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BEN STILLER
His Triumph Over Prostate Cancer

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REPORTS

7 NEW RESVERATROL (AND NAD+) DOSING PROTOCOL

Resveratrol promotes **longevity** by activating proteins called **sirtuins**. For **sirtuins** to **function**, they *require* the coenzyme **NAD+**. Maturing people can derive considerable benefit by taking **more NAD+** precursors with modest dose **resveratrol**. **NAD+** is vital for youthful cell **function** including **DNA repair**.

40 IMPEDE UPPER RESPIRATORY INFECTIONS

Scientists have identified a targeted **probiotic cocktail** that can boost the body's immune defenses, in particular mucosal secretory **IgA**, thereby reducing colds, flu, and upper respiratory complications.

52 RELIEVE URINARY-TRACT SYMPTOMS

Urinary discomforts related to **prostate enlargement** are epidemic in aging men. Common symptoms include nighttime urinary frequency, urgency, and weak stream. Several **natural extracts** help alleviate urinary discomforts in men.

64 REVERSING A ROOT CAUSE OF GLAUCOMA

Glaucoma is a common cause of blindness. A human study demonstrates eye pressure reduced by **24%** using two **plant extracts**. When combined with standard glaucoma therapy, **intraocular pressure** was lowered up to **40%** with these natural extracts.

84 2017 CARDIOVASCULAR DISEASE PREVENTION SYMPOSIUM

Organized by Dr. Michael Ozner, the Cardiovascular Disease Prevention Symposium is an annual gathering of visionary cardiologists focused on conquering heart disease. Topics included PCSK9 to reduce cholesterol, benefits of fish oil and biomarkers of coronary artery disease.



ON THE COVER

30 BEN STILLER ADVOCATES PROSTATE CANCER SCREENING

Prostate cancer is curable when detected before it metastasizes. Yet millions of men are skipping annual **PSA** blood tests. Actor **Ben Stiller** is a beneficiary of early diagnosis and has become a passionate advocate for **PSA screening**.

DEPARTMENTS

21 IN THE NEWS

Meat increases mortality among cancer survivors; strict diabetes management extends life; **NAD+** precursors slow aging; aspirin inhibits cancer; vitamin D relieves back pain; and updated disease protocols.

93 SUPERFOODS: CELERY

Celery has been cultivated for thousands of years and is a rich source of fiber, vitamin K, potent anti-inflammatory phytonutrients, and important minerals, including iron, zinc, copper, magnesium, calcium, selenium, and especially potassium.

75 RESEARCH UPDATE:

POMEGRANATE IMPROVES MITOCHONDRIA

Swiss researchers have identified a molecule produced in the body from **pomegranates** known as **urolithin A** that reduces a pathologic mechanism of aging called **mitochondrial dysfunction**.

95 WELLNESS PROFILE:

HEART TRANSPLANT SUCCESS STORY

After Humberto Fasano's staggering 2001 diagnosis of severe cardiomyopathy and congestive heart failure (CHF), doctors told him that **50%** of CHF patients usually die within five years of diagnosis. Over 15 years later, Fasano is thriving after he managed to outlast a chronic, seemingly hopeless disease with the help of first-rate cardiac care and **Life Extension®**.



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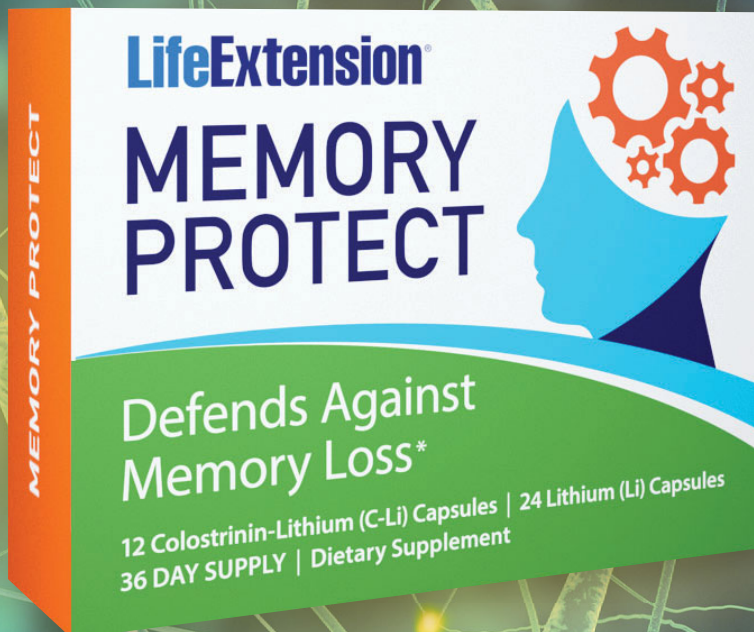
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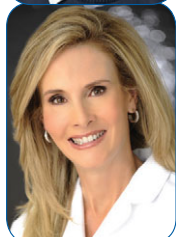
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NICOTINAMIDE RIBOSIDE

(NAD⁺ Precursor)

*Converts
Into*

NAD⁺

(Nicotinamide Adenine Dinucleotide)

*Resulting
In*

YOUTHFUL CELL FUNCTION

Normal **aging** results in marked decline of cellular **NAD⁺**.

Oral ingestion of nutrients like **nicotinamide riboside**
boosts **NAD⁺** in cells throughout the body.



BY WILLIAM FALOON

New Resveratrol and NAD+ Suggestions

NAD+ is a coenzyme found in all living cells. It is essential for **energy** production and **DNA repair**.¹⁻³

In **2014**, we introduced a **NAD+** precursor called **nicotinamide riboside**.⁴ When you take **nicotinamide riboside**, it converts to **NAD+** in your cells, where it facilitates **regenerative** processes.⁵

The most important **NAD+** benefit is promoting rapid **DNA repair** and fueling beneficial **longevity proteins**.^{2,3,6,7}

Resveratrol favorably enhances the activation of cellular **sirtuin proteins**.⁸ **NAD+** is required for our **sirtuins** to function.^{7,9,10}

As we age, **NAD+** levels plummet, which impedes the ability of **resveratrol** to deliver its benefits.¹¹⁻¹⁴

In **2003**, we introduced **resveratrol** based on its ability to activate **sirtuin longevity** factors.^{15,16}

Genetic research we conducted back then indicated that biologically meaningful **resveratrol** dosing for humans might be as low as **20 mg** a day.^{16,17} Subsequent studies suggested **higher** resveratrol intake.^{18,19}

Based on our interpretation of emerging evidence, we have reformulated our premium supplements to provide more **NAD+** precursor (**nicotinamide riboside**) with lower **resveratrol**.

You're going to learn about potential **age-reversal** benefits of boosting cellular **NAD+** later this year. This article will provide a summary of what's been uncovered in recent published studies.



NAD⁺ is required for healthy cellular functions including **DNA repair**.¹⁻³

The amount of **damage** inflicted to cellular **DNA** is grossly underestimated. Be it background radiation or normal metabolic processes, our DNA is constantly “**broken**” and then “**repaired**” using specialized **coenzymes** like **NAD⁺**.

Failure to **repair** damaged DNA can result in cell death or transformation into malignant or senescent states.

NAD⁺ levels markedly decline with age.¹¹⁻¹⁴ **NAD⁺** deficit manifests clinically in the form of degenerative disorders of the brain,²⁰⁻²³ heart,²⁴⁻²⁶ and other tissues.^{27,28}

In animal studies, regenerative effects have been observed in the **brain** when **NAD⁺** is restored.^{29,30}

Sleep quality deteriorates with normal aging in many people. Restoring youthful **NAD⁺** levels in the brain may support a healthy circadian rhythm.³¹

Loss of **NAD⁺** activity is linked to **type II diabetes**. In mice, administration of an **NAD⁺** precursor restores **insulin sensitivity** and protects against the diabetic impact of a high-fat diet.^{6,32,33}

Resveratrol and NAD⁺

Resveratrol has become a popular dietary supplement because of its ability to activate **sirtuin proteins** in our cells.³⁴

When **sirtuins** are activated, the effect is delayed aging, which has been demonstrated in a wide spectrum of experimental models, including mammals.³⁵⁻⁴⁴

Sirtuins that are activated by **resveratrol** require **NAD⁺** as their energy substrate. Loss of **NAD⁺** impedes beneficial **sirtuin function**.^{7,10,45}

Younger people have high **NAD⁺** levels that enable them to benefit from the **sirtuin-boosting** effects of **resveratrol**.

To improve the functionality of **sirtuin** proteins, it makes sense for maturing individuals to boost their **NAD⁺** levels.

The good news is that a precursor to **NAD⁺** can be found in **nicotinamide riboside** supplements. New dosage recommendations can enable older people to restore cellular **NAD⁺** to more youthful profiles.

NAD⁺ Benefits More Than Just Sirtuins

The favorable effect of **resveratrol** in promoting **sirtuin activity** is well established. For **sirtuins** to function properly, they must have sufficient **NAD⁺** to fuel their activity.^{7,10}

Protecting against pathological aging, however, requires more than securing **sirtuin** structure-function. We must also ensure the following two types of **DNA damage** are **repaired**:

- **Single-strand** DNA breaks occur often and are usually fixed by nutrients that most of you supplement with today.
- **Double-strand** DNA breaks are more difficult to restore. Left unrepaired, **double-strand** breaks create cellular havoc that can lead to systemic degeneration.

A critical *enzyme* that repairs **double-strand** DNA breaks is **PARP1**.⁴⁶⁻⁴⁸ For the **PARP1** enzyme to function it requires lots of **NAD⁺**.^{49,50}



When it comes to protecting against **cancer**, a tumor suppressor called **p53** protects against runaway cell propagation.

NAD+ supports **p53 activation** to help thwart malignant transformation.⁵¹⁻⁵³

Magnitude of Daily DNA Damage

Few people understand the degree of daily damage inflicted to their cellular **DNA**.

To put this into perspective, a study analyzed how many double-stranded **DNA breaks** occur **per cell** each **day**. The number turned out to be **10 DNA breaks per cell** every day.⁵⁴

Your cells require **NAD+** to facilitate repair of **DNA breaks**. Sufficient **NAD+** is needed for the **PARP1** repair enzyme to function.^{49,50,55}

Imagine every dividing cell in your body undergoing ten double-stranded **DNA breaks** per day and NOT being repaired because your **NAD+** is depleted from aging, or from outside abuse such as excess alcohol and toxic food ingestion.

It explains many degenerative pathologies that occur as aging cells lose their **NAD+**.

Repairing **DNA breaks** will probably go a long way towards preventing cells from turning **malignant**. That's because **NAD+** helps maintain **activity** of cell division regulators like **p53**.⁵¹⁻⁵³

Restoring Youthful Cell Functionality

As we age, beneficial **genes** that support cell health "turn off" while detrimental genes overexpress.

Nutrients like **curcumin** help suppress genes that generate system-wide **inflammation**.⁵⁶⁻⁵⁹

Likewise, **omega-3s**⁶⁰⁻⁶⁶ and **vitamin D**⁶⁷⁻⁷⁰ favorably impact hundreds of **genes** that protect against degenerative illnesses.

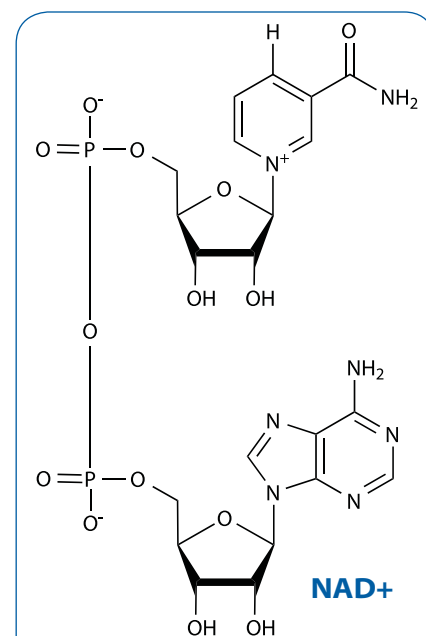
To reverse the accumulation of damage inflicted to cellular **DNA**, we should support the efficient function of **PARP1** enzymes.

PARP1 facilitates **DNA repair** via multiple mechanisms.

Higher **NAD+** cell levels enable **PARP1** to function properly.^{49,71,72}

Aging creates a chaotic environment in the brain that can make sound **sleep** difficult.⁷³ As **DNA** is **repaired**, we regain youthful cell **functionality** that can result in **improved** overall health.

Combining **resveratrol** with more **nicotinamide riboside** supports healthy cellular **NAD+** levels,⁷³ which are important to support **anti-aging** enzymes like **PARP1** and **BubR1**.^{71,74,75}



Nutrients That Facilitate DNA Repair

People seeking to extend their lifespans today avoid toxins (such as tobacco smoke and overcooked food) that damage DNA.

Vitamin D has been shown to play an important role in **DNA repair**, which helps explain why people with higher levels of vitamin D show lower rates of most degenerative diseases.^{70,76-78}

Folic acid also plays a role in maintaining certain **DNA repair** mechanisms.⁷⁹⁻⁸⁵

Many of the supplements we take daily help facilitate DNA repair. The box below provides a partial listing of these nutrients.

Up until now, no nutrient could accelerate **DNA repair** to the magnitude needed to induce possible **age-reversal** benefits.

That may have changed based on data showing remarkable **DNA repair** occurring when the amount of **NAD+ (nicotinamide adenine dinucleotide)** is increased in our cells.^{3,86}

DNA Repair Activators

Fish Oil ⁸⁷⁻⁸⁹	Vitamin B12 ⁹⁰	Vitamin E ⁹¹	Vitamin C ⁹²	Nicotinamide ⁸⁶
CoQ10 ⁹³	Zinc ⁹⁴	Magnesium ^{95,96}	Selenium ⁹⁷	Polyphenols ⁹⁸⁻¹⁰⁰
Grape Seed Extract ^{101,102}	Curcumin ^{103,104}	Carotenoids ¹⁰⁵⁻¹⁰⁷	Vitamin B6 ^{108,109}	

BubR1 is an *enzyme* that protects against **chromosome instability**. According to one study, sustained high-level expression of **BubR1** “*provides a unique opportunity to extend healthy lifespan*”.⁷⁵

Some of you may find these new acronyms like **PARP1** a bit confusing.

I hope you appreciate (as I do) how rapidly our understanding of **aging** is expanding, along with accessible ways to reverse many degenerative changes.

Take Control by Boosting Your NAD+

George Church, PhD, is a Harvard professor pioneering **CRISPR/Cas9** gene editing technology.^{110,111}

Once perfected, Dr. Church has publicly stated that this will enable aging humans to “edit” their genes in a way that will empower them to regain **youth**.

We’ve reported on Dr. Church’s research in past issues of *Life Extension Magazine*®.^{110,111} This **age-reversal** gene-editing technology is predicted to be perfected in the next **5-10** years.

In the meantime, we can exert significant control over cellular health factors by taking more nicotinamide riboside. This will boost **NAD+** blood levels several fold.⁵

How our **genes** are **expressed** and their **stability** determines whether we retain healthy vitality or suffer relentless degeneration.

Nutrients like **curcumin**,^{112,113} **fish oil**,⁶⁰⁻⁶³ **folate**,¹¹⁴⁻¹¹⁶ and **vitamin D**^{70,117-119} promote youthful genomic stability.

The box below displays additional benefits one can obtain by boosting cellular **NAD+**.

