancer have diabetes or some form of glucose intolerance when they are diagnosed.^{26,27}

Another statistic reveals that when type II diabetes is first diagnosed there is a **four- to seven-fold increased** risk of developing pancreatic cancer within three years.²⁸

The relationship between diabetes and pancreatic cancer is not always the first thought in doctors' minds when someone presents with prediabetes or diabetes. Medical management of diabetes should not just focus on current glucose levels but preventing the occurrence of pancreatic cancer over the long term.

The *British Journal of Cancer* published a revealing study evaluating magnesium's role in pancreatic cancer. The researchers followed over 66,000 men and women aged 50 to 76 over a course of eight years. During that time, 151 participants developed pancreatic cancer.²⁹

The results of the study revealed that for every **100 mg** drop per day in **magnesium** consumption, the risk of developing **pancreatic cancer** **increased** by **24%**.

In addition, the researchers calculated the risks of developing pancreatic cancer for those whose intake of magnesium were suboptimal according to the government's recommended daily allowance (**420 mg** a day for males and **320 mg** a day for females).

If intake of magnesium was suboptimal, which is determined as **75%-99%** of the government's recommended daily allowance (RDA), then the risk of developing pancreatic cancer was **42% higher** compared to intake that was equal to or greater than the RDA. For those who had an intake of less than **75%** of the government's RDA there was a **76%** higher risk of developing pancreatic cancer compared to intake that is equal to or greater than the optimal intake.

What this tells us is that the medical community should embrace and utilize the latest research into magnesium's multiple benefits. This would go a long way to reduce the epidemic of diseases resulting from magnesium deficiency.

Summary

Research supporting magnesium's role in reducing diabetic risk and its associated diseases is robust.

Many Americans do not obtain enough magnesium from dietary sources.¹

Intensive farming practices have led to a soil deficiency of magnesium. The decreased mineral content in the soil makes it challenging to obtain optimal levels from food sources alone.

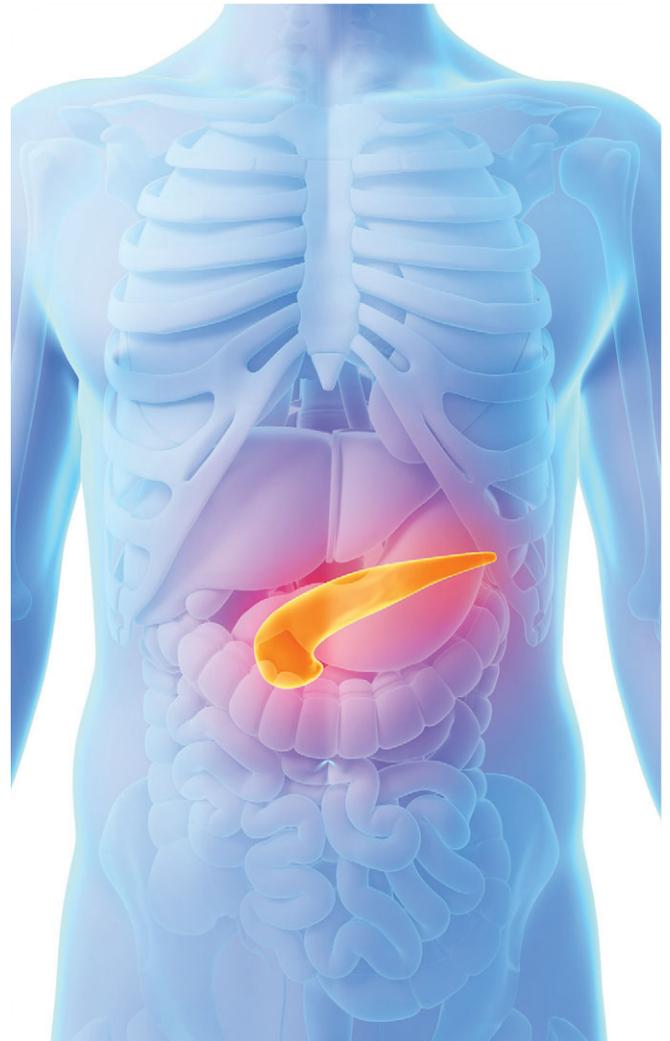
If current trends continue, **33%** of adults in the US will have type II diabetes by the year 2050.³⁰

Magnesium supplementation represents a low-cost method to insure against deficiency of this vital mineral. ●

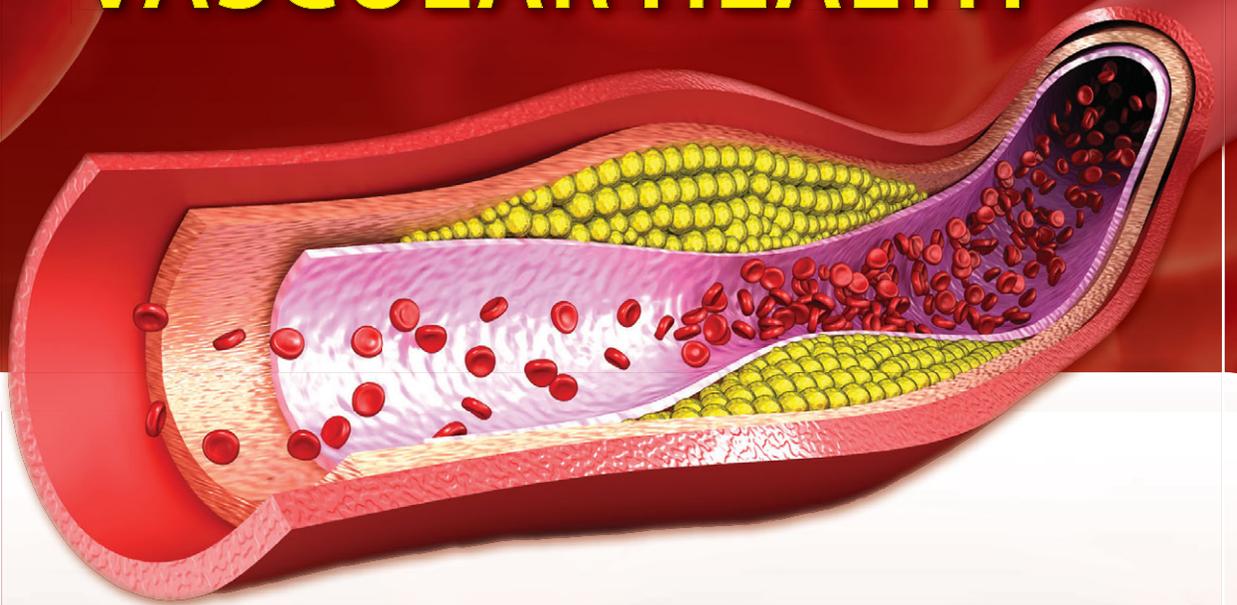
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JOEL K. KAHN, MD, FACC

Professor of Medicine,
Wayne State University, and author
of *The Whole Heart Solution*

BY JON VANZILE

Every year or so, it seems like medicine opens a new front in the battle against heart disease, one that will supposedly turn the tide against the leading cause of mortality among American adults. It might be a new device, new and better pharmaceuticals, more advanced diagnostics, or a new surgical approach.

Yet no matter how much hope greets these new developments, **cardiovascular disease** continues its deadly rampage through the American population, killing more than 600,000 people every year, according to the Centers for Disease Control and Prevention.

Why?

Cardiologist Joel K. Kahn, MD, FACC, thinks he has the answer.

"We have stalled in the fight against heart disease," he says. "We aren't addressing many of the underlying causes of heart disease. The current model is not addressing nutrition, supplements, or lifestyle."

Instead of waiting for mainstream cardiology to catch up to the available research, Dr. Kahn has forged ahead, building a thriving medical practice and web of supportive programs that he says can help patients reverse heart disease and reduce arterial age.

His book, *The Whole Heart Solution*, lays out more than 70 heart-healthy steps everyone can take to reduce their risk of cardiac disease. This program was adapted into a 2016 PBS special that aired across the country on Thanksgiving weekend.



JOEL K. KAHN, MD, FACC

“My program is built around the idea that cardiovascular disease progresses silently and can be reversed,” he said. “It’s been very well received.”

Dr. Kahn’s transformation into “America’s Heart Healthy Doc” was no accident—it began a decade ago, when he “got fidgety” in his practice.

“I was doing the same five things over and over,” he says. “I knew there was more.”

Before long, he had subscribed to *Life Extension Magazine*® and launched himself down the road to becoming one of America’s leading integrative cardiologists. Along the way, he became one of the first cardiologists in the country to complete coursework on integrative cardiovascular medicine through the American Academy of Anti-Aging Medicine (A4M).