This can be accomplished by supplementing with **250 mg** each day of **nicotinamide riboside** that converts to **NAD+** in your body.

We may recommend higher **nicotinamide riboside** doses in coming months as scientific data emerges.

For longer life,



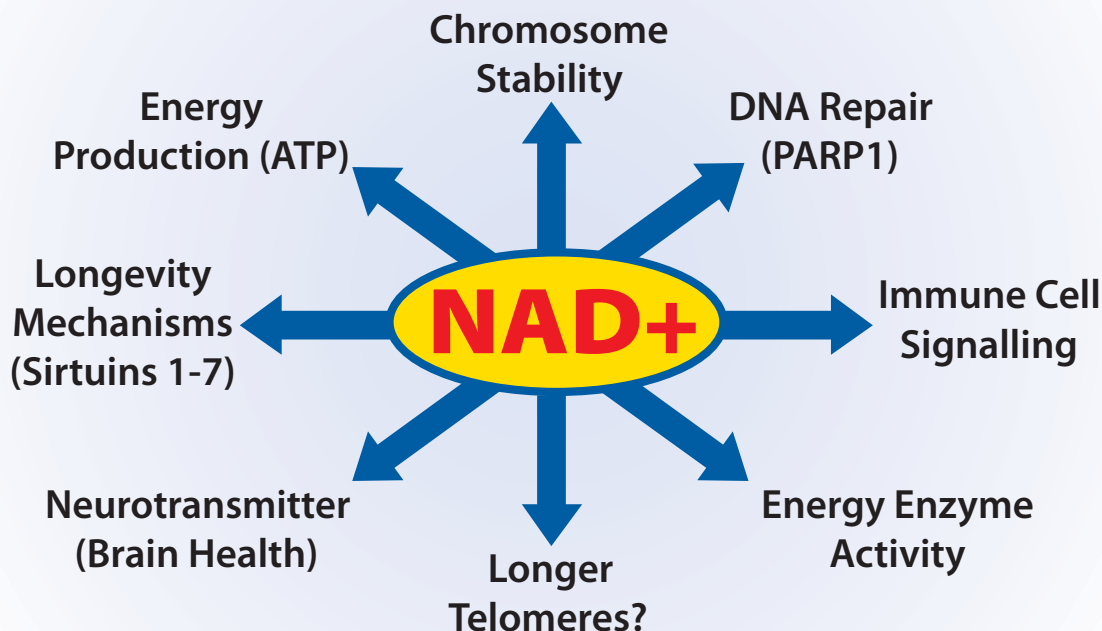
William Faloon, Co-Founder
Life Extension Foundation
Buyers Club

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(References continued on page 12.)

What is NAD+ Used For?





What Should Cancer Patients Being Treated With Chemo or Radiation Therapy Do?

Cancer **chemotherapy** drugs function via several destructive mechanisms, but the ultimate objective is to inflict massive **damage** to **DNA** so that cancer cells are destroyed. **Radiation** does this by directly breaking **DNA strands**.

One way cancer cells escape complete eradication after exposure to chemotherapy or radiation is to **repair** damaged DNA via a wide range of survival mechanisms.

Some studies suggest adding “**DNA repair inhibitor**” drugs might enable conventional chemo/radiation therapies to kill more cancer cells.

The downside to **DNA repair inhibitors** is they might increase the **toxicity** of chemo/radiation therapy to **healthy cells** and thus create more serious **side effects**. To cite a conclusion from a published study on this topic:

“With the addition of DNA repair inhibitors, standard chemotherapy could become more effective but also more toxic.”¹²⁰

What the above conclusion alludes to is that adding drugs that impede **DNA repair** might make **chemotherapy** more **effective**, but in the process make the chemotherapy more **toxic**. A major limiting factor to chemotherapy is **toxicity** so severe that patients are forced to discontinue therapy even when it is demonstrating efficacy.

For example, one of many **toxic** side effects of chemotherapy is painful **neuropathy**.¹²¹⁻¹²⁴ Cancer patients who take steps to boost their **NAD+** levels have experienced relief from fatigue.¹²⁵ Animals given nicotinamide riboside experienced reductions in chemotherapy-induced neuropathy.¹²⁶

Another side effect of certain chemotherapy drugs and radiation to the chest is **heart failure**.¹²⁷⁻¹³² Nutrients like **coenzyme Q10** have been shown to protect against

this cardiac damage¹³³⁻¹³⁵ and improve survival in cancer patients.¹³⁶⁻¹³⁹ Conventional oncologists are largely unaware of this clinical research.

As it relates to supplementation with higher-dose **nicotinamide riboside**, we’ve reviewed numerous published studies and it is not possible to reach a rational consensus as to what **actively-treated** cancer patients should do as it relates to boosting their cellular **NAD+**.

Out of an abundance of caution, we suggest **cancer patients** undergoing **chemotherapy** or **radiation** avoid higher-dose **NAD+** during therapy and for a reasonable period after.

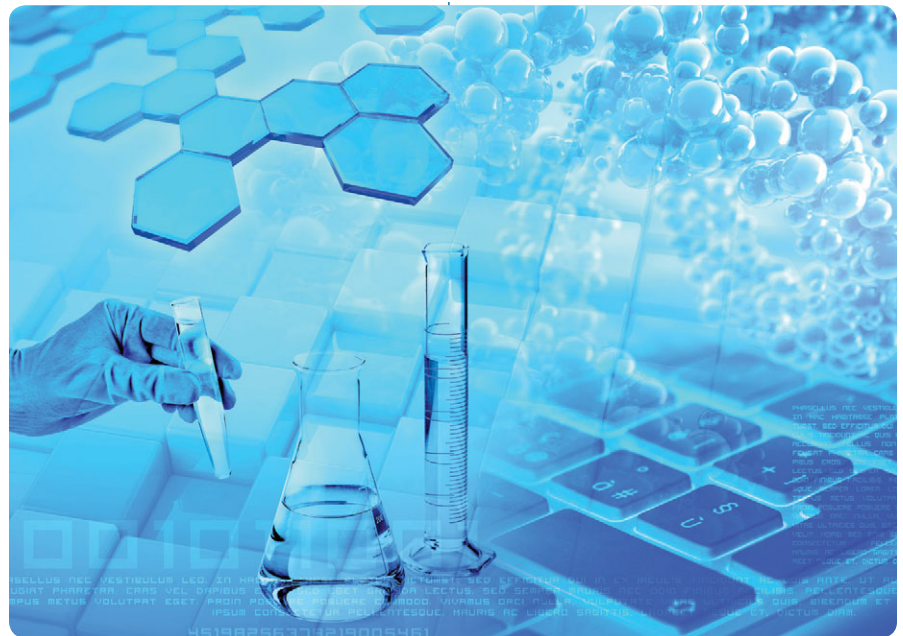
The conundrum cancer patients have faced for decades are arguments from many oncologists to take no supplements during chemo/radiation therapy. The concern is the nutrients might protect malignant cells from destruction.

Opposing this conventional view are numerous studies demonstrating that nutritional and herbal supplements do not interfere with the effectiveness of chemotherapy or radiation therapy. Furthermore, a myriad of controlled studies show marked survival **improvements** when cancer patients supplement with **nutrients** that boost immune function and protect against treatment side effects.¹⁴⁰⁻¹⁵⁹

Stated simply, malignant cells can preferentially “hijack” many of the same factors healthy cells require for survival. There is thus a delicate theoretical balance as to what cancer patients should do during conventional treatment. For updated guidance on nutrients, hormones and off-label drugs that actively-treated cancer patients should consider, refer to our updated protocols at:

www.LifeExtension.com/Chemotherapy
and
www.LifeExtension.com/Radiation

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A male cyclist wearing a red jersey, a silver and red helmet, and sunglasses is riding a blue road bike. He is leaning forward in a racing position, with his hands on the handlebars. The background is a bright, slightly blurred outdoor scene, suggesting motion.

Boosting NAD⁺ Levels Slows Aging

A 2017 review of the literature has found that supplementation with NAD⁺ precursors **nicotinamide riboside** or **nicotinamide mononucleotide** increases lifespan in mice. It also improved their mitochondrial, brain, muscle, and melanocyte stem-cell function.*

In one of the papers discussed, researchers identified a protein that aids in DNA repair in young mice. The research shows NAD⁺ levels can be boosted through NAD⁺ precursor supplementation, reducing DNA damage and bringing cellular activity back to youthful levels.

Researchers believe the medical implications for humans indicate that supplementation with **nicotinamide riboside** at doses of **100-250 mg** or more can increase NAD⁺ levels systemically.

Editor's Note: The study's authors note that the exact mechanism of declining NAD⁺ levels and their basic importance to the aging process are still under investigation.

* *Rejuvenation Res.* 2017 May 24.

Meat Carries Mortality Risk for Cancer Survivors

Breast cancer survivors who had a *higher* intake of **meat** were found to be at greater **risk for dying**.*

The study included 1,508 women diagnosed with breast cancer. Interviews conducted during 1996-1997 and five years later obtained information concerning subjects' consumption of grilled, barbequed, and smoked meat.

There were 597 deaths during a median 17.6 year study period, including 237 deaths associated with breast cancer.

In comparison with an intake below the median, having a higher intake of the meats prior to diagnosis was associated with a **23%** greater risk of dying from any cause.

Editor's Note: For women who continued to consume higher amounts of grilled, barbecued and smoked meat after diagnosis, the risk of all-cause mortality was **31%** higher than those whose intake was lower before and after diagnosis.

*J Natl Cancer Inst. 2017 Jan 5;109(6).





Attentive Diabetes Management Extends Life

Strict management of **type II diabetes** can make a significant difference in quality and length of life.*

A 20-year study divided 160 people—all of whom were at risk of type II diabetes—into two groups. One group stayed with their usual treatment, while the other changed to a more multitargeted, aggressive regimen.

Results showed the intensive-treatment group lived, on average, **7.9 years longer** than the “normal” treatment group. Also, in the aggressive treatment group, the risk for a number of diseases (including kidney disease, heart disease, and blindness) was reduced.

When the study began, the average subject age was 55, and all were borderline obese.

According to senior study author Dr. Oluf Pedersen, the intensive treatment was aimed at reducing a comprehensive selection of adverse factors such as blood-clot risk, high glucose, high blood pressure, triglycerides and cholesterol. The regimen included behavior modification (exercise, healthy diet, no smoking) and medications when deemed necessary.

Editor’s Note: Dr. Joel Zonszein, director of New York’s Clinical Diabetes Center at Montefiore Medical Center, stated, “These results are impressive, and the message is important. Physicians are not being aggressive enough...If you look at all the factors they (the researchers) treated, about **80%** of the U.S. population isn’t treated correctly, according to national surveys.”

**Diabetologia*. 2016 Nov;59(11):2298-307.

Aspirin Fights Cancer

A recent study suggests **aspirin** could slow the growth of some types of cancer.*

The research was designed to determine how inhibition of platelet activation through the use of aspirin might affect the proliferation of colon and pancreatic cancer cells.

Platelets, when activated, cause blood to clot. They can also promote the growth of cancer cells through releasing growth factors and enhancing the response of *oncoproteins*, which regulate the development of tumor cells. Aspirin is an anti-platelet drug, and low doses have been known to reduce the risk of some gastrointestinal cancers by mechanisms still under investigation.

Researchers combined platelets with metastatic (cancer that has spread to other parts of the body) colon cancer cells, nonmetastatic (cancer that has not spread) colon cancer cells, and nonmetastatic pancreatic cancer cells. Aspirin was then added to all three groups.

Results showed that a low aspirin dose stopped platelets from prompting growth and replication of nonmetastatic pancreatic and colon cancer cells. The growth of metastatic pancreatic cancer cells could also be stopped with aspirin, but only at doses too large for humans to ingest. Metastatic colon cancer cells were unaffected at any dose.

These data are corroborated by human studies showing lower risk of many cancers in those taking low-dose aspirin daily.

Editor's Note: The researchers found these results promising. "Our study," they wrote, "reveals important differences and specificities in the mechanism of action of high- and low-dose aspirin in metastatic and nonmetastatic cancer cells with different tumor origins and suggests that the ability of aspirin to prevent platelet-induced c-MYC (an oncoprotein) expression might be selective for a nonmetastatic phenotype."

* *Am J Physiol Cell Physiol.* 2017 Feb 1;312(2):C176-C189.

Vitamin D Relieves Back Pain

A trial reported in *Pain Physician* uncovered a significant benefit for supplementing with **vitamin D** among individuals with chronic lower back pain.*

The trial included 68 men and women who had chronic lower back pain for at least three months which did not respond to medication or physical therapy.

Subjects were limited to those whose plasma 25-hydroxyvitamin D levels measured at the beginning of the trial were less than **30 ng/mL**.

Participants received a total of **60,000 IU** of vitamin D3 given orally once per week for eight weeks. Pain and disability were scored at the beginning of the study and at two, three and six months.

Following supplementation, **66%** of the patients attained sufficient levels of plasma 25-hydroxyvitamin D. Pain and disability scores significantly improved at two, three and six months in comparison with scores obtained at the study's onset.

Editor's Note: Authors Babita Ghai, MD, DNB and colleagues observe that vitamin D exerts anatomic, hormonal, neurologic and immunologic influences on pain expression. "Our findings provide a reasonable explanation and justification for advising dietary supplementation as well as therapeutic medication to achieve normal vitamin D levels in patients with musculoskeletal pain," they write.

* *Pain Physician*. 2017 Jan-Feb;20(1):E99-E105.

Just-Published Protocols in *Disease Prevention and Treatment*

The scientists and writers at **Life Extension®** continuously update the online *Disease Prevention and Treatment* protocol chapters based on the latest research. Recent updates are briefly summarized here with complete versions of these chapters and references available online at: <http://www.lifeextension.com/Protocols>

EXERCISE ENHANCEMENT – Physical inactivity is the **fourth leading** risk factor for **premature death** worldwide.

Many people are unaware that even modest physical activity, such as brisk walks, can improve cardiorespiratory fitness. This protocol summarizes effective strategies for enhancing cardiorespiratory fitness regardless of age.

Research on enhancing the metabolic adaptations triggered by exercise includes **carnitine**, **whely protein**, and **creatine**, as well as **DHEA** and bioidentical hormone replacement.

IMMUNE SENESCENCE – The declining function of the immune system, called immune senescence, is one of the biggest risk factors for many diseases that occur in advancing age.

Caloric restriction, or the Mediterranean-style diet, and effectively **managing stress** can promote healthy immune system functioning.

Emerging techniques to maintain healthy immunity include **young stem-cell mobilized plasma**, which may stimulate youthful immune activity in older recipients.

Natural interventions including **reishi mushroom**, **cistanche**, and **Pu-erh tea** may help counteract age-related immune decline.

PNEUMONIA – Pneumonia risk increases with age as a consequence of immune senescence.

Taking steps to boost immune function is of the utmost importance. Evidence suggests that regular **aspirin** use and treating pneumonia patients with **adjuvant corticosteroids** might improve outcomes.

Natural interventions like **vitamin D**, **zinc**, **reishi mushroom**, and **probiotic** supplements may help bolster immune defenses against pneumonia-causing pathogens. Combining these approaches with the **pneumococcal vaccine** could be lifesaving.