Today, he is continuing his push to prevent one million heart attacks by spreading the word that blood vessel disease is not an “inevitable” part of aging and that it can be reversed.

A New Paradigm in Thinking About Heart Disease

The current mainstream model for diagnosing and treating heart disease is built around the huge Framingham Heart Study, which was first launched in 1948 as a population health study of 5,209 people in Framingham, Massachusetts. Since then, the study has been expanded to include new populations and generations and used to create a popular “risk calculator” that most mainstream cardiologists use to determine their patients’ risk for suffering a heart attack. This risk score is then used to guide treatment decisions like prescribing statin medications or hypertensives to reduce blood pressure.

Unfortunately, says Dr. Kahn, decades of experience show that this approach is hopelessly outdated.

“Framingham just isn’t adequate anymore,” he insists. “It doesn’t address inflammatory markers, environmental stressors,

and all the other factors we know about. We’ve stalled because of the complexity of cardiovascular disease.”

Instead, Dr. Kahn recommends using a more complete model like the one proposed by **Life Extension**® in 2009, which graphically depicts a heart with 17 daggers aimed at it, each representing a proven risk for heart disease. These include low blood levels of omega-3 fatty acids; elevated C-reactive protein; excess insulin; deficiency in nitric oxide, vitamin K, and vitamin D; hormone imbalance, excess homocysteine; and other advanced measures.

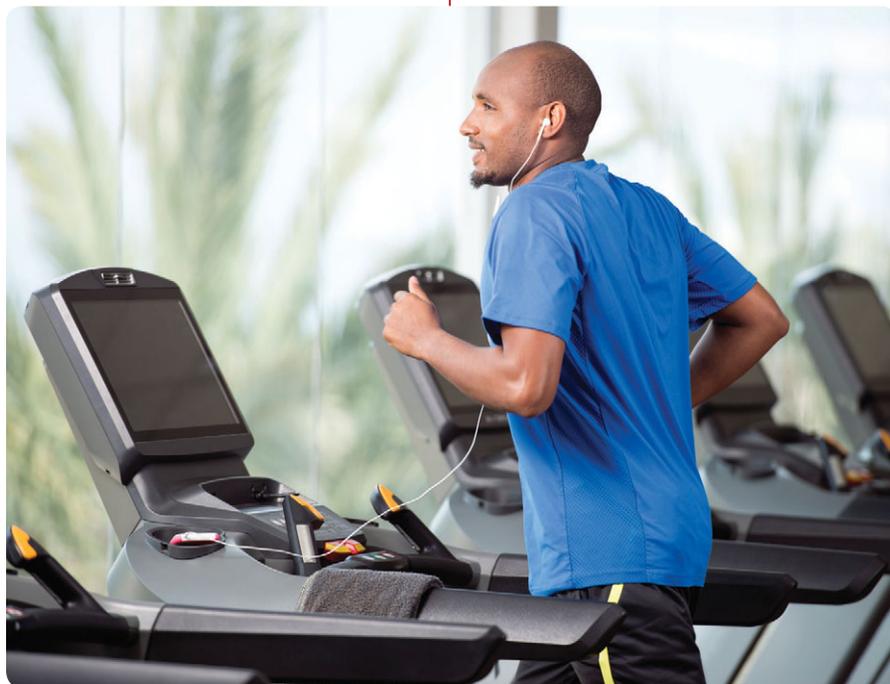
“The multi-dagger graphic of heart disease risk factors really caught my eye because it goes way beyond the Framingham risk factors,” he said. “Although the development of cardiovascular disease is complex, if you’re armed with knowledge, you have a much better chance to identify risk factors and create a prevention program.”

Dr. Kahn has transformed his practice around this concept, with astonishing results. He begins his relationship with new patients by first taking a thorough medical history, then ordering a comprehensive battery of tests to build a database that he uses to estimate arterial and vessel age.

“We use advanced lipid testing, because a routine lipid panel is not enough,” he says. “We check apolipoprotein A and others. We also check thyroid hormone, insulin resistance, ferritin levels, urinary micro albumin, omega-3 fatty acids, oxidized LDL, and various inflammatory markers.”

He also uses the carotid intima-media thickness test as a measure of artery health and relative age.

All of this information is rolled into a comprehensive therapeutic program that almost always





includes nutrition and diet recommendations, exercise, supplements, and, when appropriate, pharmaceuticals.

“We’ll see tremendous improvements in labs and decreases in carotid artery thickness,” he reports. “This is extremely exciting. Arterial age reflects total health, and physicians can be taught to reverse arterial age.”

Dr. Kahn’s Program for Younger Arteries

How is it possible to reverse a disease that’s considered chronic? For Dr. Kahn, it begins with the basics: lifestyle, lifestyle, lifestyle.

Dr. Kahn himself has been a “plant-based human” for decades and recommends that his patients eat a plant-based or Mediterranean diet. He strongly recommends that everyone who comes into his office watches *Forks Over Knives*, a documentary film that says most degenerative diseases can be reversed or prevented by avoiding animal protein and processed food.

He also recommends moderate exercise, which means 30 to 40 minutes of exercise every day. He’s quick to point out this does not mean that everyone needs to train for marathons or sign up for the nearest cross-fit class. Instead, he recommends gentler forms of exercise like tai chi or yoga.

“My credo is extreme in diet, moderate in exercise, and abundant in love,” he said. “Live well, eat well, exercise well, sleep well, and sweat a bit.”

Finally, Dr. Kahn is a strong believer in the power of supplements to help reduce disease risk, improve markers of heart health, and balance out dietary insufficiencies. He has a few particular favorites among **Life Extension’s** products.

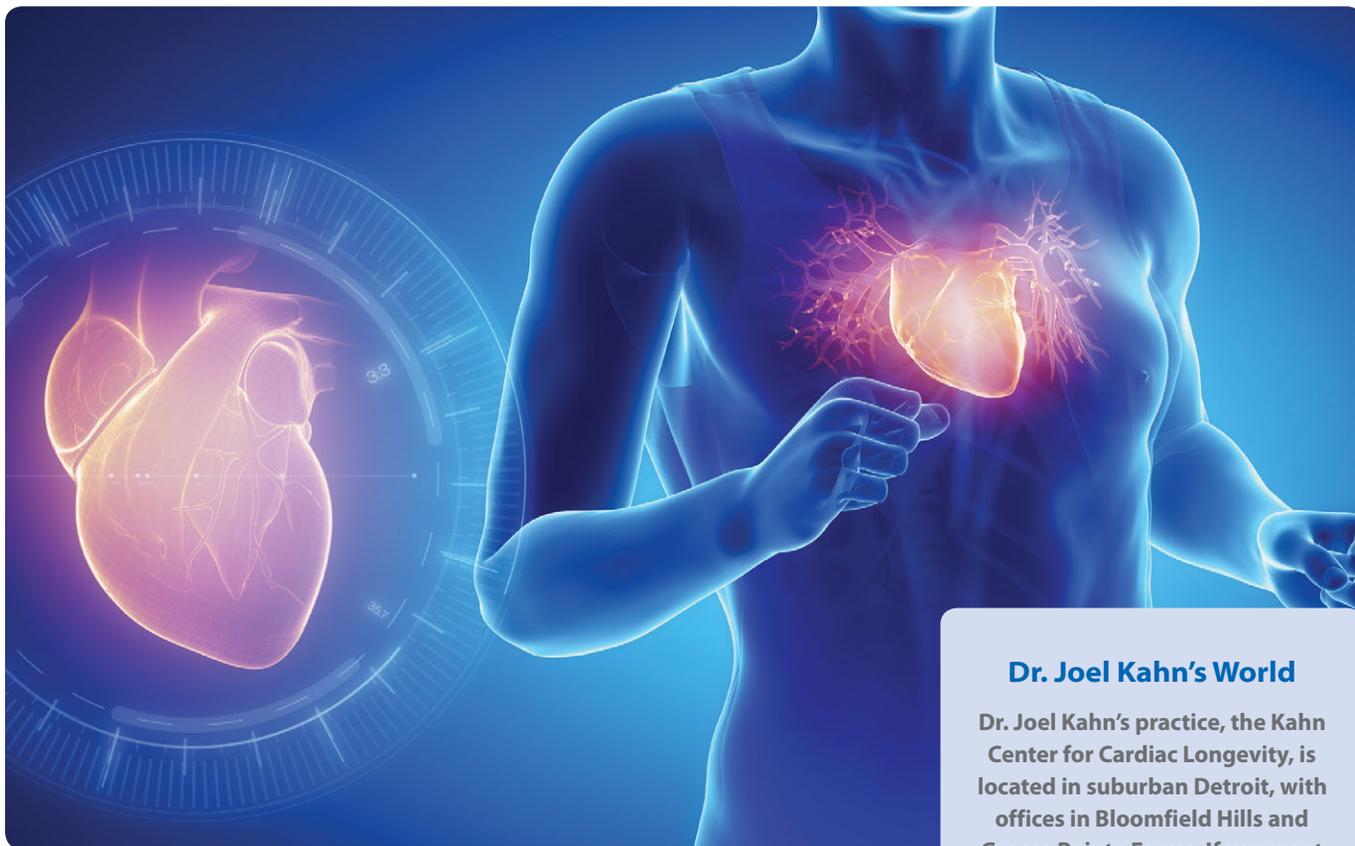
“I’m fascinated by the **Arterial Protect** formula and its potential of diminishing arterial plaque,” he says, mentioning **Life Extension’s** heart-healthy blend of French maritime pine bark extract and gotu kola extract.