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Ben Stiller *Wants Men to Test for* Prostate Cancer

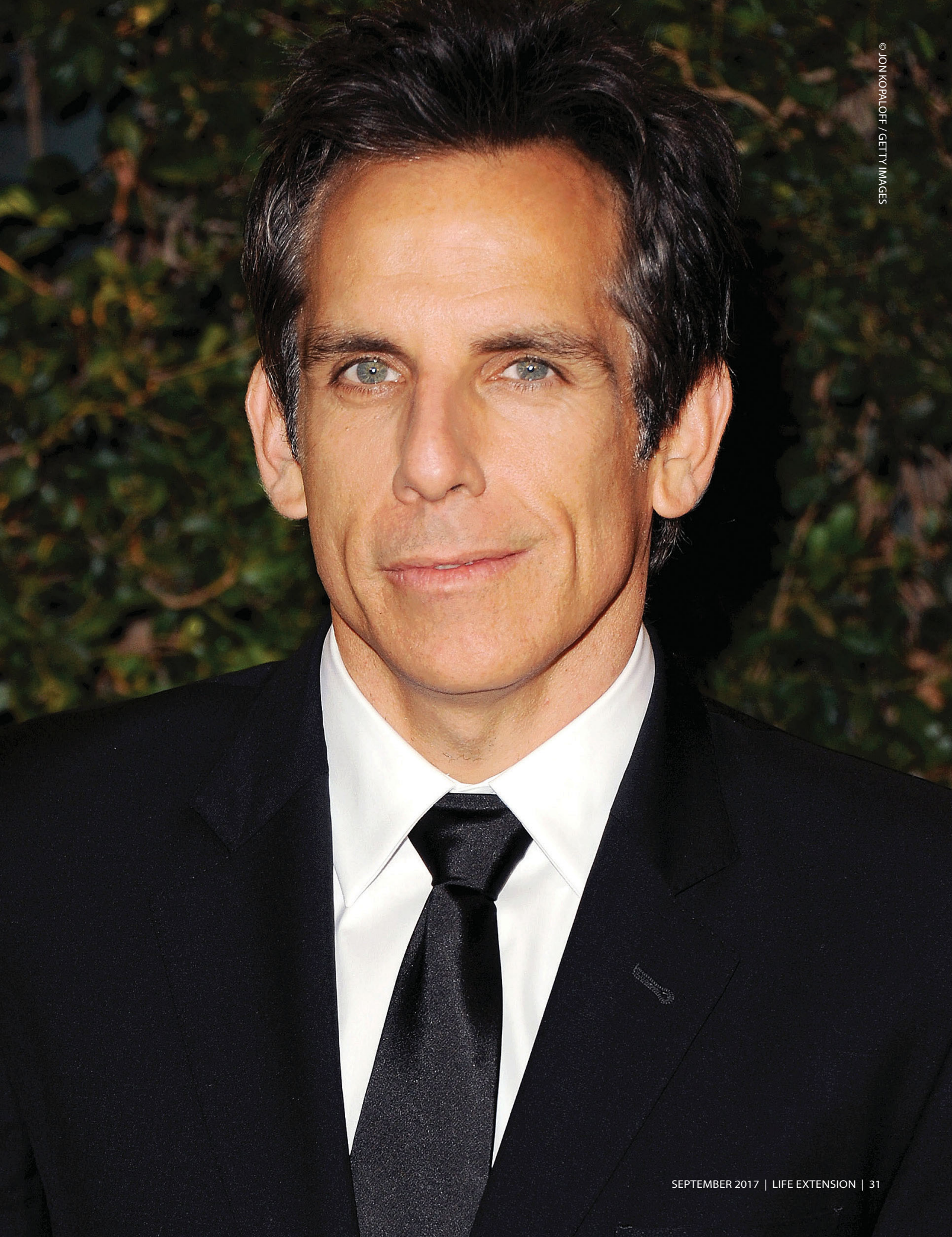
Actor Ben Stiller was as surprised as anyone when he heard these words: “So yeah, it’s cancer.”

After all, he was only **48** and had no real reason to suspect that he had cancer, especially prostate cancer, which many people think of as an older man’s disease.

“I have no history of prostate cancer in my family and I’m not in the high-risk group,” he wrote in a public posting detailing his experience. “I had no symptoms.”

So how did the star of movies including *There’s Something About Mary*, *Meet the Parents*, and *Zoolander* end up getting diagnosed in the first place? And what does his case have to say about the way we diagnose and treat prostate cancer in the United States?

Stiller’s story began two years before the day in June 2014 when he was diagnosed with prostate cancer. This is when his doctor, a “thoughtful internist”, gave him a simple and inexpensive **PSA** screening test. This was the first of many PSA tests over the next few years.



A one-time modest elevation of **PSA** blood levels can be explained by several factors that are often correctable. So the best course of action is to have follow-up PSA tests to monitor what direction the PSA is moving in.

As follow-up PSA tests were performed, Ben Stiller's doctor noted a gradual rise in Stiller's PSA over his earlier baseline. These rising levels triggered a referral to a urologist, who did further testing, including a digital rectal exam, an MRI, and finally a biopsy that confirmed the diagnosis.

Three months after his diagnosis, Stiller had undergone treatment—in his case a *robotic-assisted laparoscopic radical prostatectomy*, or removal of his prostate gland during a minimally invasive surgery—and was cancer free. That could have been the end of it, but after doing his research into prostate cancer screening and diagnosis, Stiller realized he couldn't be silent about his experience. He's been spreading the same message ever since: "Taking the PSA test saved my life."

This might not seem like a controversial statement—after all, it might seem hard to argue against a simple blood test that can identify prostate cancer early enough to treat it before it spreads and without major side effects. But in fact, due to recent chaos in the official recommendations for **PSA blood testing**, tens of thousands of American men are skipping the very test that possibly saved Stiller's life on the *advice of their doctors* and with potentially devastating consequences.

History of Screening Recommendations

The PSA test is used to measure **prostate-specific antigen**, a protein that is produced by the prostate gland.

PSA levels rise in aging men and can be the first signal of underlying prostate cancer. So the PSA blood

test is used to identify men who may have prostate malignancy and need further evaluation.

This simple blood test was approved by the FDA in **1994**, allowing men to begin monitoring their PSA levels and identify possible tumors long before they become dangerous.¹

Since PSA testing was introduced, the risk of dying from prostate cancer among men who were regularly screened declined by as much as **42%**.^{2,3}

Despite this drop, widespread PSA screening remained controversial in the medical community.

Prostate cancer is typically a slow-growing cancer, and the current biopsy and treatment methods, including the kind of less-invasive surgical removal that Stiller underwent, carry risks such as pain, incontinence and impotence. Some doctors worried that the PSA test, which can detect very slight increases in PSA levels, might be causing men with low-risk cancers to undergo biopsies and possibly unnecessary treatment.

Based on these concerns, in **2012**, the US Preventive Service Task Force (USPSTF) issued a stunning update to prostate screening recommendations. Drawing its conclusions from the results of a \$400 million federal study, the USPSTF advised *against* **PSA screening** for healthy men, saying that PSA screening has "no net benefit."⁴⁻⁶ The American Cancer Society soon revised its recommendations, steering healthy, average-risk men away from PSA screening until age 50, with revised recommendations for men with a family history of prostate cancer.⁷

These guidelines caused immediate uproar in the medical community, including rebuttals from **Life Extension®** urging men over age 40 to continue having annual PSA blood tests. By **2016**, the USPSTF announced it was reconsidering its prior recommendations *against* **PSA screening**.



In **2017**, a new draft recommendation was released for public input. This time, the USPSTF slightly backtracked, saying that the risks and benefits of PSA screening are “closely balanced” in men between the ages of 55 and 69 and they should seek their doctor’s advice on PSA screening. Men aged 54 and under and those over the age of 70 would still be counseled to avoid PSA screening. These new, slightly softer guidelines were still not finalized as of **May 2017**, and the agency was soliciting public input.⁸

In Stiller’s case, following even the updated guidelines might have meant disaster—he was still too young to be screened according to the **USPSTF** (United States Preventive Service Task Force).

“If he [Ben Stiller’s doctor] had waited, as the American Cancer Society recommends, until I was 50, I would not have known I had a growing tumor until two years after I got treated,” he wrote. “If he [Ben Stiller’s doctor] had followed the US Preventive Service Task Force guidelines, I would never have gotten tested at all, and not have known I had cancer until it was way too late to treat successfully.”

The USPSTF’s original recommendations against screening were partly based on the **Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial**. This huge trial assigned 76,685 men aged 55 – 74 years to one of two study arms. The first group (38,340 men) underwent annual PSA testing for 6 years and an annual digital rectal exam for 4 years. The control group (38,345 men) underwent normal care, with occasional “opportunistic screening” but no regular PSA monitoring. At the end of the 13-year follow-up period, researchers announced there was “no evidence of a mortality benefit” for annual PSA screening.⁹ The USPSTF recommendation against PSA screening soon followed.

Life Extension, which has long supported PSA screening, issued a detailed rebuttal challenging the findings of this study. In fact, the study was deeply flawed thanks to widespread “contamination” of the control arm.

While **Life Extension** was early in identifying the obvious flaws with this study, it wasn’t long until astute research groups began to catch up. In early **2016**, a group of urologists from the New York Presbyterian Hospital and Weill Cornell Medical College in New York published a letter in the *New England Journal of Medicine* confirming what **Life Extension** suspected.¹⁰

The shocking truth was that more than **80%** of the men in the **control** group—which was supposed to only receive “occasional” PSA screening—reported at least one PSA test during the trial. In fact, by some measures, the men in the **control** group received **more** PSA screening than men in the **PSA screening** arm!¹⁰

Their conclusion? “We’re going to have to reconsider this issue.”¹¹



Further support for this position was published in another large study, this one called the **European Randomized Study of Screening for Prostate Cancer**. This study randomized 182,000 men aged 50 to 74 to a “usual care” control group or a group with PSA screening every two to seven years. Spread across seven research centers in Europe, the group tracked prostate cancer mortality in both study arms. At the median follow-up of nine years, researchers reported that **PSA screening** resulted in a **20% reduction** in prostate cancer mortality!¹²

A study from the Göteborg center, one of the seven participating centers in this study, found that men aged 50 to 64 years of age who had a PSA screening every other year had a **44% reduced** mortality risk from prostate cancer. The center used a PSA cutoff of **2.5 ng/mL to 3.0 ng/mL**. Men with these cutoff PSA levels and higher were referred for additional testing, including a digital rectal exam, transrectal ultrasound, and prostate biopsy.¹³

Although it’s too late to help the tens of thousands of men who likely skipped PSA screening, we are grateful the USPSTF is slowly grappling with the well-documented issues in its original guidelines by issuing the new draft recommendations.¹⁴



The issue was further complicated by results from a study published in the *New England Journal of Medicine* in **2016**. This trial followed 1,643 men for a decade, each with prostate cancer that was first detected by PSA screening, to see which of the most popular treatment techniques was most effective, including “active waiting” and monitoring the disease, surgery to remove the prostate gland, or external radiation beam therapy to treat the cancer. While the prostate-cancer-specific survival rate was high (>**98%**) in all three groups, researchers found that men in the “active waiting” group were more likely to progress to metastatic disease, and about half of them needed surgery or radiation therapy within the 10-year study period.¹⁵

These results suggest that men benefit from early detection *and* early treatment of prostate cancer.

Please note that **Life Extension** does not recommend “**watchful or active waiting**” in the presence of **high PSA** and/or **low-grade** prostate cancer. We instead advise men to follow an aggressive “**active surveillance**” program that involves an anticancer **diet** along with specific **drugs** and **nutrients** that may enable early-stage disease to be contained.

For information about **Life Extension’s “active surveillance”** guidelines, refer to the article titled *How to Reverse Markers of Prostate Cancer* in the **June 2016** issue of this magazine. (Available free of charge at LifeExtension.com.)

Rise in Metastatic Cancer Rates

While various agencies continue to issue contradictory and confusing advice, men across the country have paid the price. In late **2016**, a research group from Northwestern Medicine released a stunning and

tragic finding: diagnoses of metastatic prostate cancer, the worst type, climbed an unbelievable **72%** between 2004 and 2013.¹⁶

To reach these findings, the group studied a database of more than three-quarters of a million men in the National Cancer Data Base. What they found should alarm any man who skips his PSA screening.

“The fact that men in **2013** who presented with metastatic disease had much higher PSAs than similar men in **2004** hints that more aggressive disease is on the rise,”¹⁷ said study author Dr. Edward Schaeffer, chair of urology at Northwestern University Feinberg School of Medicine and Northwestern Medicine.

“One hypothesis is the disease has become more aggressive, regardless of the change in screening,” said Dr. Schaeffer. “The other idea is since screening guidelines have become more lax, when men do get diagnosed, it’s at a more advanced stage of disease. Probably both are true. We don’t know for sure but this is the focus of our current work.”¹⁷

This makes treatment more difficult, and it’s exactly the situation **Ben Stiller** would have faced if his forward-thinking doctor hadn’t established a PSA baseline early on and tracked it, allowing him to discover Stiller’s troubling increase in PSA levels over time and recommend the movie star for further evaluation and surgery.

It’s important to note that the increase in metastatic, aggressive prostate cancer almost perfectly aligns with the trend away from PSA screening that culminated with the USPSTF 2012 recommendation against *any* PSA screening.

Stiller’s Happy Ending

The main concern with PSA screening is the potential for overdiagnosis and unnecessary treatment. These are real concerns—PSA screening frequently returns “false positives,” which are stressful for the patients involved and result in unnecessary biopsies and additional tests.¹⁸

This is why **Life Extension** recommends regular, inexpensive PSA screening to establish a baseline and follow PSA numbers over time. If your PSA level rises above **1.0 ng/mL**, there are natural and safe measures you can take to reduce it. Further evaluation may be necessary if your PSA continues to rise over time.

In fact, this is exactly the course Stiller followed, and today he’s alive and grateful for it.

“The bottom line for me: I was lucky enough to have a doctor who gave me what they call a ‘baseline’



PSA test when I was about 46,” he wrote in Medium, a popular blogging platform. “My doctor watched my PSA tests rise for over a year and a half, testing me every six months...I think men over the age of 40 should have the opportunity to discuss the test with their doctor and learn about it, so they can have the chance to be screened.”¹⁹

More recently, two years after his diagnosis and treatment, Stiller went public with his experience with an interview with Matt Lauer on the *Today* show, alongside Dr. Schaeffer. While reporting that he wasn’t experiencing any of the major complications of prostate surgery, Stiller gave a simple reason for going public. He wanted to educate as many men as possible about their options when it came to PSA screening.

“It’s a whole new world,” Stiller said. “You need to educate yourself.”

We at **Life Extension** commend **Bernard M. Kruger, M.D.** for having the foresight to test Ben Stiller’s **PSA blood levels** despite conventional “authorities” advising *against* PSA screening.

The good news for all men is that newer imaging techniques, as described in the **June 2016** issue of **Life Extension** magazine, are reducing biopsy side effect risk and enabling men to eradicate prostate cancer without major surgery and radiation. ●

Prostate Cancer Survivors Due to Early Detection

Name	Year Successfully Treated
Robert De Niro	2003 at age 60
John Kerry	2003 at age 60
Rudy Giuliani	2000 at age 56
Robert Goulet	1993 at age 60
Colin Powell	2003 at age 66
Michael Milken	1993 at age 46

**If you have any questions on the scientific content
of this article, please call a Life Extension®
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An Innovative Approach to *Stopping* COLDS *and* FLU

The *Centers for Disease Control and Prevention* estimate that 56,000 people a year die from flu-related illnesses.¹ During the 2015-2016 flu season 310,000 people were hospitalized due to flu-related illnesses.²

Colds and the flu are often treated with a variety of medications designed to *reduce* symptoms but that have no ability to *activate* the body's own immune response to fend off invading bacteria or viruses.

Scientists wanted to find a way to stop the common cold and flu before they take hold.

Our bodies have a built-in security system called secretory **IgA**, which is present in mucosal membranes that line the nose and upper respiratory tract. IgA can prevent cold and flu viruses from entering.

With age, our ability to generate IgA secretions declines and this first line of defense is weakened.

Researchers started their investigations knowing that a critical aspect of the immune system is the *microbiome* in the gut, where a complex microenvironment of beneficial bacteria exist and interact.

Scientists discovered that a targeted **probiotic cocktail** of bacteria can boost the body's immune defense system, in particular mucosal secretory **IgA**.

How IgA Protects Against Cold and Flu

Infections of the nose and upper respiratory tract pose a risk to older adults, who have a reduced immune response.³

This weakening of the immune system arises in part from *reduced* production of **secretory antibodies** that protect the nasal mucosa and respiratory tract mucosal surfaces from viral infection.

The decline of protective IgA helps explain why aging adults can be susceptible to infection by cold and flu viruses, as well as the *Streptococcus pneumoniae* bacterium, a cause of bacterial pneumonia in aging adults.⁴

To counteract this problem, researchers tested a unique **oral probiotic** blend designed to reduce the risk of respiratory infections by enhancing *secretory immunity*.

The term “secretory immunity” refers to production of specialized antibodies like **IgA** in the mucous membranes lining the nose, and portions of the windpipe and lungs.⁵

The importance of IgA antibodies is that they target both viral and bacterial invaders in the upper respiratory tract, deactivating them and presenting them for destruction by the immune system.⁶ This prevents both cold and flu viruses from gaining a foothold in the body. These pathogens are stopped before wreaking havoc in the body’s respiratory tract.

Blocking viral attachment to mucous membranes, in turn, prevents viruses from injecting their genetic material into human cells, and hence from replicating to produce more viruses.⁶

IgA is the acronym for **immunoglobulin A**. Increasing **IgA secretion** and breaking a viral replication cycle can prevent development of colds, influenza, and other respiratory infections.

Probiotics Slash Respiratory Infections

Researchers have identified several unique strains of targeted probiotics that have potent preventive effects on human respiratory infections. Their weapon against microbes, especially viruses that target the respiratory tract, appears to be the **stimulation of IgA**.

To see how this unique probiotic blend works to prevent infection by cold and flu, let’s look at a human clinical study. The trial was performed over the course of 90 days during cold and flu season with 250 subjects.⁷

The subjects were randomly assigned to receive either a placebo or a mixture of five unique probiotic strains specifically formulated to stimulate protective IgA:

- *L. plantarum* (LP 01-LMG P-21021)
- *L. plantarum* (LP 02-LMG P-21020)
- *L. rhamnosus* (LR 04-DSM 16605)
- *L. rhamnosus* (LR 05-DSM 19739)
- *B. lactis* (BS 01-LMG P-21384)

During the course of the three-month study, subjects were asked to report all daily respiratory symptoms (runny nose, cough, fever, bronchitis, or pneumonia), along with the length and severity of symptoms.

All diseases accompanied by fever were classified as “flu-like syndromes,” while a separate category of “influenza-like illnesses” was also used. Other categories were “bronchitis-like” diseases, upper respiratory tract infections, common cold, and cough without other symptoms.

The study showed reduction in symptoms and reduction in the duration of symptoms.





What You Need to Know

Prevent Colds and the Flu With Oral Probiotics

- Respiratory infections such as colds and the flu can be life-threatening for aging people.
- A major source of this age-induced susceptibility is the gradual loss of *secretory immunity*, mediated by secretory antibodies called IgA.
- IgA antibodies, secreted from mucous membranes in the mouth, nose, and lungs, bind to and block respiratory viruses from invading human cells and producing symptoms of colds and flu. But as their production fades, so does our immunity to these microbes.
- Recent studies have revealed the surprising fact that selected strains of oral probiotic bacteria are capable of stimulating the intestinal immune system, resulting in body-wide increases in secretory immunity.
- In the respiratory tree, this increase in IgA production leads to enhanced protection against cold and flu viruses.
- Studies have now demonstrated convincingly that supplementing with these strains of probiotic bacteria results in significant reductions in the incidence and duration of year-round respiratory infections.
- IgA is the acronym for immunoglobulin A.

The study findings showed:

- **16** episodes of “influenza-like illnesses” in the **placebo** group compared to **3** such episodes in the **probiotic cocktail** group (a significant **81% reduction**).
- **31** episodes of colds among placebo recipients compared to **20** reported cases in the **probiotic** group. This **35%** reduction did not quite achieve statistical significance.
- Cold duration fell from **6** days in placebo recipients to **4.7** days in the **probiotic** supplemented patients, a **22%** reduction.
- Cough duration fell in the patients given the **probiotic** cocktail from 7.3 to 4.5 days, a **39%** reduction.
- Total acute upper respiratory infections fell from **6.1** to **4.6** days in the **probiotic** group, a **25%** reduction.

A similar study showed a **48%** reduction in flu episodes on subjects using the **probiotic cocktail**. The number of days with flu symptoms decreased significantly by **55%**.⁸

Adding *Bacillus Subtilis* CU1 to the Probiotic Cocktail

In another study, scientists identified a sixth probiotic that also provided immune-stimulating features among aging adults at risk for respiratory infections.⁹

This bacteria, *Bacillus subtilis* CU1, creates a natural protective shield that resists the acid in the stomach, promoting the probiotics' survival into the digestive tract.¹⁰ Previous studies have shown that this strain of probiotic can stimulate **IgA** in humans, a mechanism of great interest in preventing respiratory infections.^{9,11}

A human clinical trial was conducted among healthy older adults (ages 60-74) who were randomly assigned to receive this probiotic or a placebo.⁹ Subjects took one capsule daily, containing two billion microorganisms per capsule.

Supplemented subjects experienced a significant **45%** drop in the frequency of respiratory infections. Notably, a concomitant significant **45% increase** in concentrations of **IgA** was demonstrated in their saliva, strongly suggesting that increased IgA was at least in part responsible for the observed impact. No significant side effects were noted in either group.

Unleashing the Nuclear Bomb to Stop Colds and Flu

The importance of taking aggressive actions upon the first signs and symptoms of viral respiratory infections is critical. This protocol or "nuclear bomb" should be initiated within 24-48 hours of the manifestation of serious cold and flu symptoms.

1. **800 mg of cimetidine** (and higher). This drug is sold over the counter in pharmacies to combat heartburn, but its beneficial side effect is to boost immune function by reducing T-suppressor cells, thereby keeping the immune system active.¹⁵ Cimetidine can interact with prescription medications, so consult with a pharmacist and your physician before using. For most people, cimetidine provides immune system stimulation that is particularly effective against certain viruses.
2. **9,000 mg of high-allycin garlic** once or twice daily. This potent form of garlic will cause painful stomach-esophageal burning if you don't eat food right afterward. Ingesting **9,000 mg** of this kind of garlic will cause you to reek of a strong sulfur odor, but saturating the body with it is the objective. Garlic has shown direct virus-killing effects in a number of published studies.^{16,17}
3. **200 mg of DHEA** early in the day. This is a high dose,¹⁸ but DHEA has shown some unique benefits in boosting one's ability to mount a stronger immune response and also protecting against dangerous inflammatory cytokine responses that sometimes occur in response to viral infections.
4. **1,200 mg** a day of **lactoferrin**. This natural constituent of mother's milk boosts natural killer-cell activity and can kill certain viruses.¹⁹
5. Two **18.5-mg zinc acetate lozenges** every two waking hours. Please be aware that this is a very high dose of zinc and is considered toxic if taken over the long term.^{20,21} You should only do this for a few days. Zinc has shown a direct effect of inhibiting cold viruses from latching onto your cells.¹⁹
6. **10-50 mg of melatonin** at bedtime (ordinarily, melatonin is taken at levels of just **1-3 mg** per evening). Melatonin induces a powerful immune response and this high dose can facilitate the deep sleep one often needs to fend off an infection. This dose of melatonin will make you extremely tired, so please only take this before bedtime and do not operate any machinery or vehicles after ingestion.²²
7. **3,600 mg** a day of **aged garlic extract**. There are unique immune-boosting compounds in aged garlic that work differently than those found in high-allycin garlic.²³
8. As discussed on the sidebar on page 45, the prescription drug **Tamiflu®** in the dose of **75 mg** twice a day should be started within 24 hours of flu symptoms manifesting to block entry of certain viruses into cells where they multiply.

Do not delay in implementing the above regimen. Once a flu virus infects too many cells, it replicates out of control and strategies like zinc lozenges will not be effective. Treatment should be initiated as soon as possible after symptoms manifest!

The Importance of Dendritic Cells

How can ingestion of a **probiotic** lead to increased secretion of **IgA** in the nose and throat?

IgA production can be stimulated or reduced throughout the body, depending on the environment sensed by specialized cells called *dendritic cells*. Dendritic cells can detect molecular patterns on the surfaces of the billions of bacteria and viruses we swallow every day, whether they enter our bodies through the mouth or the nose.⁷

Once dendritic cells have encountered these microbial identifiers, they “teach” other immune system cells about the nature of the threat, prompting them to pump out **IgA**, among other defensive molecules.⁷

IgA is secreted throughout the body, including mucous membranes of the mouth and nose.¹² Increased IgA in those areas results in increased protection against invaders attempting to enter the body through those membranes.⁷

Studies have demonstrated that orally-ingested probiotics stimulate IgA in the mucous membranes of the bronchi (larger air tubes in the lungs).^{7,12} Similarly, probiotics have been shown to reduce the incidence and severity of respiratory infections in children.^{7,13}



When Influenza Turns Deadly: Life-threatening Influenza Requiring Hospitalization

Those over the age of 65 as well as aging individuals with chronic diseases that may weaken the immune system, cardiovascular system, and/or respiratory tract (e.g. diabetes, cardiovascular, and chronic lung disease) are at higher risk of developing potentially life-threatening infections including the dreaded *influenza pneumonia* that is linked to a high mortality rate.

In contrast to younger and generally healthy patients, these high-risk patients may not necessarily manifest a high fever initially (a body temperature in excess of 102.5 degrees Fahrenheit) since impaired thermoregulation is observed with aging.

Headache, dramatic fatigue, muscle aches, a non-productive cough (initially), and nasal congestion are important signs and symptoms of influenza infection in older patients. Additional signs and symptoms in older patients may include cognitive dysfunction and confusion, difficulty walking, and falls.

Worrisome signs and symptoms for patients with influenza infection suggesting pneumonia include:

- Respiratory rate above 25 breaths per minute, reflecting difficulty with oxygenation
- Hypotension (blood pressure below **90/60 mm Hg**),
- Bloody sputum

Labs tests that also suggest severe disease include:

- Elevated lactate dehydrogenase (LDH)
- Elevated creatine phosphokinase (CPK)
- Hypoxemia (the inability to oxygenate the blood) increases rapidly to the point of respiratory failure in many of these patients requiring mechanical ventilation, often after only 24 to 48 hours.

The most important pharmacologic intervention to reduce the risk of death in these patients, in addition to cardiovascular and respiratory supportive measures, is rapid identification of viral strain, and rapid antiviral treatment with neuraminidase inhibitors, e.g., oseltamivir (Tamiflu®) and zanamivir (Relenza®), initiated as soon as possible, ideally within 24 hours.

Thus, orally ingested probiotics appear capable of sealing the age-induced gap in *secretory immunity* that puts so many older adults at grave risk for respiratory infections every year.

The discovery of the unique **IgA**-stimulating properties of oral **probiotics** opens a new world in modulation and strengthening of our aging immune systems, and provides a new weapon in our battle against respiratory illness.

Summary

A cold or flu can pose serious risks for aging adults. Such infections can lead to potentially fatal bacterial infections, particularly pneumonia, which kills more than 50,000 Americans annually.¹⁴

One main source of the age-related increase of viral respiratory infections is the loss of *secretory immunity*, which is controlled by a class of antibodies known as IgA.

As aging adults lose IgA protection, they lose their ability to defend against viruses attacking the mucous membranes in the nose, lungs, and bronchi of the respiratory tract.

Specific strains of probiotic bacteria, ingested orally, have the ability to *stimulate* IgA production in the respiratory mucous membranes, thereby preventing attachment by, and infection with, common viruses.

Human studies demonstrate that supplementation with the proper blend of **probiotic** strains reduces the incidence of colds and flu-like illnesses, an effect largely attributable to increases in levels of IgA. ●



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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Relieve Urinary-Tract Symptoms by Boosting Prostate Health

More than **50%** of men in their 60s and as many as **90%** of men in their 80s suffer **lower urinary-tract** symptoms related to **prostate** enlargement.¹

Common problems include urinary frequency, urgency, and weak stream. Over time, these urinary challenges can cause bladder infection, kidney stones, kidney damage, and erectile dysfunction.²⁻⁴

Frequent nighttime urination also results in chronic sleep deprivation—increasing the risk of heart attack,^{5,6} cancer,^{7,8} depression,⁹ inflammatory syndromes,^{10,11} and death.¹²

In lieu of drugs, **European** physicians have for decades prescribed natural **plant extracts** to alleviate urinary discomforts associated with benign prostate enlargement (BPH). Efficacy of these **plant extracts** has been demonstrated in a number of published medical studies.

Scientists have found that combining different **plant extracts** works better to alleviate prostate discomfort.

Conditions Causing Enlarged Prostate

A young healthy prostate gland weighs less than an ounce,¹³ but enlarges considerably as most men age.

Because of its location, even a small amount of prostate swelling can block the urethra, resulting in decreased urine flow and the potential for incomplete bladder emptying.

The majority of men who suffer from nonmalignant prostate enlargement have either **benign prostatic hyperplasia** or **prostatitis**.^{14,15}

Benign prostatic hyperplasia, or BPH, is a common cause of prostate enlargement that occurs when prostate cells increase in number. Men have a **50%** chance of developing BPH over the course of their lives.^{2,16} It leads to progressive urinary symptoms^{2,17,18} and erectile dysfunction.¹⁹⁻²¹ In severe cases it can cause kidney and bladder infections,²² bladder stones,²³ and other serious long-term problems.

Prostatitis is characterized by prostate inflammation or infection, and treating it is medically challenging.²⁴⁻²⁷ This is partly because prostatitis is an umbrella term for many conditions, including acute and chronic bacterial prostatitis, chronic nonbacterial prostatitis, inflammatory and noninflammatory prostatodynia (prostate pain), and asymptomatic inflammatory prostatitis.²⁸⁻³⁰

Scientists have found that men with persistent urinary problems can benefit by supplementing with *prostate-specific plant extracts*.

Saw Palmetto

The **saw palmetto berry** (*Serenoa repens*) was long ago shown to improve symptoms associated with an enlarged prostate.