Dr. Kahn personally takes Mitochondrial Energy Optimizer,

which contains a blend of ingredients that are designed to support the mitochondria. “I also recommend this for many patients, especially patients with congestive heart failure,” he says.

Some of his other recommended supplements include:

- For hypertension, which he identifies as “probably the toughest” cardiac condition to treat naturally, Dr. Kahn often recommends olive leaf, magnesium, and L-taurine.
- To combat widespread deficiencies in omega-3 fatty acids “even among people who believe they are eating healthy,” Dr. Kahn frequently recommends supplementing with a high-quality omega-3 fatty acid, depending on the results of blood tests. He regularly monitors his patients’ blood levels of omega-3 fatty acids and adjusts dosages to keep them in the optimal range.
- He recommends vitamin K2 to all of his patients, remarking that, “I’m waiting for the definitive study, but so far I’m impressed.”
- Based on studies showing reversal of atherosclerosis, he often prescribes garlic extract.
- For vegans and people who generally avoid animal protein, he suggests L-taurine, creatine, and vitamin B daily.
- If homocysteine levels are high, Dr. Kahn says patients should take a B-complex vitamin to bring them down.
- A daily multivitamin formulation is important to support general health.



- Lastly, he recommends that patients do everything possible to support healthy **nitric oxide** levels. Nitric oxide is critical to healthy arterial function. To help boost nitric oxide, Dr. Kahn first recommends lifestyle modifications like getting more exercise and juicing. If this isn't enough, he suggests supplements like pomegranate extract.

Dr. Kahn's outreach to patients doesn't end with a thriving practice and his expanding media presence. He has made it his mission to support patients in every way possible—even if that means going into new businesses and launching new ventures.

"I had a patient call and say they were scheduled for a bypass and wanted a support group," he

says. "I couldn't find one to recommend, so we started one, the Plant Based Nutrition Support Group. It was supposed to be just a few dozen people, but it exploded in popularity and now has over 3,000 members. Social support is so important."

He also launched the Greenspace Café in suburban Detroit, which Dr. Kahn called the "largest plant-based restaurant between Fort Lauderdale and Los Angeles."

If this all sounds like a lot, Dr. Kahn has a simple word of advice: "If you want extreme results, you take extreme action." ●

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

Dr. Joel Kahn's World

Dr. Joel Kahn's practice, the Kahn Center for Cardiac Longevity, is located in suburban Detroit, with offices in Bloomfield Hills and Grosse Pointe Farms. If you want to learn more about Dr. Kahn's practice and organizations, visit any of the following:
Kahn Center for Cardiac Longevity
www.kahnlongevitycenter.com
(248) 731-7412

Dr. Kahn's personal website offering tips and articles is located at:
<https://drjoelkahn.com>

The Greenspace Café, his plant-based restaurant, is located at:
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Ferndale, MI 48220
(248) 206-7510

The Plant Based Nutrition Support Group can be found online at:
www.pbns.org

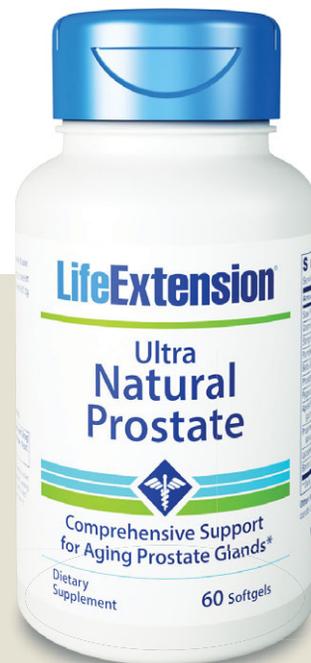
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BY GARRY MESSICK



Broccoli



One of the most popular of cruciferous vegetables—a family that includes cauliflower, cabbage, bok choy, and Brussels sprouts—broccoli is also one of the most beneficial of foods.

Broccoli was originally cultivated in Italy sometime in the 1600s. Today it is featured in a wide variety of dishes and is cooked a number of ways, although the healthiest methods are to steam this dark green veggie or consume it raw, which preserves its rich assortment of nutrients.

Some of the best reasons to make room for broccoli in your salad bowl or on your plate include:

Diabetes Control

Broccoli contains chromium, a mineral that our bodies use to help regulate insulin to maintain blood glucose levels.¹

Phytochemicals

Broccoli contains a number of phytochemicals, such as *indole-3-carbinol*, *isothiocyanates* and *glucosinolates*, which are known to have anticancer properties.² Studies suggest that broccoli consumption is associated with a reduced risk of some types of cancer, including lung, colon, and breast cancer.³

Maintaining Healthy Eyes

If you're looking for a food to help support your eyesight, then broccoli is the way to go. It contains the powerful carotenoids lutein and zeaxanthin, as well as beta-carotene and vitamin C, all of which have supportive or protective effects on your eyes, helping to keep cataracts and macular degeneration at bay.⁴

Bone Strength

People who are susceptible to osteoporosis—menopausal women and the elderly, for instance—would do well to make a habit of eating broccoli, since it contains bone-strengthening nutrients such as calcium and vitamin K1.^{5,6} Some vitamin K1 converts to biologically active K2 in the intestines. To ensure optimal K2 status, taking a supplement containing the MK-4 and MK-7 forms of vitamin K is suggested.

Sun Exposure

The compound *sulforaphane*, which is abundant in broccoli, has been shown to lessen the damaging effects of UV radiation to the skin.⁷

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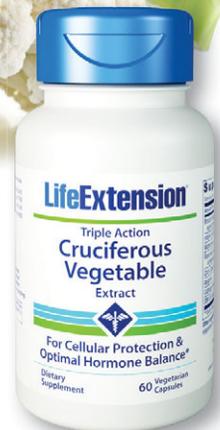
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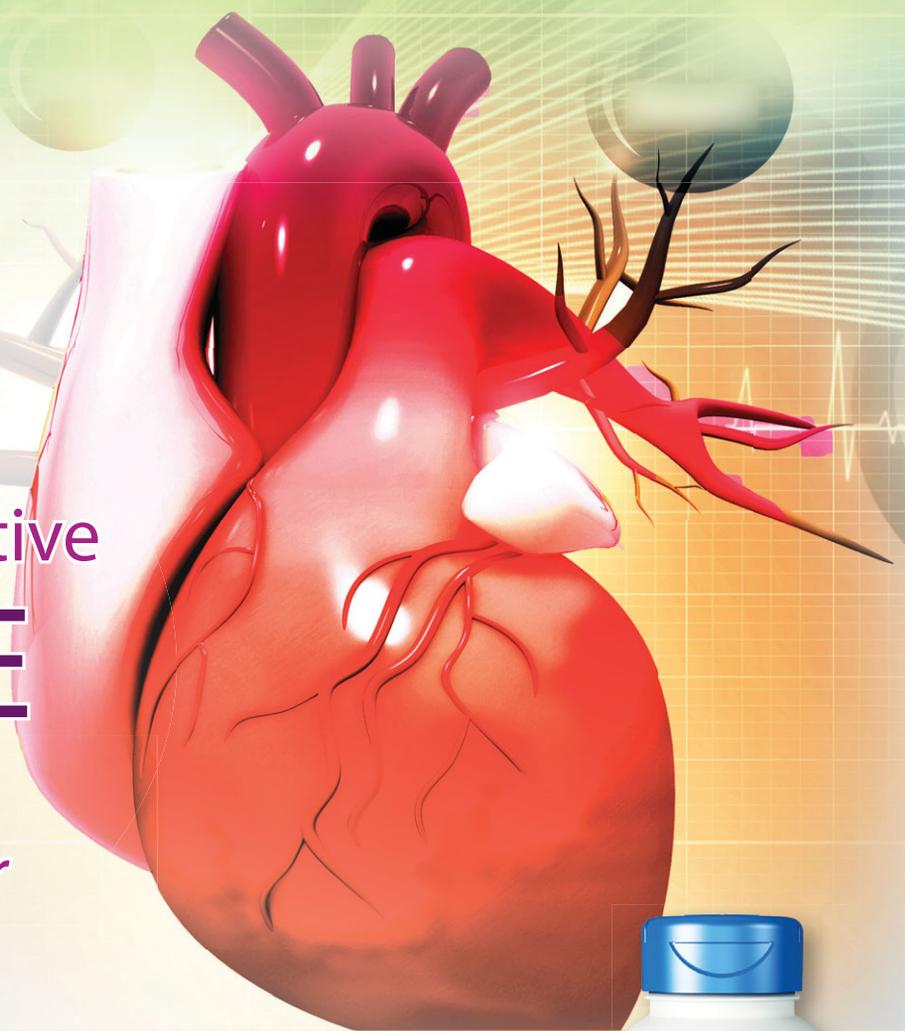
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Sodium Bicarbonate as a Therapy for Chronic Kidney Disease

A Review of the Scientific Evidence

"My mother has chronic kidney disease, and I have been reading about a possible treatment using sodium bicarbonate. Her doctor has concerns about this approach but doesn't give me any details. Can you provide more information, pros and cons, about this treatment?"

Thank you for your question and sorry to hear about your mom. I am assuming that you're asking because she's showing signs of progressive kidney dysfunction, such as worsening metabolic acidosis, abnormal urine tests, and symptoms such as muscle weakness.

Unfortunately, this is how chronic kidney disease (CKD) progresses. And I totally understand wanting to try anything to help your mom and slow down the progression of kidney dysfunction.

However, your doctor has good reason to be concerned. Although short-term studies show a benefit from oral bicarbonate therapy, long-term safety data are lacking. But let's do our own thorough review of the scientific literature and see what conclusions we can draw.



BY MICHAEL SMITH, MD

Metabolic Acidosis is the Hallmark of Chronic Kidney Disease

First, some background. The kidneys play an important role in maintaining metabolic homeostasis. Although there are several components to metabolism, the kidneys specifically balance acids and bases, helping your body maintain a slightly alkaline (basic) pH of around 7.4.

The kidneys accomplish this by excreting the daily acid load, derived mostly from the metabolism of amino acids, as phosphoric acid and ammonium.¹ The more acids the body produces, the more phosphoric acid and ammonium the kidneys excrete — thus helping to maintain balance.

However, all of this reverses with kidney dysfunction. As less of the daily acid load is excreted, the blood becomes more acidic. Eventually, an imbalanced state develops called metabolic acidosis, which is commonly associated with chronic kidney disease.²

This process is a vicious cycle. Chronic kidney disease results

in metabolic acidosis, which in turn causes more kidney damage. Additional problems include low bone mineralization, muscle breakdown, insulin resistance, high triglycerides, systemic inflammation, low blood pressure, and malaise.²⁻⁵

Restoring metabolic balance by reversing metabolic acidosis is one of the goals in treating chronic kidney disease, and this is where oral sodium bicarbonate comes into play.

Benefits of Oral Bicarbonate Therapy

Sodium bicarbonate naturally buffers retained acids in the body. Some clinicians believe that by increasing bicarbonate levels and enhancing the buffering effect, metabolic acidosis will decrease, along with many of its associated problems.

The first study I came across in support of this theory evaluated the effects of oral bicarbonate and muscle strength in 20 people with chronic kidney disease and mild acidosis. They were treated during

successive two-week periods with a placebo followed by increasing oral sodium bicarbonate doses.⁶ In this short, small study, the results showed a dose-dependent increase in serum bicarbonate (which means better buffering of acids) and improvement in lower extremity muscle strength.⁶

Interestingly, higher bicarbonate doses were not associated with increased blood pressure or greater edema. This is an important point, as doctors fear oral bicarbonate may raise blood pressure.⁶

A second study randomly assigned 134 people with chronic kidney disease to either oral sodium bicarbonate or standard-of-care for two years. The researchers followed the subjects' creatinine clearance (a measure of kidney function that declines with chronic kidney disease) and nutritional parameters, such as dietary protein intake.⁷

The researchers concluded that oral bicarbonate supplementation slows the rate of decline of creatinine clearance and helps to improve nutritional parameters. Additionally, they were able to show that subjects taking bicarbonate were significantly less likely to experience a rapid decline in kidney function.⁷

The research literature seems good so far. We've reviewed two studies showing improved acid buffering, less muscle weakness, slower rates of decline in creatinine clearance, and improvements in nutritional status with oral bicarbonate supplementation.

The next study I found was a longer, five-year prospective study that recruited 120 people with high blood pressure that resulted in kidney dysfunction.⁸ They were randomized into three groups: placebo, sodium chloride, and sodium bicarbonate.



The researchers measured the rate of filtration through a specific part of the kidney called the glomerulus. Doctors refer to this measurement as the glomerular filtration rate (GFR), which can progressively decline despite the adequate control of hypertension.⁸

After five years, the rate of GFR decline was slower and total GFR was higher in patients given sodium bicarbonate than in those given placebo. Additionally, urinary indices of kidney damage also improved in the bicarbonate group.⁸

This is good news — a larger and longer study of oral bicarbonate therapy showed that it can preserve glomerular filtration rate, a measurement that usually declines despite treating high blood pressure.

The authors concluded:

*“...our study shows that in hypertensive nephropathy, daily sodium bicarbonate is an effective kidney protective adjunct to blood pressure control...”*⁹

Is Eating Veggies Just as Good?

Let's not jump on the bicarbonate bandwagon just yet.

It turns out that eating fruits and vegetables is most likely a safer option and is beneficial for people with chronic kidney disease as well. This next study may help put some of this into perspective.

The researchers randomly assigned people with **stage 4** chronic kidney disease (there are five stages in all) to either oral bicarbonate or a diet rich in fruits and vegetables designed to reduce dietary acid by half. Then they followed them for one year.⁹ Using a standard measurement of acidity, the researchers found that both



treatment arms reduced metabolic acidosis, although bicarbonate therapy produced significantly better results.⁹

So eating fruits and vegetables is not as good. However, given some of the concerns of bicarbonate therapy, it could be a better option for some people with chronic kidney disease.

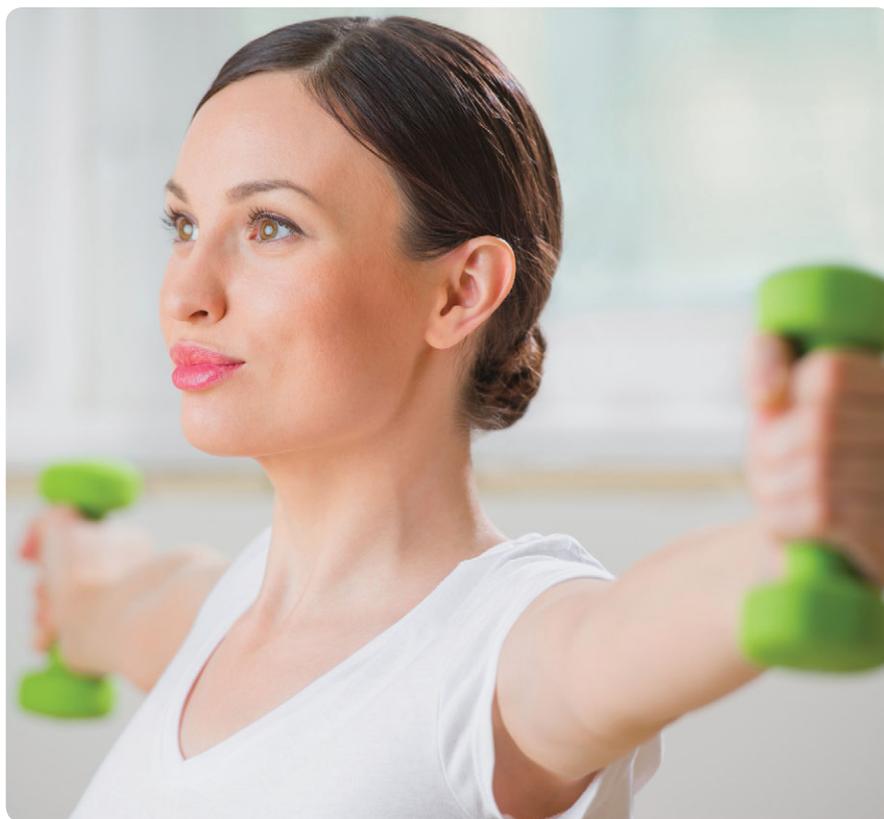
Scant Long-Term Data Merit Concern

Please be aware that, although the results of these studies are favorable, there remains a great deal of uncertainty as to the long-term viability of this approach in chronic kidney disease, particularly in older people. Strong, objective evidence to support the effectiveness and safety of sodium bicarbonate in older patients with chronic kidney disease is not available, though some small studies have suggested a benefit.