Some studies suggest it helps relieve BPH symptoms as well as finasteride and tamsulosin,^{31,32} minus the sexual dysfunction associated with these drugs.³¹

One study found that **320 mg** of saw palmetto extract daily improved the International Prostate Symptom Score of elderly men by **52%** and their sexual dysfunction scores by **40%**.³² Another review demonstrated saw palmetto's efficacy, especially for men with mild-to-moderate BPH symptoms.³³

Two large meta-analyses showed that saw palmetto extract improved the **International Prostate Symptom Score**, reduced nighttime urination frequency, and improved peak urine-flow rates.^{34,35}

An underlying reason for these effects is that **saw palmetto** is rich in bioactive compounds—including *beta-sitosterol*—that support the aging prostate. One mechanism is to impede the adverse effect of dihydrotestosterone (DHT) on prostate cells. DHT is a hormone that increases prostate growth.³⁶ Blocking DHT receptors on prostate cells reduce DHT's potential negative impact.³⁷

Not all studies on **saw palmetto** by itself demonstrate clinical benefits.³⁸ For this reason, plant-based prostate formulas today include additional botanical extracts, and many are prescribed in Europe as “drugs” to alleviate urinary symptoms.



Nettle Root

Urtica dioica, or **stinging nettle root**, has been shown to shrink the prostate and relieve BPH symptoms.³⁹⁻⁴¹

One study showed that nettle root extract improved lower urinary tract symptoms significantly better than placebo, with marked **improvements** in the **International Prostate Symptom Score**, increases in **peak urinary flow rates**, and reductions in **urine volume** remaining in the bladder.⁴¹

Other compelling research found that the combination of nettle root and saw palmetto extracts results in improvements that are similar to those of prescription BPH medications, but with substantially fewer adverse events.⁴²⁻⁴⁴

Scientists demonstrated that stinging nettle combined with saw palmetto reduced nighttime urination by **one episode** nightly, a significant difference.⁴³ And, in elderly BPH patients, this combination reduced the International Prostate Symptom Score by **53%**, improved urinary flow by **19%**, and reduced residual urine volume **44%** compared to placebo.⁴⁵

While producing improvements similar to BPH drugs, this combination (nettle root and saw palmetto) results in far fewer adverse events.^{42,44}

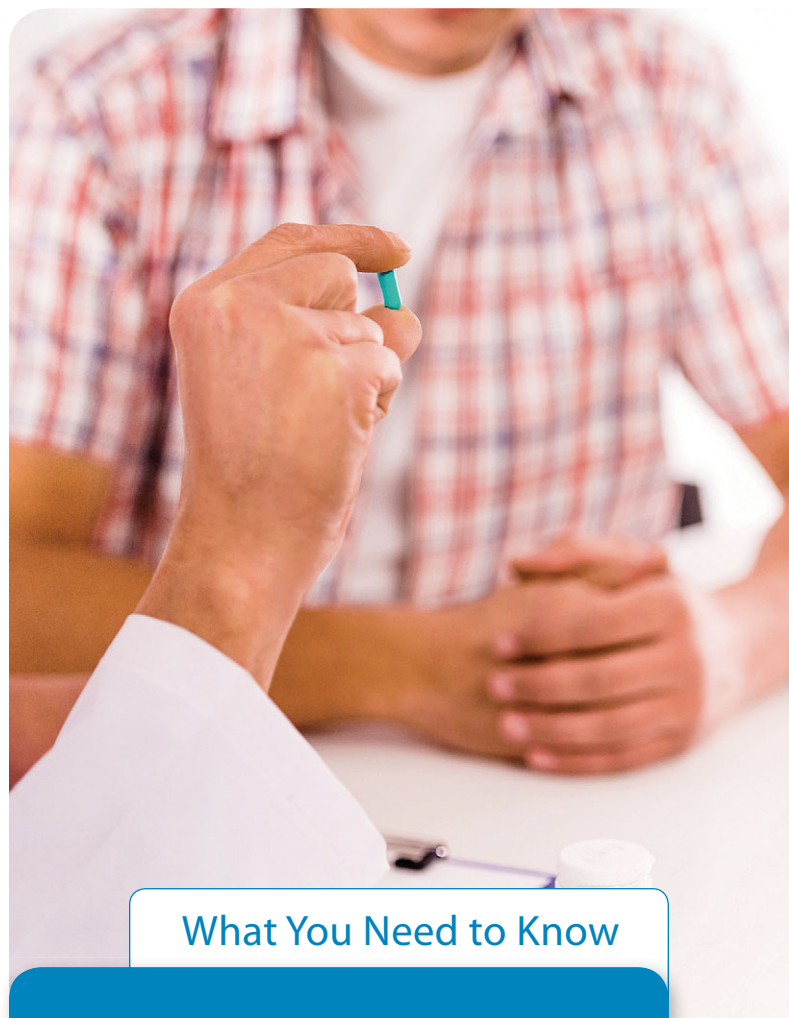
Pygeum Africanum

Pygeum africanum is a plum tree in tropical Africa, and an extract derived from this tree has been widely used in Central and Eastern Europe for decades. Numerous human studies have demonstrated the clinical efficacy of **pygeum extract** in the management of mild to moderate BPH.^{46,47}

Pygeum extract has been shown to improve International Prostate Symptom Scores by **38%-46%**,⁴⁷ reduce the frequency of nighttime urination by **32%**,⁴⁶ and raise peak urinary flow rates by **16%-19%**,⁴⁷—all at typical doses of **100 mg** per day.

In two different studies, scientists demonstrated that pygeum extract improves quality of life—a critical factor in this condition—by about **30%**.^{46,47}

In a meta-analysis of 18 randomized clinical trials that involved a total of 1,562 men, researchers found that **pygeum extract** reduced nocturnal urination by **19%** and increased urine flow by **23%**. Pygeum use also resulted in a critical reduction in the volume of urine remaining in the bladder after urination, which decreases the risk of urinary tract infections. The extract was also found to more than **double** the odds of a man reporting an overall improvement in urinary tract symptoms compared to men using a placebo.⁴⁸



What You Need to Know

Naturally Treat Urinary-Tract Symptoms

- BPH causes lower urinary tract symptoms in aging men and can result in serious complications, including bladder infections, kidney damage, and erectile dysfunction.
- It involves frequent nighttime urination that results in chronic sleep deprivation, in turn increasing the risk of heart attack, cancer, depression, inflammatory syndromes, and death.
- Several natural extracts have been found to safely shrink an enlarged prostate—as well as improve many of the unpleasant symptoms associated with BPH.



Rye

Pumpkin Seeds

Flaxseeds

Rye Flower Pollen Extract

Rye flower pollen extract reduces lower urinary-tract symptoms by selectively inhibiting the growth of prostate cells and effectively treating BPH.⁴⁹⁻⁵³

Confirming early findings,⁵⁰⁻⁵³ scientists treated 79 BPH patients (ages 62 to 89) with **126 mg** of pollen extract three times daily for at least 12 weeks. Maximum urine-flow rates increased about **18%**, average urine-flow rates increased nearly **18%**, and residual urine volume (urine left in the bladder after voiding) plummeted **45%**. Those taking the extract beyond one year experienced an average decrease in prostate volume of about **20%**, without adverse reaction.⁵⁴

A subsequent review revealed that BPH patients who were treated with pollen extract were **2.4 times** more likely to experience improvement and over **two times** as likely to reduce nighttime urination as the placebo group.⁵⁵

Pollen extracts have also demonstrated an ability to suppress prostatitis and prostatodynia (chronic pelvic pain). In early human studies, pollen extracts eliminated these conditions from many patients.^{56,57} This is exciting, given how difficult these conditions are to treat.

One study divided 90 chronic **prostatitis** patients into two groups, one without related complicating factors and one with complications such as prostate stones or bladder-neck narrowing. All took pollen extract three times daily for six months.⁵⁷ In the group without complicating factors, **78%** had a favorable response in their symptoms and **36%** experienced *complete elimination* of symptoms. Patients in the group with

complicating factors did not respond as well,⁵⁷ suggesting that pollen extract is most useful in patients who lack complications.

Landmark research showed that pollen extract may help patients for *whom no standardized treatment exists*. Patients with inflammatory prostatitis/chronic pelvic pain syndrome received pollen extract for 12 weeks. Over **70%** of supplemented patients showed at least a **25%** improvement in their **NIH Chronic Prostatitis Symptom Index** score.⁵⁸

Flower pollen extract was shown to improve the quality of life of patients with chronic prostatitis or chronic pelvic pain syndrome better than ibuprofen,⁵⁹ without severe side effects.^{59,60}

Pumpkin Seed

Pumpkin seeds have been used in traditional medicine for generations to treat prostate issues. Now, modern medicine is confirming their ability to reduce prostate size as well as improve symptoms associated with enlarged prostate.

A **2016** study on hyperplastic (proliferated) cells from prostate tissue showed that pumpkin seed extract safely inhibited cell growth by a remarkable **40%-50%**.⁶¹

The study author concluded that this “corroborates the (traditional medicine) use of pumpkin seeds for treatment of benign prostate hyperplasia.”⁶¹

Clinical studies have shown that pumpkin seed and pumpkin-seed oil significantly decreased **International Prostate Symptom Scores** within 3-12 months.^{62,63}

In **2016**, researchers conducted a review of studies related to lower urinary tract symptoms and BPH and found that all six clinical studies demonstrated that pumpkin seeds led to improvement in **International Prostate Symptom Score** and in volume and speed of urinary flow.⁶⁴

Flaxseed

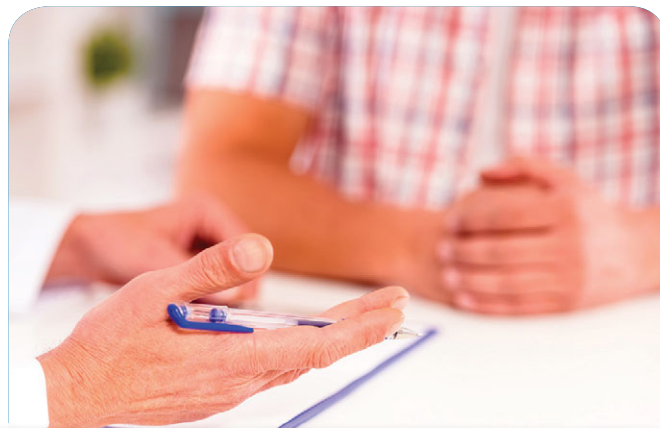
BPH patients who took **flaxseed lignan extract** experienced improvements in International Prostate Symptom Score and life-quality scores.⁶⁵ In a **2017** study of animals with induced BPH, a flaxseed diet was shown to reduce the thickness of the prostate epithelium, the outer layer of the prostate surface.⁶⁶

Summary

The life-disrupting, lower urinary-tract symptoms of BPH affect aging men and can lead to complications such as bladder infections, kidney damage, and sexual dysfunction.

The frequent nighttime urination associated with BPH also results in chronic sleep deprivation, which has been shown to boost the odds of heart attack,^{5,6} cancer,^{7,8} depression,⁹ inflammatory syndromes,^{10,11} and death.¹²

Abundant research demonstrates that a number of prostate-specific **plant extracts** can improve many of the symptoms associated with an enlarged prostate—and may also reduce prostate gland volume without significant side effects. ●



Natural Prevention of Prostate Cancer

Prostate cancer is the second most common malignancy among men,⁶⁷ with more than 160,000 American men expected to be diagnosed in 2017, according to the American Cancer Society.⁶⁸ It is also one of the most preventable cancers—because it tends to be very slow-growing and nutritional approaches can be highly effective.⁶⁹ The following is a list of nutrients that have been found to protect against the development of prostate cancer.

Lycopene: High consumption of lycopene—the carotenoid pigment abundant in tomatoes and other red fruits and vegetables—delivers potent effects against prostate cancer and is associated with a **59%** lower risk of dying from more aggressive prostate cancers.⁷⁰⁻⁷³ One **2016** clinical trial on 79 prostate cancer patients demonstrated that lycopene-rich tomato products significantly decreased PSA compared to controls.⁷⁴ By suppressing critical “master regulatory molecules,” such as nuclear factor-kappa B (NF-κB), lycopene inhibits inflammatory processes that promote prostate—and many other—cancers.⁷⁵

Pygeum: Research demonstrated that administering the bark extract of *Pygeum africanum* to mice specifically bred to develop prostate cancers significantly lowered their risk of developing this malignancy. Pygeum applied directly to prostate cancer cells in culture inhibited cell proliferation, induced apoptosis, and bound to androgen

receptors used by the tumor to sustain growth.⁶⁹ When serum taken from a man who was supplementing with pygeum extract was applied to prostate cells in culture, it decreased proliferation of prostate cells and upregulated genes involved in tumor suppression.⁷⁶

Boswellia extract: When an extract of *Boswellia serrata* is applied to cultured prostate-cancer cells, it induces apoptosis.⁷⁷⁻⁸⁰ Research showed that boswellia components may prevent tumor growth by blocking receptors for androgen, the male hormone,⁸¹ and by inhibiting the formation of new blood vessels (angiogenesis) which further deprives tumors of nutrients.⁵⁴

Flaxseed: Scientists demonstrated that flaxseed lowers PSA levels and significantly reduces proliferation of both normal and cancerous prostate cells.^{82,83} In a clinical study, flaxseed reduced tumor proliferation rates in prostate cancer patients in as few as 30 days.⁸²

Boron: Men with the highest dietary boron intakes have a **54%** lower risk of prostate cancer compared to those with the lowest intake.⁸⁴ Boron blocks growth factors necessary for tumor development and inhibits the enzymatic action of PSA.⁸⁵ Human prostate cancers implanted in mice were smaller by **38%** following low-dose boron supplementation while serum PSA levels fell **89%**.⁸⁵

**If you have any questions on the scientific content
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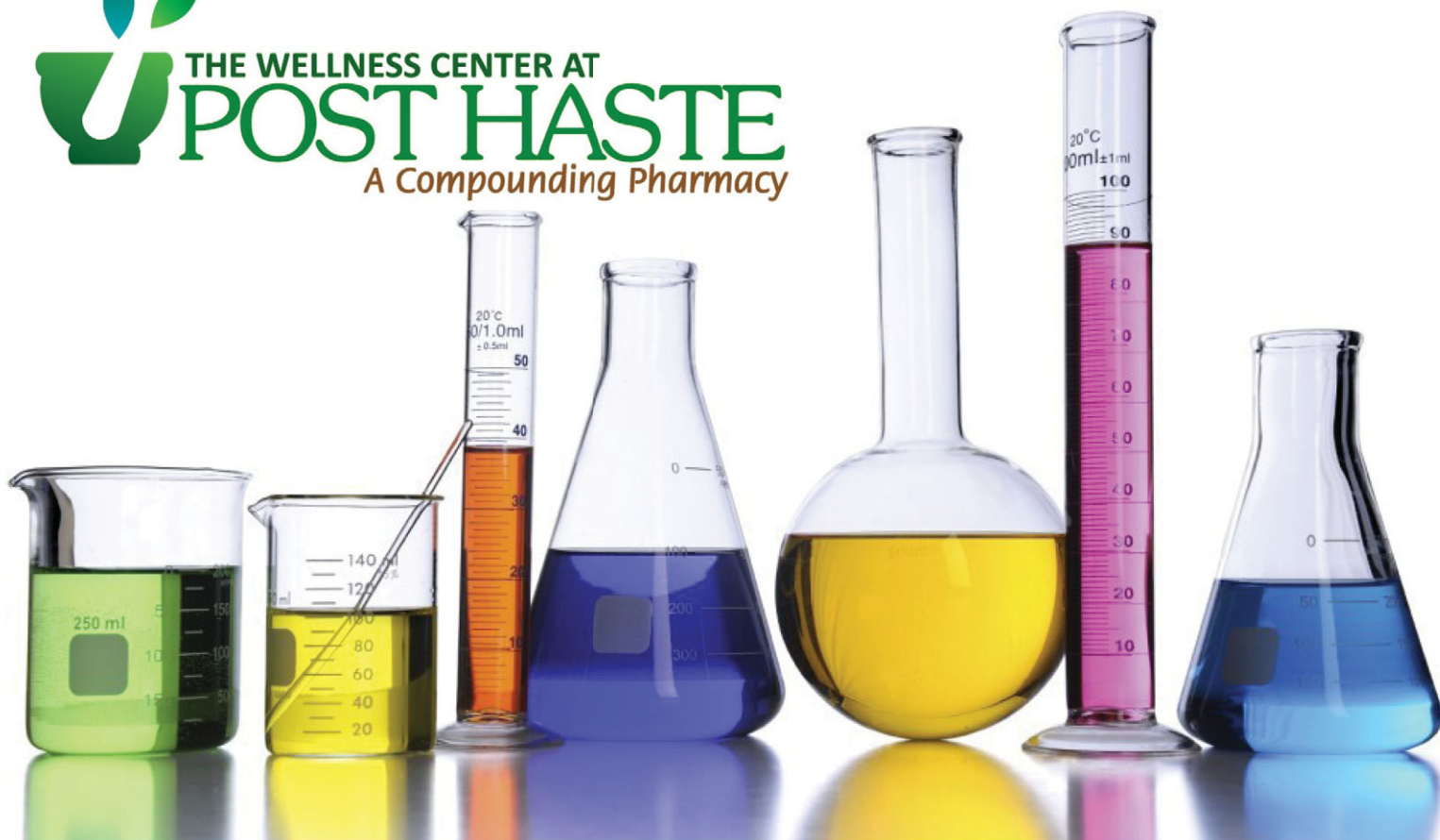
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REVERSING *a Root Cause of* GLAUCOMA