It really comes down to risk, which can include worsening hypertension due to sodium load, worsening edema, arterial calcification, and maybe even heart failure. For example, there's a possibility that vascular calcification can occur since bicarbonate makes phosphate less soluble. This may promote precipitation of calcium phosphate within arterial blood vessel walls.

Additionally, a **2013** study suggests a **14%** increased risk of heart failure with each **1-mEq/L** increase in serum bicarbonate level over **24 mEq/L**. These are observational data, so the causal relationship is unknown.¹⁰

Lastly, optimal dosing for oral sodium bicarbonate has yet to be established. Identifying the effective dose, where the risk-to-benefit ratio is low, is a critical piece of information that's currently missing. Keep in mind that too much bicarbonate can create an imbalance on the opposite end of the spectrum, called metabolic alkalosis.



The Final Word

Compelling evidence from controlled, long-term studies in older patients is desperately needed to understand the impact of bicarbonate supplementation in chronic kidney disease before recommending this treatment to older patients who suffer from the illness.

Many factors play a role in determining a specific dose of sodium bicarbonate. If you wish to discuss using bicarbonate with your physician, dosages used in studies range from **1.5 g/day** to **5 g/day**.^{7,11,12}

If you embark on a program with oral bicarbonate for chronic kidney disease, close monitoring of your dose and serum bicarbonate level is strongly suggested, preferably under the care of a nephrologist. ●

Dr. Michael Smith, a graduate of the University of Texas Southwestern Medical School, is senior health scientist and online personality for **Life Extension**®. Often described as “the country doctor with a city education,” Dr. Smith is an author, blogger, and lecturer who has created and conducted numerous health-related webinars, as well as scripted and hosted a variety of informative online videos.

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Retail Price \$84.95
Your Price \$63.71

NOW AVAILABLE WITH LIFE EXTENSION®!

Quality of Life's AHCC products stand as the most clinically-researched immune support supplements available.* Backed by over 20 human clinical studies conducted at some of the finest research institutions worldwide, including Ivy League universities and major health centers, AHCC provides you with immune support in times of need, and in times of maintenance.*

Kinoko Platinum is the ultimate choice as it delivers 750 mg of AHCC per vegicap — the highest potency available anywhere — making it easier to achieve the 3-gram amount recommended for advanced immune system support.*

TO ORDER, PLEASE CALL 1-800-544-4440 OR VISIT WWW.LIFEEXTENSION.COM



QUALITY OF LIFE | 877-937-2422 | www.QualityOfLife.net
f Facebook.com/QualityOfLifeLabs @QOLsupplements

Quality of Life is proud to have taken the Natural Products Foundation's "Truth in Advertising Pledge," a formal commitment to disseminating only truthful, non-misleading, and substantiated information.

*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.

Jarrow
FORMULAS®

THE PROBIOTIC FOR WOMEN

CLINICALLY TESTED  PATENTED

Jarro-Dophilus® Women contains four clinically documented, vaginal probiotic *Lactobacilli* strains: *L. crispatus* LbV 88, *L. jensenii* LbV 116, *L. gasseri* LbV 150N and *L. rhamnosus* LbV 96.*

All four strains were originally isolated from the vaginal tracts of pregnant women and are the dominant *lactobacilli* of healthy vaginal microbiota. They have been clinically tested for efficacy in helping maintain protective, healthy vaginal flora and promote urinary tract health.*

When choosing an effective probiotic, documented strains matter.™

Choose science.

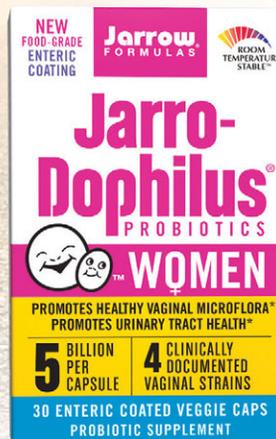
Choose Jarro-Dophilus® Probiotics.

FOUR CLINICALLY DOCUMENTED
LACTOBACILLUS STRAINS*

CONTAINS THE PREVALENT AND DOMINANT
SPECIES OF THE HEALTHY VAGINAL MICROBIOTA*

PROMOTES
URINARY TRACT HEALTH*

PROMOTES
HEALTHY VAGINAL MICROFLORA*



Jarro-Dophilus®
Women

5 Billion Per Capsule
30 Veggie Cap

Item # 52142 • Retail Price \$27.95

Your Price \$20.96

To order Jarro-Dophilus®,
call 1-800-544-4440

or visit www.LifeExtension.com

AVAILABLE IN EITHER ENTERIC-COATED (SHELF-STABLE, 5 BILLION)
OR NON-COATED (REQUIRES REFRIGERATION, 10 BILLION) OPTIONS

Jarro-Dophilus® Women provides the clinically tested Astarte® strains which are protected by European Patent 2,509,610 and U.S. Patent 8,846,027. Astarte® is owned by HSO Health Care GmbH, Vienna, Austria, and licensed in the U.S. to Jarrow Formulas, Inc. Other international patents pending.



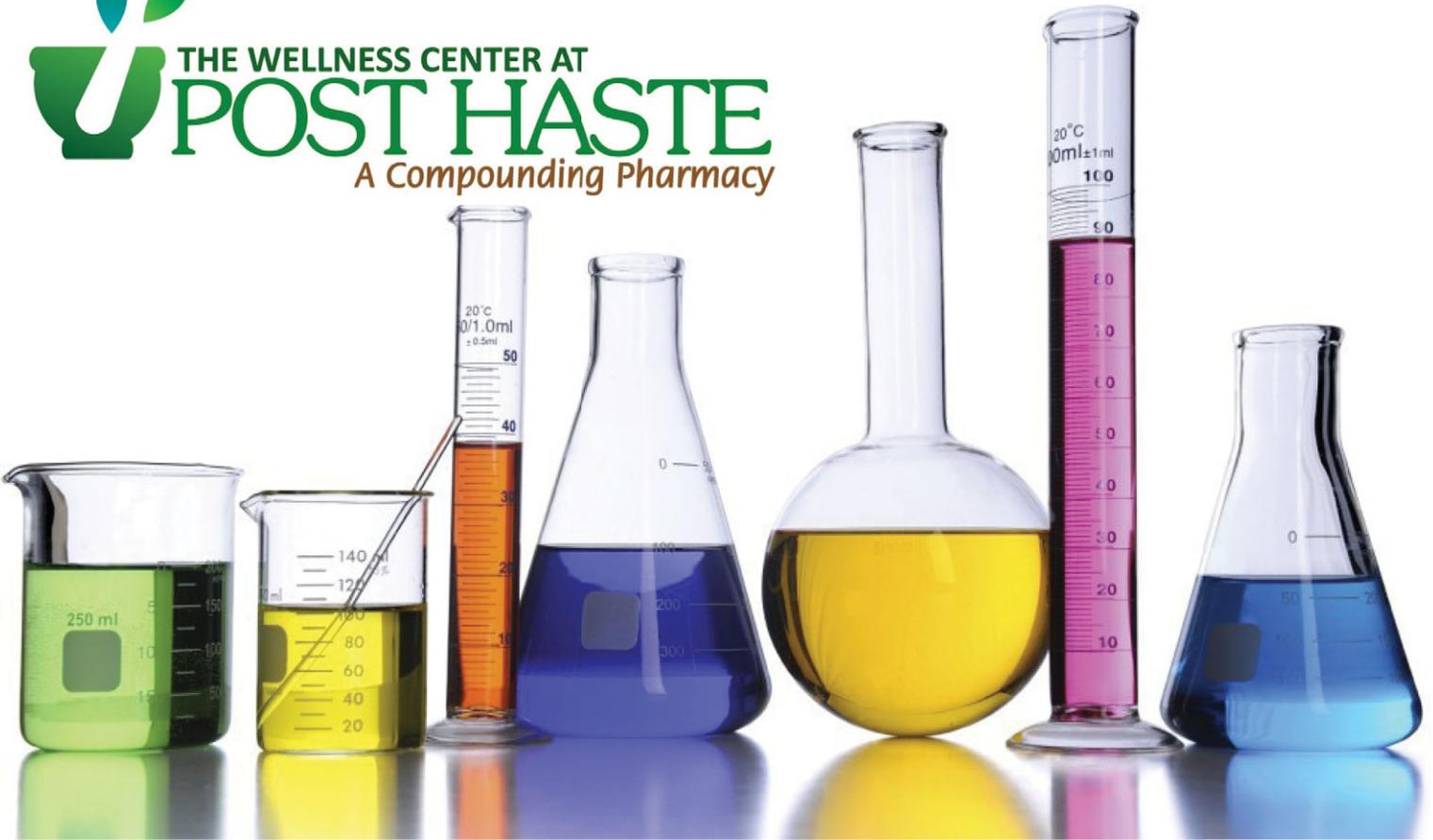
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www.PostHastePharmacy.com