Glaucoma is one of the leading causes of blindness, affecting approximately **2.7 million** Americans.¹

In the past year, studies have found new links between **glaucoma** and a host of diverse risk factors, such as tooth loss,² obstructive sleep apnea,³ genetic predisposition⁴ and potentially diabetes.⁵ Drugs such as corticosteroids are also implicated in glaucoma risk.⁶

The most common risk factor for glaucoma is **increased pressure in the eye**, which can cause irreversible damage to the **optic nerve**.⁷

There is usually no pain associated with increased eye pressure,⁸ which means you could be at risk for glaucoma—*and not even know it*.

But while glaucoma itself is irreversible, studies have shown that it is possible to prevent—or even **reverse**—the major underlying cause.

In a human study, a proprietary extract of **French maritime pine bark** combined with **bilberry** extract reduced eye pressure by as much as **24%**—with reductions of **40%** when combined with standard therapy.⁹

A Vision-Robbing Disease— Without Warning Signs

People who are developing **glaucoma** generally have no symptoms. They feel no pain.^{8,10}

One day their vision is normal, the next they begin to realize that they are missing some objects that would normally fall within their peripheral vision. At this first sign, the progression that may eventually lead to blindness is well underway.¹⁰

In most cases, glaucoma occurs when fluid builds up, creating abnormal **intraocular pressure** within the eye. Over time, this pressure damages the retina and the **optic nerve**, resulting in reduced visual acuity and possibly leading to blindness.¹¹

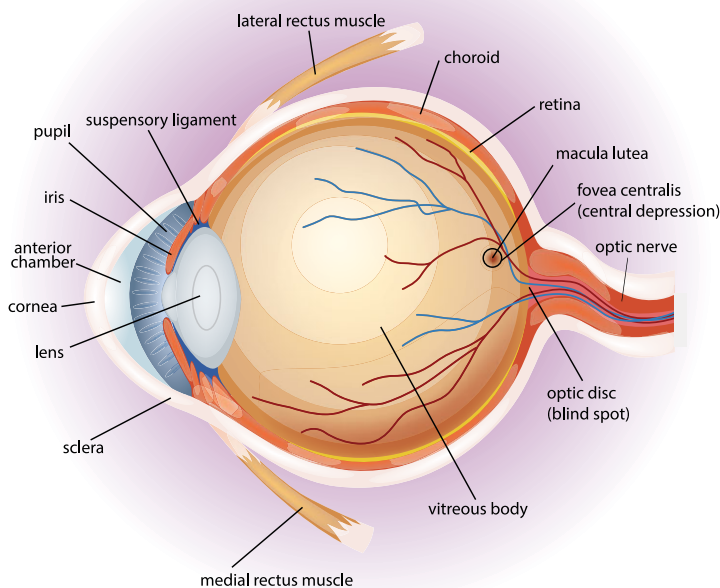
What Causes Increased Eye Pressure?

The transparent fluid that fills the anterior part of the eye between the lens and the cornea is called **aqueous humor**.¹² This fluid has numerous jobs, including providing nutrition to the anterior part of the eye and transporting the metabolic debris produced there to the bloodstream so that we can see clearly.

The appropriate production, circulation, and drainage of this fluid are essential for eye health.

Open angle glaucoma, which is diagnosed in at least **90%** of glaucoma patients, is the most common form of the disease.¹³ Over time, the drainage channels become blocked, fluid builds up, and intraocular pressure rises.¹⁰

Anatomy of the Human Eye



Additionally, endothelial dysfunction and vascular structural changes can substantially alter blood flow within the tissues and elevate intraocular pressure, leading eventually to open angle glaucoma.¹⁴

Whether or not you develop glaucoma as a result of increased intraocular pressure depends on the level of pressure your optic nerve can tolerate without being damaged.¹⁰ However, once the optic nerve is damaged, it can't be repaired—even if the raised intraocular pressure is corrected.^{15,16}

This makes it extremely urgent to find a way to reverse high intraocular pressure *before* it causes the irreversible damage of glaucoma.

The Search for a Solution

Scientists turned to past research to find the best possible natural candidates for treating this condition. Their search led them to **French maritime pine bark** and standardized **bilberry extract**.

Previous studies had shown that these extracts could successfully counteract **retinopathy**, which is persistent or acute damage to the retina.^{9,17} This led investigators to examine the usefulness of these plant extracts in countering the drivers behind increased intraocular pressure.

What they found was that French maritime pine bark could improve the function of the **endothelium**, the delicate layer of cells lining the blood vessels. Disorders of **endothelial function** are contributing factors to the development or progression of glaucoma.^{9,14}

Other studies showed that bilberry extract could counteract hyperpermeability of the ciliary capillaries. The beneficial effect is significantly increased ocular blood flow, resulting in reduced intraocular pressure.¹⁷

It became clear that these **two extracts** may work together to:

- Decrease inflow of aqueous humor;
- Improve microvascular tone and integrity;
- Decrease resistance across the region of the eye responsible for fluid drainage, and possibly;
- Contribute to better fluid outflow.

The ability of both bilberry and French maritime pine bark to target critical aspects of increased eye pressure led scientists to formulate a compound that combined these two. The next step was to conduct human studies that tested the dual-extract formulation.

Remarkable Drop in Eye Pressure

In an initial controlled study of this dual compound, scientists measured blood flow in the eyes of 38 volunteers who had high **intraocular pressure** but who had not yet shown evidence of glaucoma. One group took the **pine bark-bilberry compound** orally for six months and the second group did not.¹⁷

At three months, the group taking the pine bark-bilberry compound showed a statistically significant **13% reduction** in intraocular pressure. Compared to untreated participants, the treated group also had improved ocular blood flow in three different blood vessels.¹⁷

A follow-up study showed that taking the same pine bark-bilberry compound for longer led to even greater improvements.

In this study, 79 individuals with intraocular pressure who had not yet shown signs of open angle glaucoma were divided into three groups:

1. The first group received the pine bark-bilberry extract,
2. The second group received standard medical therapy with latanoprost (Xalatan®) eye drops,
3. The third group received both the pine bark-bilberry compound and the latanoprost drops.⁹

All three treatment groups demonstrated a reduction in intraocular pressure. Subjects using the prescription eye drops lowered their eye pressure by an average of **28%**, beginning from the fourth treatment week. Those participants taking the **pine bark-bilberry** formulation reduced their eye pressure significantly beginning in the sixth treatment week and throughout the study, leading to a **24%** reduction in the sixteenth week—comparable to the drug, but with a better safety profile.⁹

But by far, the most compelling results were seen in the group that used the combination of **pine bark-bilberry** formulation and the latanoprost drops. A significant, average reduction in intraocular pressure of **28%** began at four weeks—but when the study ended at 24 weeks, the decrease in eye pressure had reached an approximate **40%**!⁹

The **pine bark-bilberry** compound appeared to have an additive effect with the latanoprost drops to **amplify** the reduction of intraocular pressure better than either agent alone.⁹

Critically, the subjects experienced a significant increase of ocular blood flow.⁹

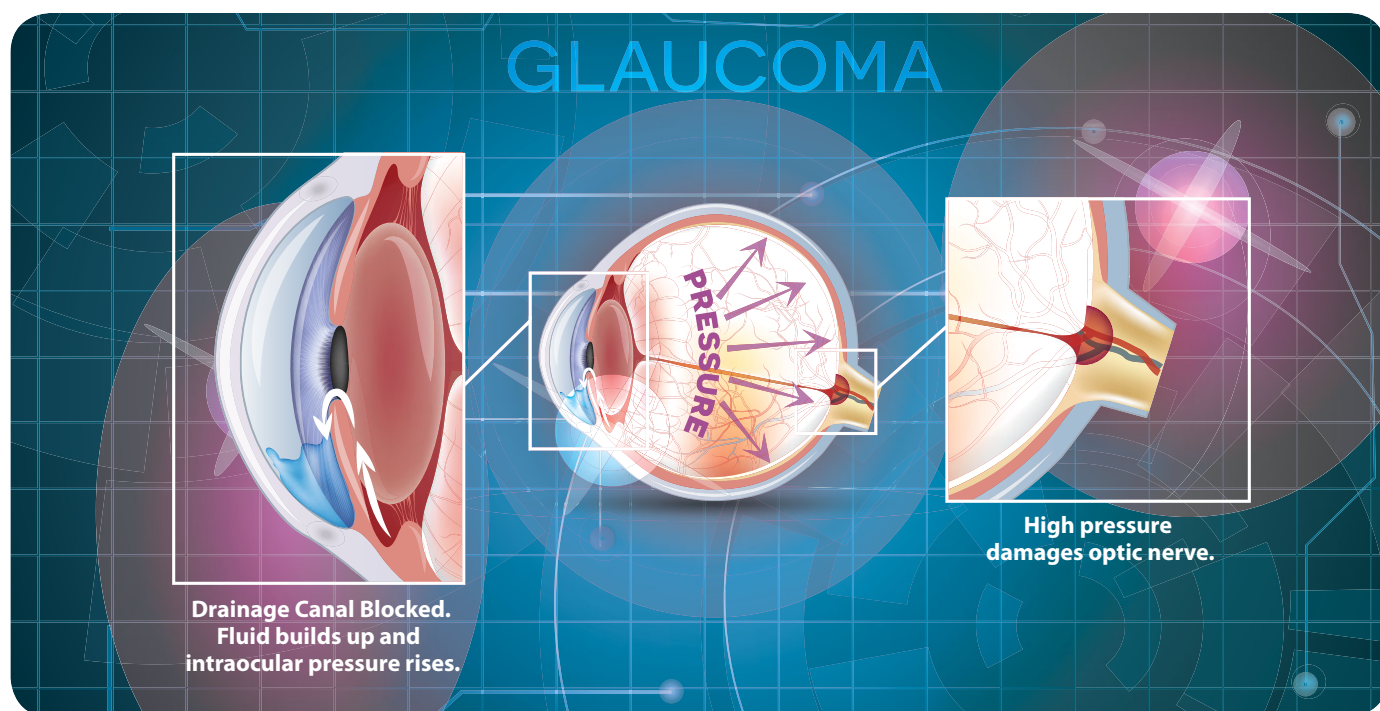
The study author noted that, “No serious side effects occurred during the study, apart from standard side effects in patients *related to latanoprost*.”⁹



What You Need to Know

Preventing Glaucoma

- Glaucoma is one of the leading causes of blindness in the US.
- The most common risk factor behind glaucoma is an increase in intraocular pressure, which can damage the optic nerve.
- While glaucoma itself is irreversible, it is possible to prevent or reverse the increased intraocular pressure that can cause it.
- Clinical studies have shown that increased eye pressure can be lowered by **24%** with a proprietary extract of French maritime pine bark and bilberry extract and—when combined with standard therapy—by a compelling **40%**!



French Maritime Pine-Bark Extract

Numerous studies have given us insight into why these two extracts have such beneficial effects on eye pressure.

Each extract has its own range of actions that appear particularly suited to aiding the complex balance at the level of the eye chambers.⁹

French maritime pine bark is rich in plant-based **proanthocyanidins** and was found to have numerous biologic effects, including:

- The scavenging and neutralization of harmful free radicals,
- Regulation of the cell's antioxidant network and associated genes,
- Anti-inflammatory effects (through the dampening of gene expression related to the nuclear factor-kappaB-dependent pathways inside cells),^{18,19}
- Improved vascular endothelial function,²⁰ and
- Improved microcirculation from antiplatelet effects and clot-formation prevention.^{21,22}

One **2015** study appeared to show beneficial effects on intraocular pressure when volunteers were given **French maritime pine bark** combined with extracts of blueberry and green tea.²³

French maritime pine bark's powerful antioxidative capacity—which can protect the eye's drainage system—is mirrored in the strong, free radical-quenching effects of bilberry extract.

Standardized Bilberry Extract

Bilberry (*Vaccinium myrtillus*) and other related berries are known for superior free radical-scavenging activity as well as genetic signaling ability.²⁴ Bilberry has been shown to bolster the body's defense systems against dangerous oxidative stress,²⁵ and it has also been shown to be beneficial in atherosclerosis.²⁶

Specifically using tissue from the pigmented layer of the retina, scientists found that bilberry positively influenced beneficial pathways involved in the antioxidant response effort.²⁵

Bilberry has also been shown to provide protective effects in other models of inflammatory disease such as uveitis in a dose-dependent manner.²⁷

A Significant Step Toward Prevention

Even with standard medical or surgical therapies, some glaucoma patients still progress to vision loss.⁸ Unfortunately, this loss is permanent. Until a cure is found, research is urgently needed to identify ways to *prevent* this devastating disease.

There currently is no accepted preventive strategy for glaucoma. The best defense to date involves rigorous and regular eye examinations by a trained professional.

However, delicate eye tissues—under assault by environmental toxins and cellular byproducts associated with aging—can greatly benefit from nutritional and other therapeutic support against glaucoma and other sight-robbing diseases.²⁸

The human studies described in this article are promising and mark an important initial step toward finding ways to prevent glaucoma. The dual-extract formulation of **pine bark** and **bilberry** has been shown to lower intraocular pressure by almost **40%** in conjunction with prescribed eye drops that do involve some risk.^{9,29}

While this may bring hope to those with elevated eye pressure, it is important to note that high intraocular pressure may not always be the defining characteristic for diagnosing glaucoma or predicting whether the disease will worsen.³⁰ Statistics show that **15%** of patients with characteristic glaucomatous nerve damage have intraocular pressure measurements that fall within the normal range.³¹ Such cases may be partly due to poor blood flow to the optic nerve.³²

Until a cure is identified, greater research into prevention strategies is needed.

Summary

Increased pressure in the eye is the most common underlying cause of glaucoma, and it usually occurs without pain or other warning signs.

Human studies demonstrate that increased intraocular pressure can be significantly reversed with a proprietary extract of **French maritime pine bark** and **bilberry** extract.

In a human study, this formulation reduced eye pressure by **24%** and—when combined with standard therapy—by up to **40%**!

While there is no cure for glaucoma, the **pine bark-bilberry** formulation we have described appears to represent a substantial breakthrough along the road to even greater preventive or curative discoveries. ●

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



Understanding Glaucoma

The term “glaucoma” refers to a common group of similar conditions that damage the retina and optic nerve, leading to visual impairment. There are many risk factors for glaucoma that range from genetics and age to lifestyle factors.

Increased intraocular pressure is by far the most significant factor, and the one most associated with glaucoma. In general, those aged 60 and older are at a higher risk of developing glaucoma regardless of increased intraocular pressure. Amongst ethnic groups, African-Americans have the highest risk for glaucoma in the US. In addition, individuals with history of high blood pressure or diabetes are also at an increased risk. Certain medications, like corticosteroids also increase the risk of glaucoma.³³

It is important to note that **normal tension glaucoma** can develop in the absence of increased intraocular pressure and cause optic nerve damage. People with family history and those of Japanese ancestry are at a higher risk for this type of glaucoma.³⁴

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BY ALMA ROSS

Pomegranate Improves Markers of Aging

Pomegranate's heart benefits have led researchers to investigate in what ways this red fruit can keep us healthy.

In a recent finding, Swiss researchers have identified a new molecule that results from digesting two compounds found in pomegranates: punicalagins and ellagitannins. This unique molecule, known as **urolithin A**, helps rejuvenate **mitochondria**, our cellular powerhouses.¹

Urolithin A opens the door to potential new therapeutic treatments against age-related disorders, including **frailty**, which is a risk factor for disability, hospitalizations, and mortality.²



What is Urolithin A?

Urolithin A is produced by the body after ingesting compounds found in pomegranate such as punicalagins and ellagitannins and can help recycle defective mitochondria.

What A New Study Showed

Researchers first studied **Urolithin A** on a common worm called *C. elegans*. This worm is often used in anti-aging studies because after just 8-10 days it's considered elderly. Its short lifespan allows scientists to observe and measure the effects of aging in a little over a week.

The researchers administered **urolithin A** to a group of these worms and noted that **lifespan** in the **urolithin A** group increased by more than **45%** compared to the control group.¹

Next, the team performed several rodent studies and found that **urolithin A** improved muscle function and removed damaged mitochondria before they accumulate and cause cellular dysfunction throughout the body. Scientists know that with age, mitochondria lose their strength and die off thereby "clogging up" cells with debris that impedes their function.

In the first mouse study, urolithin A administration over the long-term was found to *increase* muscle function of aging mice. Compared to the control group, the supplemented group showed a **57% increase** in the level of spontaneous exercise measured by the running wheel and a **9% increase** in grip strength.¹

In a second mouse study, this time involving a shorter treatment regimen on aged mice, urolithin A was found to increase running endurance by an average of **42%**.¹

Following these findings on aging mice, the team performed another study, also evaluating the impact of urolithin A on muscle function in young rats. Muscle function was evaluated by measuring voluntary running in activity wheels. Once again, treatment with urolithin A proved to be effective, this time by *increasing* the running capacity by **65%** compared to controls.¹

The administration of urolithin A resulted in an enhanced exercise capacity in young and older rodents. Muscle strength *increased* and running endurance was robustly augmented. Together, these different studies highlight that the administration of urolithin A, both short- and long-term, improved muscle function throughout different stages of life by improving muscle quality.

Translating these Findings into Humans

Over time, the constant strain of energy production takes a toll on the mitochondria and energy output declines. At this point, these mitochondria function poorly and are basically useless. In young, healthy cells, the drop in performance of the mitochondria is identified by the body and the mitochondria are swiftly broken down, disassembled, and eliminated in a process called mitophagy. In this way, defective or less-than-optimal mitochondria are eliminated, giving room to new mitochondria and ensuring that optimal cellular function is maintained.

With age, our cells struggle to recycle defective mitochondria, leading to a progressive build-up of malfunctioning mitochondria that take up valuable space in the

body's cellular system. This mitochondrial degradation affects the health of the cells, gradually weakening tissues. This process has been suspected of playing a role in many disorders of aging, such as Parkinson's disease.³

In humans, the inability to remove these useless mitochondria in skeletal muscle has been linked to reduced mobility in the elderly.¹ The progressive decline of muscle function contributes to a progressive state of generalized frailty.

In addition, the **frailty** associated with old age is an important risk factor for disability, hospitalization and mortality.² Thus, the muscle weakness seen in the elderly might be due to an increase in the accumulation of useless mitochondria. Results from the rodent studies strongly suggest that improvement of muscle quality may be achieved by enhancing mitochondrial function with **urolithin A**.

The results from these recent Swiss studies suggest that supplementation with **pomegranate extract** to boost the body's content of urolithin A may be an innovative approach to maintaining healthy mitochondrial and muscle function.

Encouraged by their initial findings, the study authors are currently conducting clinical trials testing a special delivery method of finely calibrated doses of urolithin A in humans. These trials are currently taking place in a number of hospitals across Europe.⁴

Urolithin A Helps Fight Cancer

Despite aggressive surgical care and chemotherapy, nearly **50%** of people with colorectal cancers develop recurrent tumors.⁵ This

may be due in part to the survival of dangerous colon-cancer stem cells that resist conventional chemotherapy and act as "seeds" for subsequent cancers.⁶

In an interesting finding, researchers exposed colon-cancer stem cells from a patient with colorectal cancer to either a mixture containing **85%** urolithin A or **30%** urolithin A. The results were impressive. The higher urolithin A concentration mixture was most effective at inhibiting the number and size of colon-cancer stem cells and inhibiting the activity of *aldehyde dehydrogenase*, a marker of chemoresistance.⁷

This therapeutic approach is exciting because traditional therapies against cancer lack the ability to kill or stop the proliferation of cancerous *stem cells*. These new findings support the notion that a nutrient approach may prove valuable as an alternative treatment or preventive intervention for targeting these harmful cells.

Neuroprotective Effects

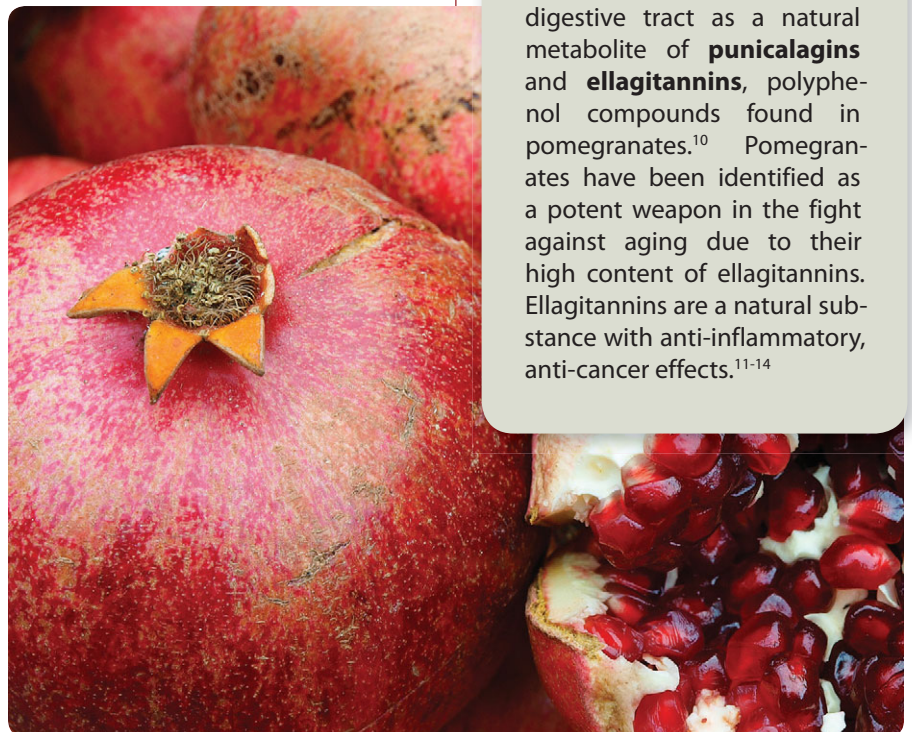
The connection between pomegranate and its neuroprotective effects against Alzheimer's disease has been well established in animal studies.⁸ However, the bioactive constituents for this action were unknown until now.

Alzheimer's disease is expected to affect over 115 million people worldwide by the year 2050.⁹ A group of researchers looked at a previous animal study that reported on the anti-Alzheimer's effects of pomegranate extract constituents.⁸

The team evaluated the ability of these components to cross the blood-brain barrier and found that a methylated form of urolithin A (mUA), derived from pomegranate, along with other urolithins were capable of doing so.

Urolithin A

Urolithin A is generated in the digestive tract as a natural metabolite of **punicalagins** and **ellagitannins**, polyphenol compounds found in pomegranates.¹⁰ Pomegranates have been identified as a potent weapon in the fight against aging due to their high content of ellagitannins. Ellagitannins are a natural substance with anti-inflammatory, anti-cancer effects.¹¹⁻¹⁴



And, although more research is needed, the authors concluded that **urolithins** are the possible compounds responsible for the anti-Alzheimer's effects that include protection against neurotoxicity and β -amyloid fibrillation. These results are promising, and suggest the need for exploring other naturally-based dietary intervention strategies for preventing or slowing down the progression of Alzheimer's.

The results and data from these various studies further support the importance of polyphenol metabolite compounds like urolithin A from pomegranate and their role in the fight against colon cancer and neurodegenerative diseases.

Summary

The discovery of urolithin A, that results from the punicalagins and ellagitannins compounds found in pomegranates, provides new opportunities to fight age-related decline of mitochondrial function and the resulting frailty and loss of muscle.

By helping cells renew themselves and optimizing muscle performance, pomegranate extract and its newly identified metabolite, urolithin A—could prove successful.

Along with these findings, there is supportive evidence of the powerful effects that urolithin A has against Alzheimer's disease and cancer, offering yet another tool to fight against these devastating conditions that affect many aging individuals.

This nutritional approach opens up possibilities that traditional pharmaceutical approaches have never explored. ●

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

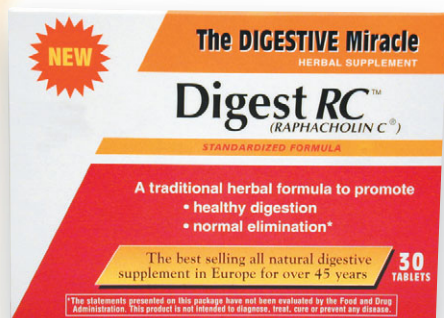
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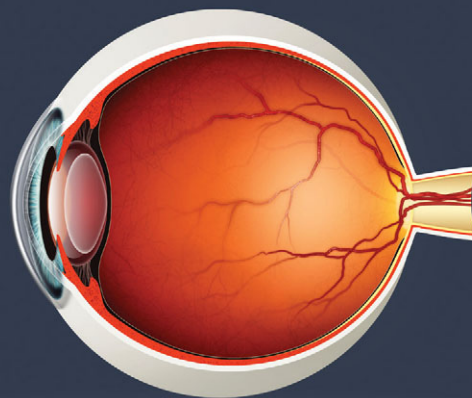
In addition, new research shows lactoferrin increases tear production following cataract surgery by **95%** and tear break-up time by **77%**, which promotes eye protection.³

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* J Diet Suppl. 2011 Jun; 8(2):158-68

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BY BEN BEST

2017 Cardiovascular Disease Prevention Symposium



The best way to prevent cardiovascular disease (atherosclerosis, high blood pressure, heart attack, stroke, etc.) is with a healthy lifestyle—eat healthy foods, exercise, don't smoke, and don't gain weight.

For many people this lifestyle is too difficult or troublesome. Physicians attempting to encourage this lifestyle are often not successful and must resort to drugs.

Drugs are usually effective in reducing blood pressure. **Statin** drugs lower LDL and total cholesterol. One in four Americans age 45 and over takes a statin.¹

Blood plasma is **92%** water. Water and oil don't mix, so in order to transport fat in the bloodstream from the liver to body tissues, fats must be bound to **lipoproteins**. The two main forms of fat transported in the bloodstream by lipoproteins are **triglycerides** and **cholesterol**.

Two predominant lipoprotein particles are **LDL** (low density lipoprotein) and **HDL** (high density lipoprotein). Cholesterol attached to LDL (LDL cholesterol) is often called "bad cholesterol," because the LDL particle can deposit the cholesterol behind blood vessel walls, causing atherosclerosis.

HDL cholesterol is called "good cholesterol" because the HDL particle transports cholesterol back to the liver. This classification is misleading because both LDL and HDL can be either beneficial or harmful, depending on particle size, oxidation, and other factors.

Statin drugs reduce plasma levels of LDL cholesterol by inhibiting cholesterol formation in the liver.

PCSK9 is a naturally occurring human *enzyme* that causes LDL receptors to be degraded. If PCSK9 activity is blocked, more LDL receptors will be present on cells to remove LDL cholesterol from the blood. This results in decreased levels of blood LDL cholesterol. (PCSK9 stands for "Proprotein Convertase Subtilisin Kexin⁹.")

PCSK9 inhibitors are a new and expensive class of drugs that sharply reduce plasma LDL cholesterol.

Dr. Michael Ozner is a member of the **Life Extension Scientific Advisory Board**, a board certified cardiologist, and director of an annual symposium on preventing cardiovascular disease. This report concerns presentations made at his **February 2017** symposium.

Conference Overview

Michael Ozner, MD (medical director, Center for Prevention and Wellness, Baptist Health South Florida, Miami, Florida) as director of this symposium gave an overview of topics related to cardiovascular disease prevention. Dr. Ozner emphasizes the importance of a healthy lifestyle, noting that even in patients with high genetic risk for coronary artery disease, a healthy lifestyle can reduce that risk by half.²



Dr. Ozner is a firm believer in the benefits of the diet eaten in the region of the Mediterranean sea (one of his books is titled *The Complete Mediterranean Diet*). He mentioned a study of over 100,000 health professionals which found that replacing 5% of dietary saturated fat with either polyunsaturated fat, monounsaturated fat, or whole-grain carbohydrate reduced coronary heart disease risk by 25%, 15%, or 9%, respectively.³ Aerobic exercise can reduce plasma triglycerides by up to 20%.⁴

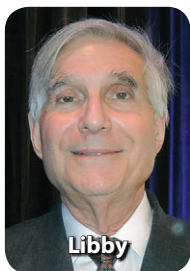
Concerning blood lipids, Dr. Ozner is very concerned about apolipoprotein B (**apoB**), which is the primary protein portion of all cholesterol particles other than HDL cholesterol.