FIVE EASY STEPS FOR ORDERING BLOOD TESTS:

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

**IT'S THAT SIMPLE!
DON'T DELAY! CALL TODAY!**

For Our Local Customers:

For those residing in the Ft. Lauderdale, Florida, area, blood-draws are also performed at the Life Extension Nutrition Center from 9:00 am to 2:00 pm Monday through Saturday. Simply purchase the blood test and have it drawn with no wait! Our address is:

**5990 NORTH FEDERAL HIGHWAY,
FT. LAUDERDALE, FL, 33308-2633**

Terms and Conditions

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

LifeExtension

Blood Testing

The Ultimate Information

WHAT'S NEW FOR 2017

- | | YOUR PRICE |
|--|--------------|
| ○ NEUROTRANSMITTER BASIC PANEL** (LC100058)
Serotonin, Dopamine, Epinephrine, Norepinephrine, GABA, Glutamate. Alternations in these six neurotransmitters play a significant role in contributing to symptoms such as cognitive disorders, depression, anxiety, diminished drive, fatigue and sleep difficulties, cravings, addictions, pain and more! Not available in NY. | \$199 |
| ○ FOOD SAFE ALLERGY TEST – BASIC** (LCM73001)
This test measures delayed (IgG) food allergies for 95 common foods. | \$198 |
| ○ FOOD SAFE ALLERGY TEST – EXTENDED** (LCM73002)
This test measures delayed (IgG) food allergies to an additional 95 foods. | \$198 |
| ○ FOOD SAFE ALLERGY TEST – COMBO** (LCM73003)
This test measures delayed (IgG) food allergies to all 190 foods found in our Basic and Extended panels. | \$375 |

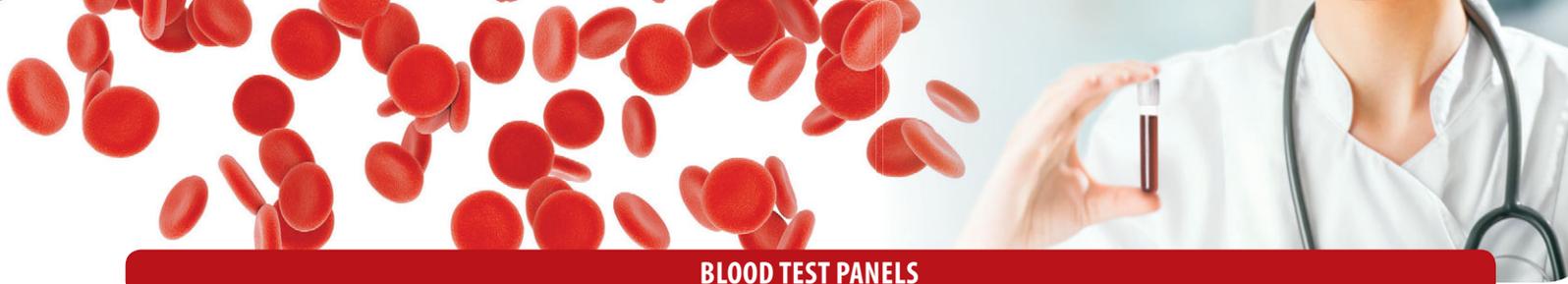
NEW GENETIC TESTING

- | | |
|---|--------------|
| ○ DNA GENETIC CANCER RISK PROFILE** (LC100057)
With only a saliva sample, you can identify your risk for 25 hereditary cancers by analyzing 98 genes from your DNA including the well-known BRCA1, BRCA2, TP53, and APC. Not available in FL, NY, and RI. | \$299 |
| ○ APOE GENETIC TEST FOR ALZHEIMER'S AND CARDIAC RISK ** (LC100059)
Apolipoprotein E (ApoE) is an important regulator of cholesterol and triglycerides levels in your blood and supports lipid transport and injury repair in your brain. Genetically, E4 is the strongest risk factor for developing Late Onset Alzheimer's disease. According to the National Institute of Health, inheriting a single copy of ApoE4 increases the risk of Alzheimer's disease by about three-fold. Inheriting two copies increases the risk by about 12-fold. In fact, almost 40% of AD patients have inherited an E4 allele.

In the cardiovascular system ApoE is involved in the transportation of fat molecules into your cells. E4 is associated with increased levels of cholesterol and triglycerides, which leads to atherosclerosis, heart disease and stroke. | \$149 |

CBC/CHEMISTRY PROFILE

- | | |
|--|-------------|
| ○ CBC/CHEMISTRY PROFILE (LC381822)
Note: This CBC/Chemistry Profile is included in many Life Extension Panels. The following panels are included in the CBC/Chemistry Profile:
CARDIOVASCULAR RISK PROFILE
Total Cholesterol • HDL Cholesterol • LDL Cholesterol • Triglycerides
Cholesterol/HDL Ratio • Estimated CHD Risk • Glucose
LIVER FUNCTION PANEL
AST (SGOT) • ALT (SGPT) • LDH • Total Bilirubin • Alkaline phosphatase
KIDNEY FUNCTION PANEL
BUN • Creatinine • BUN/Creatinine Ratio • Uric Acid
BLOOD PROTEIN LEVELS
Total Protein • Albumin • Globulin • Albumin/Globulin Ratio
BLOOD COUNT/RED AND WHITE BLOOD CELL PROFILE
Red Blood Cell Count • White Blood Cell Count • Eosinophils • Neutrophils (Absolute)
Lymphs (Absolute) • Eos (Absolute) • Baso (Absolute) • RDW • Monocytes (Absolute)
Monocytes • Lymphocytes • Platelet Count • Hemoglobin • Hematocrit • MCV • MCH
MCHC • Neutrophils
BLOOD MINERAL PANEL
Calcium • Potassium • Sodium • Chloride • Iron | \$35 |
|--|-------------|



BLOOD TEST PANELS

	YOUR PRICE		YOUR PRICE
<p>○ MALE LIFE EXTENSION PANEL (LC322582) CBC/Chemistry Profile • DHEA-S • PSA (prostate-specific antigen) Homocysteine • C-Reactive Protein (high-sensitivity) Free Testosterone • Total Testosterone • Estradiol • TSH for thyroid function • Vitamin D (25-hydroxyvitamin D) • Hemoglobin A1c</p>	\$269	<p>○ FEMALE LIFE EXTENSION PANEL (LC322535) CBC/Chemistry Profile • DHEA-S • Estradiol • Homocysteine C-Reactive Protein (high-sensitivity) • Progesterone • Free Testosterone Total Testosterone • TSH for thyroid function Vitamin D (25-hydroxyvitamin D) • Hemoglobin A1c</p>	\$269
<p>○ MALE HORMONE ADD-ON PANEL* (LCADDM) 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. This panel provides information about a testosterone metabolite that can affect the prostate; and the hormone pregnenolone that acts as a precursor to all other steroid hormones.</p>	\$120	<p>○ FEMALE HORMONE ADD-ON PANEL* (LCADDF) Pregnenolone and Total Estrogen To provide an even more in-depth analysis of a woman's hormone status, Life Extension has created this panel as an addition to the Female Life Extension Panel. This panel provides information about total estrogen status and the hormone pregnenolone that acts as a precursor to all other steroid hormones.</p>	\$125
<p>○ MALE ELITE PANEL (LC100016)* CBC/Chemistry Profile • Free and Total Testosterone • Total Estrogens Estradiol • DHEA-S • Progesterone • Pregnenolone • HT • FSH • LH • TSH Free T3 • Free T4 • Reverse T3 • Free and Total PSA • IGF-1 • SHBG • HbA1c Vitamin D 25-OH • hs-CRP, ferritin • Homocysteine • Hemoglobin A1c</p>	\$575	<p>○ FEMALE ELITE PANEL (LC100017)* CBC/Chemistry Profile • Free and total Testosterone • Total Estrogens Estradiol • Estrone • DHEA-S • Progesterone Pregnenolone DHT • FSH • LH • TSH • Free T3 • Free T4 • Reverse T3 • IGF-1 • SHBG • HbA1c Vitamin D 25-OH • hs-CRP • Ferritin • Homocysteine • Hemoglobin A1c</p>	\$575
<p>○ MALE COMPREHENSIVE HORMONE PANEL (LC100010)* CBC/Chemistry Profile • DHEA-S, Estradiol • DHT • PSA Pregnenolone • Total and Free Testosterone • SHBG • TSH • Free T3 This panel now includes Free T4 and Cortisol with no increase in price!</p>	\$299	<p>○ FEMALE COMPREHENSIVE HORMONE PANEL (LC100011)* CBC/Chemistry Profile • DHEA-S, Estradiol • Total Estrogens Progesterone • Pregnenolone • Total and Free Testosterone • SHBG TSH • Free T3 This panel now includes Free T4 and Cortisol with no increase in price!</p>	\$299
<p>○ MALE BASIC HORMONE PANEL (LC100012) DHEA-S • Estradiol • Total and Free Testosterone • PSA</p>	\$75	<p>○ FEMALE BASIC HORMONE PANEL (LC100013) DHEA-S • Estradiol • Total and Free Testosterone • Progesterone</p>	\$75
<p>○ THYROID ADD-ON PANEL (LCTHYROID) Free T3 & Free T4.</p>	\$55	<p>○ WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028) CBC/Chemistry Profile • 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) • Ferritin</p>	\$275
<p>○ OMEGA CHECK™** (LCOMEGA) Provides valuable information on your risk of developing heart disease, sudden heart attack, and cardiac death. The Omega Check™ also includes your AA:EPA ratio, allowing you to determine and track a major factor in total body inflammation.</p>	\$131.25	<p>○ HEALTHY AGING PANEL-COMPREHENSIVE (LC100026)* 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 • Insulin</p>	\$249
<p>○ INSULIN (LC004333) Helpful to assess insulin resistance.</p>	\$29.90	<p>○ DIABETES MANAGEMENT PROFILE – COMPREHENSIVE (LC100040) Hemoglobin A1C • Glucose • Insulin • Lipid Panel • Glycomark</p>	\$129
<p>○ NMR LIPOPROFILE® (LC123810) The NMR Lipoprofile® directly measures LDL particle size and number as well as HDL particle number, total cholesterol, and triglycerides. It also provides a calculation of one's risk of insulin resistance by assessing abnormalities in lipoprotein markers.</p>	\$99		
<p>○ ADVANCED OXIDIZED LDL PANEL*(LC100035) This panel looks at vascular inflammatory biomarkers, beginning with lifestyle choices to the development of metabolic and cardiovascular disease as well as the formation of vulnerable plaque. The panel contains the following tests: F2-Isoprostanes, Myeloperoxidase and Oxidized LDL.</p>	\$285		



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

This is NOT a complete listing of LE blood test services.
 Call 1-800-208-3444 for additional information.

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

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

Amino Acids

Arginine/L-Ornithine Capsules
 Arginine Ornithine Powder
 Branched Chain Amino Acids
 D,L-Phenylalanine Capsules
 L-Arginine Caps
 L-Carnitine
 L-Glutamine
 L-Glutamine Powder
 L-Lysine
 L-Taurine Powder
 L-Tyrosine Powder
 Super Carnosine
 Taurine

Blood Pressure & Vascular Support

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

Bone Health

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

Brain Health

Acetyl-L-Carnitine
 Acetyl-L-Carnitine Arginate
 Blast™
 Brain Shield® Gastrodin
 CocoaMind™
 Cognitex® Basics
 Cognitex® with Brain Shield®
 Cognitex® with Pregnenolone & Brain Shield®
 Cognizin® CDP-Choline Caps
 DMAE Bitartrate (dimethylaminoethanol)
 Dopa-Mind™
 Ginkgo Biloba Certified Extract™
 Huperzine A
 Lecithin Granules
 Memory Protect
 Migra-Eeze™
 Neuro-Mag® Magnesium L-Threonate
 Neuro-Mag® Magnesium L-Threonate with Calcium and Vitamin D3
 Optimized Ashwagandha Extract
 PS (Phosphatidylserine) Caps
 Vinpocetine

Cholesterol Management

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

Digestion Support

Artichoke Leaf Extract
 Digest RC®
 Effervescent Vitamin C - Magnesium Crystals
 Enhanced Super Digestive Enzymes
 Enhanced Super Digestive Enzymes w/Probiotics
 EsophaCool™

Esophageal Guardian
 Extraordinary Enzymes
 Fiber-Immune Support
 Gastro-Ease™
 Ginger Force®
 Pancreatin
 Regimint
 Tranquil Tract™
 TruFiber™
 WellBetX PGX plus Mulberry

Energy Management

Adrenal Energy Formula
 Asian Energy Boost
 D-Ribose Powder
 D-Ribose Tablets
 Forskolin
 Mitochondrial Basics with BioPQQ®
 Mitochondrial Energy Optimizer with BioPQQ®
 NAD+ Cell Regenerator™
 PQQ Caps with BioPQQ®
 Rhodiola Extract
 RiboGen™ French Oak Wood Extract
 Triple Action Thyroid

Eye Health

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

Fish Oil & Omegas

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® Proval® 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
 Tri Sugar Shield®

Heart Health

Aspirin (Enteric Coated)
 BioActive Folate & Vitamin B12 Caps
 Cardio Peak™ with Standardized Hawthorn and Arjuna
 Homocysteine Resist
 Optimized Carnitine with GlycoCarn®
 Super Ubiquinol CoQ10
 Super Ubiquinol CoQ10 with BioPQQ®
 Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™
 Super-Absorbable CoQ10 Ubiquinone with α -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®
 Enhanced Zinc Lozenges
 Immune Modulator with Tinofend®
 Immune Protect with PARACTIN®
 Immune Senescence Protection Formula™
 Kinoko® Gold AHCC
 Kinoko® Platinum AHCC
 Kyolic® Garlic Formula 102
 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 ApresFlex®
 Advanced Bio-Curcumin® with Ginger & Turmerones
 Black Cumin Seed Oil
 Black Cumin Seed Oil with Bio-Curcumin®
 Boswella
 Cytokine Suppress™ with EGCG
 Serraflazyme
 Specially-Coated Bromelain
 Super Bio-Curcumin®
 Zyflamend® Whole Body

Joint Support

Arthro-Immune Joint Support
 ArthroMax® Advanced with UC-II® & ApresFlex®
 ArthroMax® with Theaflavins & ApresFlex®
 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

Ageless Cell™
 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
 Mediterranean Whole Food Blend
 Mega Green Tea Extract (decaffeinated)
 Mega Green Tea Extract (lightly caffeinated)
 Optimized Fucoidan with Maritech® 926
 Optimized Resveratrol
 Optimized Resveratrol with Nicotinamide
 Riboside
 pTeroPure®
 Pycnogenol® French Maritime
 Pine Bark Extract
 Resveratrol with Pterostilbene
 RNA (Ribonucleic Acid)
 Super R-Lipoic Acid
 X-R Shield

Men's Health

Mega Lycopene Extract
 PalmettoGuard® Saw Palmetto with
 Beta-Sitosterol
 PalmettoGuard® Saw Palmetto/Nettle Root
 Formula with Beta-Sitosterol
 Pomi-T®
 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

Potassium Iodide
 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
 FLORASSIST® Balance
 FLORASSIST® GI with Phage Technology
 FLORASSIST® Heart Health
 FLORASSIST® Mood
 FLORASSIST® Oral Hygiene
 FLORASSIST® Throat Health
 Jarro-Dophilus® for Women
 Theralac® Probiotics
 TruFlora® Probiotics

Skin Care

Advanced Anti-Glycation Peptide Serum
 Advanced Growth Factor 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-Redness & Adult Blemish Lotion
 Broccoli Sprout Cream
 Collagen Boosting Peptide Serum
 DNA Repair Cream
 Essential Plant Lipids Reparative Serum
 Eye Lift Cream
 Face Rejuvenating Anti-Oxidant Cream
 Fine Line-Less
 Healing Formula
 Healing Vitamin K Cream
 Hyaluronic Facial Moisturizer
 Hyaluronic Oil-Free Facial Moisturizer
 Hydrating Anti-Oxidant Facial Mist
 Hydroderm
 Lifting & Tightening Complex
 Melatonin Cream
 Mild Facial Cleanser
 Multi Stem Cell Skin Tightening Complex
 Neck Rejuvenating Anti-Oxidant Cream
 Rejuvenex® Body Lotion
 Rejuvenex® Factor Firming Serum
 Renewing Eye Cream
 Resveratrol Anti-Oxidant Serum
 Shade Factor™
 Shade Factor™ Sunscreen Lotion
 Shade Factor™ Sunscreen Spray
 Skin Lightening Serum
 Skin Restoring Phytoceramides with Lipowheat®
 Skin Stem Cell Serum
 Skin Tone Equalizer
 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 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 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

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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			
02119	AGELESS CELL™ • 30 softgels	40.00	30.00	27.00			
00681	AHCC® • 500 mg, 30 caps	59.98	44.99				
24404	AHCC® (KINOKO® PLATINUM) • 750 mg, 60 veg. caps	84.95	63.71				
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	44.00	33.00	29.00			
01617	ARTHROMAX® W/THEAFLAVINS & APRÈSFLEX® 120 veg. caps	44.00	33.00	30.00			
01618	ARTHROMAX® ADVANCED W/UC-II® & APRÈSFLEX® 60 caps	36.00	27.00	24.00			
02108	ARTHROMAX® HERBAL JOINT FORMULA • 60 veg. caps	40.00	30.00	27.00			
01404	ARTHRO-IMMUNE JOINT SUPPORT • 60 veg. caps	32.00	24.00	21.00			
00919	ARTICHOKE LEAF EXTRACT • 500 mg, 180 veg. caps	30.00	22.50	21.00			
01533	ASCORBYL PALMITATE • 500 mg, 100 veg. caps	22.50	16.88	15.00			
00888	ASHWAGANDHA EXTRACT (Optimized) • 60 veg. caps	10.00	7.50	6.75			
01805	ASIAN ENERGY BOOST • 90 veg. caps	24.00	18.00	16.50			
01066	ASPIRIN • 81 mg, 300 enteric coated tablets	6.00	4.50	4.00			
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			
SUBTOTAL OF COLUMN 1							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01008	BLAST™ • 600 grams of powder	26.95	20.21				
02025	BLOOD PRESSURE (Dual Action) • 60 veg. tabs	44.00	33.00	28.00			
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			
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/INSEAZ® 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		
02103	COCOAMIND™ • 14 packets	24.00	18.00	16.00			
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		
SUBTOTAL OF COLUMN 2							

ITEM No.	PRODUCT	Retail Each \$	YOUR PRICE			QTY	Total
			1 Unit Each	4 Unit Each	10 Unit Each		
01421	COGNITEX® BASICS • 60 softgels	38.00	28.50	26.25	24.00		
01659	COGNIZIN® CDP CHOLINE CAPS • 250 mg, 60 veg. caps	36.00	27.00	25.50			
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		
01951	COQ10 w/d-LIMONENE (Super-Absorbable) 100 mg, 60 softgels	30.00	22.50	20.00			
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			
80165	ADVANCED GROWTH FACTOR SERUM • 30 ml	65.00	48.75	42.75			
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/BLEUBERRY & POMEGRANATE EXTRACTS • 1 oz	33.00	24.75	23.51			
80133	ANTIOXIDANT FACIAL MIST • 2 oz	32.00	24.00	22.80			
80105	ANTI-REDNESS & ADULT BLEMISH LOTION • 1 oz	74.50	55.88	49.17			
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			
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			
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			
SUBTOTAL OF COLUMN 3							

ITEM No.	PRODUCT	Retail Each \$	YOUR PRICE			QTY	Total
			1 Unit Each	4 Unit Each	10 Unit Each		
80107	FINE LINE-LESS • 1 oz	74.50	55.88	49.17			
80137	HEALING FORMULA ALL-IN-ONE CREAM • 1 oz	53.00	39.75	34.07			
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			
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			
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			
80164	SKIN TONE EQUALIZER • 0.4 fl oz	59.00	44.25	39.00			
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			
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			
SUBTOTAL OF COLUMN 4							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
02006	DOPA-MIND™ • 60 veg. tabs	44.00	33.00	28.00			
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							
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			
01064	FEMMESENCE MACAPAUSE® • 120 veg. caps	34.99	26.24				
02007	FIBER-IMMUNE SUPPORT (Apple Cinnamon) • 235 grams	34.00	25.50	23.50			
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			
02120	FLORASSIST® ORAL HYGIENE • 30 lozenges	20.00	15.00	13.00			
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			
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			

SUBTOTAL OF COLUMN 5

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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 (Garcinia) • 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			
02121	HOMOCYSTEINE RESIST • 60 veg. caps	26.00	19.50	17.50			
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	13.69	10.27				
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							
52142	JARRO-DOPHILUS® PROBIOTIC FOR WOMEN 30 enteric-coated veg. caps	27.95	20.96				
00056	JARRO-DOPHILUS EPS® • 60 veg. caps	23.95	17.96				
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 (Jarrow) • 60 softgels	33.95	25.46				
00316	KYOLIC® GARLIC FORMULA 102 • 200 veg. caps	27.45	20.59				
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		
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			

SUBTOTAL OF COLUMN 6

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
M							
01992	MACUGUARD® OCULAR SUPPORT w/SAFFRON• 60 softgels	25.00	18.75	17.50			
01993	MACUGUARD® OCULAR SUPPORT w/SAFFRON & 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			
02109	MEDITERRANEAN WHOLE FOOD BLEND • 90 veg. caps	44.00	33.00	30.00			
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/BIOPQQ® • 30 caps	44.00	33.00	30.00			
01868	MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPQQ®•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			
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			
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			

SUBTOTAL OF COLUMN 7

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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		
*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 (WellBetX®) • 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			
00577	POTASSIUM IODIDE • 130 mg, 14 tabs	6.95	5.21	3.94			
01500	PQQ CAPS W/BIOPQQ® • 10 mg, 30 veg. caps	24.00	18.00	13.50	12.00		
01647	PQQ CAPS W/BIOPQQ® • 20 mg, 30 veg. caps	40.00	30.00	24.00	21.00		
00302	PREGNENOLONE • 50 mg, 100 caps	26.00	19.50	16.50			
00700	PREGNENOLONE • 100 mg, 100 caps	30.00	22.50	20.25			
*01373	PRELOX® NATURAL SEX FOR MEN® • 60 tablets	52.00	39.00	36.00			
00525	PROBOOST™ THYMIC PROTEIN A • 30 packets	66.60	49.95				
01441	PROGESTA-CARE® • 4 oz cream	36.39	27.29	25.72			
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			

SUBTOTAL OF COLUMN 8

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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	18.08	13.56				
00605	REGIMINT • 60 enteric-coated caps	19.95	14.96	14.00			
01708	REISHI EXTRACT MUSHROOM COMPLEX • 60 veg. caps	30.00	22.50	20.25			
01448	REJUVENEX® BODY LOTION • 6 oz	24.00	18.00	14.85	12.75		
01621	REJUVENEX® FACTOR FIRING SERUM • 1.7 oz	65.00	48.75	37.50			
01220	REJUVENEX® (Ultra) • 2 oz	52.00	39.00	33.00	29.25		
00676	REJUVENIGHT® (Ultra) • 2 oz	39.95	29.96	27.00			
01410	RESVERATROL W/PTEROSTILBENE • 100 mg, 60 veg. caps	36.00	27.00	24.00			
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/SATIREAL® (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			
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			
02110	SHADE FACTOR™ SUNSCREEN LOTION • 4 fl. oz	20.00	15.00	13.00			
02118	SHADE FACTOR™ SUNSCREEN SPRAY • 6 fl. oz	22.00	16.50	14.25			
01884	SILYMARIN • 100 mg, 90 veg. caps	14.00	10.50	9.50			
01249	SINUS CLEANSER • 4 oz. bottle	25.00	18.75				
SUBTOTAL OF COLUMN 9							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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			
01097	SOY EXTRACT (ULTRA) • 150 veg. caps	76.00	57.00	50.00			
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	TRUFLOA® PROBIOTICS • 32 veg. caps	42.95	32.21				
01722	L-TRYPTOPHAN • 500 mg, 90 veg. caps	33.00	24.75	22.50			
01721	TRYPTOPHAN PLUS (Optimized) • 90 veg. caps	32.00	24.00	21.75			
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				
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			
SUBTOTAL OF COLUMN 10							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
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	27.00	20.25	18.00			
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							
33998	THE RIGHT TO TRY by Darcy Olsen • 2016	26.99	20.24				
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				
33880	OUTSTANDING HEALTH: THE 6 ESSENTIAL KEYS TO MAXIMIZE YOUR ENERGY AND WELL BEING by Michael Galitzer, MD & Larry Trivieri Jr. • 2015	24.95	18.71				
33877	THE TRUTH ABOUT MEN AND SEX by Abraham Morgentaler, MD, FACS • 2015	16.99	12.74				
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				
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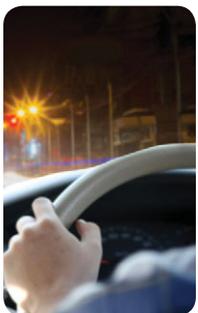
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