High **apoB** is a better predictor of cardiovascular disease than high levels of LDL cholesterol.⁵ High apoB indicates numerous small, dense LDL cholesterol particles, the form of LDL which is most likely to be oxidized and cross blood vessel walls to cause atherosclerosis.⁶ High apoB in young adults predicts coronary artery calcification in midlife.⁷

Reduction of LDL cholesterol with statin drugs has been shown to reduce the incidence of heart attack and stroke.^{8,9} Using both a statin and anti-PCSK9 antibody is even more effective at lowering LDL cholesterol than statin alone.^{10,11}

Triglycerides and Cardiovascular Disease

Peter Libby, MD (cardiovascular specialist, Brigham and Women's Hospital, Boston, Massachusetts) spoke about the increasing levels of plasma triglycerides in Americans. Roughly a quarter of American adults have excessively high levels of blood triglycerides.¹² Triglyceride-laden lipoprotein is an even greater cause of coronary heart disease than LDL cholesterol.¹³



Dr. Libby has noted that high HDL cholesterol tends to be associated with low plasma triglycerides, and vice versa.¹⁴ But

when HDL is loaded with triglycerides, the HDL can become proinflammatory and cause atherosclerosis.¹⁴ High levels of triglycerides on any of the lipoproteins cause inflammation.¹⁵

Elevated triglycerides are associated with cardiovascular disease even in patients who have been successfully treated with statins.¹² When type II diabetics have high triglycerides, they show greater coronary artery calcification (atherosclerosis).¹⁶

Potential Benefit of HDL Cholesterol

Sergio Fazio, MD, PhD (director of the Center for Preventive Cardiology at Oregon Health & Science University, Portland, Oregon) is concerned with the effects of HDL cholesterol on cardiovascular disease. Even among persons with low LDL cholesterol, those with the highest HDL cholesterol have less risk of cardiovascular disease than those with low HDL cholesterol.¹⁷ But while clinical trials have succeeded in raising HDL cholesterol in patients, this did not reduce cardiovascular disease risk.^{18,19}

HDL cholesterol can become proinflammatory when LDL cholesterol is high.²⁰ Another reason why raising HDL cholesterol was not effective may have been that there are different forms of HDL cholesterol, with some forms being more protective than others.²¹ HDL subclasses appear to have different functions. For example, small HDL particles appear to have the capacity to remove cholesterol from atherosclerotic plaques.^{22,23}

A newly discovered compound known as **CSL112** is capable of making HDL cholesterol particles smaller, and thereby more efficient at removing cholesterol from atherosclerotic plaques.²⁴ CSL112 has not shown any harmful effects in clinical trials.



High Blood Pressure

William Cushman, MD (professor, Preventive Medicine, University of Tennessee, Memphis, Tennessee) is concerned with high blood pressure as a cause of cardiovascular disease.



Nearly one third of American adults have **systolic blood pressure** (when the heart contracts) greater than **140 mmHg** and **diastolic pressure** (when the heart relaxes) greater than **90 mmHg**.²⁵

This high level (>**140 mmHg** systolic) of blood pressure raises the risk of coronary artery disease **44%**, raises the risk of stroke **57%**, raises the risk of heart failure **88%**, and raises the risk of kidney failure **95%**.²⁶ A clinical study investigated whether persons having a systolic pressure above **130 mmHg** would benefit from therapy to reduce systolic pressure to less than **120 mmHg**. Three years after systolic blood pressure was lowered, death rates dropped by about **25%**.²⁷

Approximately a quarter of persons with high blood pressure (systolic pressure above **140 mmHg**) cannot reduce their blood pressure with three medications (**resistant hypertension**).²⁸ Most often, people with resistant hypertension are obese or elderly.

People with high blood pressure are more likely to have their blood pressure increased by salt consumption than people with normal blood pressure.²⁹ Eating foods higher in potassium, such as fruits and vegetables (rather than cereals and meats) can lower blood pressure.³⁰ The American Heart Association has estimated that increasing potassium consumption can decrease blood pressure and lengthen lifespan by several years.³⁰

Life Extension® has long advocated optimal blood pressure in most people to be **115 mmHg** systolic and **75 mmHg** diastolic. Newer studies corroborate the benefits of having lower normal blood pressure readings.

Stroke Risk

Ian del Conde Pozzi, MD (cardiologist, West Kendall Baptist Hospital, Miami, Florida) spoke of the risk of stroke. More than **60%** of patients with type II diabetes die of cardiovascular disease. But glucose control does not affect their risk of stroke.³¹ High blood pressure is the major risk factor for stroke.



A meta-analysis of 16 trials involving more than 70,000 patients showed that blood pressure-reducing

medications lowered the incidence of stroke by **22%**.³² Statin drugs were also shown beneficial. Clinical trials have shown that every **39 mg/dL** decrease in **LDL** cholesterol resulted in a greater than **21%** reduction of **stroke** risk.³³

Omega-3 Fatty Acids in Fish Oil

Carl Lavie, Jr., MD (cardiologist, Ochsner Medical Center, New Orleans, Louisiana) discussed how the



omega-3 fatty acids found in **fish oil** can reduce cardiovascular disease.

Fish oil supplements have been shown to reduce **inflammation** and blood vessel constriction,³⁴ while reducing irregular heartbeats (cardiac arrhythmias).³⁵

Approximately a third of Americans have excessively high blood triglycerides.³⁶ High blood triglycerides are a strong predictor of residual risk of cardiovascular disease in patients receiving maximal doses of statins.³⁶

Omega-3 fatty acids reduce blood triglycerides significantly.³⁷ The minimal effective dose is more than **2,000 mg** of **EPA/DHA** from fish oil per day.³⁷

Eskimos show prolonged bleeding times with their dietary consumption of **20 grams** of omega-3 fatty acids per day, but Dr. Lavie has noted that doses of up to **7 grams** per day do not cause prolonged bleeding.³⁸ Consuming fish oil is safer than eating fish because toxic mercury attaches to fish meat, but is distilled out of quality omega-3 oil concentrates.³⁸ One study showed that **4,000 mg** of omega-3 fatty acids from fish oil reduce triglycerides by **45%** in patients with high triglycerides.³⁹

Lipoprotein(a)

Paul Ziajka, MD, PhD (clinical assistant professor, Florida University School of Medicine, Orlando, Florida) spoke on the subject of lipoprotein(a) [**Lp(a)**], which is a highly atherosclerosis-causing particle attached to an LDL cholesterol particle. Patients with low LDL cholesterol nonetheless have a high cardiovascular disease risk if Lp(a) is high.⁴⁰



Lp(a) has less resistance to oxidation than plain LDL cholesterol.⁴¹

Niacin has been used to lower Lp(a).⁴² Combining niacin with statin was effective in lowering Lp(a) while at the same time increasing HDL cholesterol.⁴³

PCSK9 Action and Benefit

Peter Toth, MD, PhD (director, Preventive Cardiology, CGH Medical Center, Sterling, Illinois) discussed PCSK9 inhibition. Experiments with mice have confirmed that PCSK9 inhibition lowers LDL cholesterol.⁴⁴ LDL cholesterol lowering with PCSK9 inhibition has also been shown in humans.⁴⁵



PCSK9 has been shown to lower not only plasma LDL cholesterol but also triglycerides⁴⁶ and Lp(a).⁴⁷

A clinical trial demonstrated that adding PCSK9 inhibition to statin therapy results in additional reduction of LDL cholesterol as well as additional reduction of cardiovascular death and disease.⁴⁸ PCSK9 inhibitors are much more expensive than statins, costing in excess of \$1,000 per month.⁴⁹

Coronary Artery Calcium

Khurram Nasir, MD (cardiologist, Baptist Health Medical Group, Miami Beach, Florida) is an advocate of testing for **coronary artery calcium (CAC)**. This test uses high-speed radiological imaging to measure calcium in atherosclerotic plaques in the arteries of the heart. This helps determine the extent of coronary atherosclerosis.

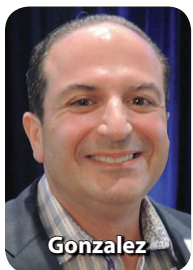


Cardiovascular deaths and disease events are rare for persons who have no detectable CAC, mainly occurring in diabetics and former smokers.⁵⁰ CAC is a more direct measurement of atherosclerosis than plasma LDL cholesterol or C-reactive protein, which are risk factors for atherosclerosis.⁵¹

More than one-quarter of American adults over age 40 take statin drugs.⁵² But Dr. Nasir has determined that people with no detectable CAC usually do not need to take a statin.⁵³

Bariatric Surgery

Anthony Gonzalez, MD (chief of surgery, Baptist Hospital of Miami, Miami, Florida) discussed the benefits of gastric surgery for obese patients. Bariatric surgery reduces the size of the stomach, thereby reducing the amount of food a person can eat. Bariatric surgery substantially reduces cardiovascular death rates in obese patients⁵⁴ and substantially reduces symptoms of type II diabetes.⁵⁵



In 2010, **gastric bypass** was the most common form of bariatric surgery, but by 2013 **sleeve gastrectomy** had become the more common form.⁵⁶

Sleeve gastrectomy is less technically difficult to perform, but gastric bypass produces better results. According to one study, gastric bypass reduced body weight **23%**, reduced triglycerides **40%**, and reduced insulin use by **35%**. For sleeve gastrectomy, the reductions were **19%**, **29%**, and **34%**, respectively.⁵⁷ Earlier studies have shown similar results.⁵⁸ In all cases, bariatric surgery produced far better results than could be obtained by intensive treatment with medications.^{57,58}

Concluding Remarks

Cholesterol is not a toxic substance. On the contrary, cholesterol is an essential component of all cell membranes. Steroid hormones (testosterone, estrogen, etc.), cortisol, bile acids, and vitamin D are synthesized from cholesterol. Cholesterol is so essential for mental function that nearly one fourth of the body's cholesterol is in the brain, despite the fact that the brain accounts for only about **2%** of total body weight.^{59,60} Suicidal patients typically have lower plasma cholesterol than nonsuicidal patients.⁶¹

LDL cholesterol becomes toxic when oxidized. Thus, smokers and other persons with high levels of oxidized LDL in their bloodstream are the main beneficiaries of cholesterol-lowering therapies. Considerable oxidation of LDL cholesterol occurs once it is behind blood vessels.⁶² Diabetes and chronic inflammation from other causes makes blood vessel walls more permeable to LDL and increases oxidative stress, thereby making LDL cholesterol more susceptible to oxidation.^{63,64}

LDL is beneficial when it is transported from the liver to body tissues, as opposed to being deposited into the endothelium. HDL is "good cholesterol" because it attaches to oxidized cholesterol in LDL for transport back to the liver to be detoxified.⁶⁵

Statins have cardiovascular benefits apart from LDL cholesterol lowering, including reduced inflammation.⁶⁶

One of the most common side effects associated with statins (**statin intolerance**), is muscle pain. Statin intolerance, real or imagined, is usually seen as subjective complaints rather than objective measurable quantities.⁶⁷ Especially in the elderly, muscle problems can be due to aging rather than statins. There are, nonetheless, objective problems seen with statin therapy, including an increased incidence of diabetes.⁶⁸

Statins reduce the body's synthesis of coenzyme Q10 and vitamin D. Statin intolerance could result from coenzyme Q10 depletion,⁶⁹ L-carnitine deficiency,⁷⁰ or vitamin D deficiency,⁷¹ all of which can be corrected with supplementation. ●



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BY GARRY MESSICK

Celery

Celery is related to parsley and fennel, a member of the *Umbelliferae* family of plants. Mankind has cultivated it as a vegetable for thousands of years.

Let's consider a few of the numerous if often overlooked health benefits contained in this popular, fibrous vegetable.

Fiber

At about **1.6 grams** per cup, celery is high in fiber, which makes it beneficial for helping to fight everything from diabetes, heart disease, and high cholesterol to colon cancer and constipation.¹

Anti-inflammatory

Celery contains beneficial phytonutrients such as the flavonols quercetin and kaempferol, flavones such as luteolin, and phenolic acids. These antioxidants are known for their anti-inflammatory properties.² A study has shown that celery helps inhibit the activity of two proteins linked to inflammation—nuclear factor-kappa B (NF-kB) and tumor necrosis factor alpha (TNF-alpha).³

Minerals

Celery is rich with a number of important minerals. These include iron, zinc, copper, magnesium, calcium, and selenium, but chiefly potassium, which helps reduce the risk of heart disease and support cellular function in muscles.¹

It is best to choose organic celery whenever possible as commercially grown celery has been exposed to a great deal of pesticides.^{4,5}

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BY JON VANZILE

HUMBERTO FASANO

A Heart Transplant Success Story

In 2001, Humberto Fasano received a staggering diagnosis: he had severe cardiomyopathy and congestive heart failure (CHF).

With these conditions, the heart muscle becomes flabby and stretched out. As a result, its pumping ability is weakened, and not enough oxygenated blood is circulated to the body, causing symptoms like exhaustion and arrhythmia. The condition is considered degenerative and incurable, meaning that once someone is diagnosed with congestive heart failure, there is no way to restore their heart function back to its normal level.

Doctors measure CHF by tracking the size of the left ventricle and by measuring how much blood it expels with every contraction, a measurement known as the “ejection fraction.” In general, doctors consider an ejection fraction above **55%** to be normal.

Fasano had an ejection fraction of just **14%**. And at 10.5 centimeters, his left ventricle was the largest ever recorded at the University of Miami Health System.



Humberto Fasano and his wife, Maria.

Based on this grim diagnosis, Fasano needed to be on the heart transplant list. Doctors told him that **50%** of CHF patients usually die within five years of being diagnosed.

But Fasano, who says he always maintains an optimistic and hopeful attitude, wasn't buying it. Instead of giving in to his diagnosis, he decided he would fight back and do everything he could to survive. Today, more than 15 years later, Fasano is thriving—and he's always happy to tell the story of how he managed to outlast a chronic, seemingly hopeless diagnosis with the help of first-rate cardiac care and **Life Extension**®.

"I was never in fear or depressed," Fasano says. "'Give up' is not in my dictionary, period."

The Road Back

Initially, Fasano experienced symptoms such as shortness of breath and fatigue while performing everyday activities such as climbing stairs. In the short term, to help relieve his symptoms and support his weak heart, his doctors recommended immediate placement of a left-sided pacemaker/defibrillator. This device regulated his heart rhythm and, if necessary, shocked it back into a normal rhythm if something went wrong. Two years later, the device was upgraded to a biventricular pacemaker/defibrillator, which provides more comprehensive support to keep a normal heart rhythm.

While the devices went to work and Fasano adapted to an aggressive program of prescription drugs to reduce his symptoms, he launched an all-out effort to find relief. In 2004, "by the grace of God," he came across an Internet forum where people with conges-

tive heart failure were singing the praises of an orthomolecular therapist in Holland named Corrij Kooij. According to her patients, Kooij had developed a special program of supplements that was able to increase their ejection fraction by up to **15%**.

"I immediately wrote Corrij and asked if she could help me," Fasano says. "She accepted and requested I fill out a questionnaire, in addition to sending her my last two blood lab reports. She performed this service at zero cost to me."

After reviewing his case, Kooij recommended a program of nine highly-targeted nutrients and supplements. These supplements (see sidebar) were designed to make his heart stronger by increasing intracardiac energy and to help his heart function more efficiently. The list included stalwarts like coenzyme Q10, magnesium, potassium, R-lipoic acid, and vitamins C and E. Each of the recommendations was backed up by extensive research showing a positive effect on cardiac function.

Naturally, Fasano wanted to make sure he was getting the best supplements possible. At the time, he was already taking a few supplements from **Life Extension**, so he wrote Kooij back and mentioned that he was taking **Life Extension**

products already and did she have a particular brand she recommended. In his letter, he remarked that he would go anywhere in the world to obtain the very best.

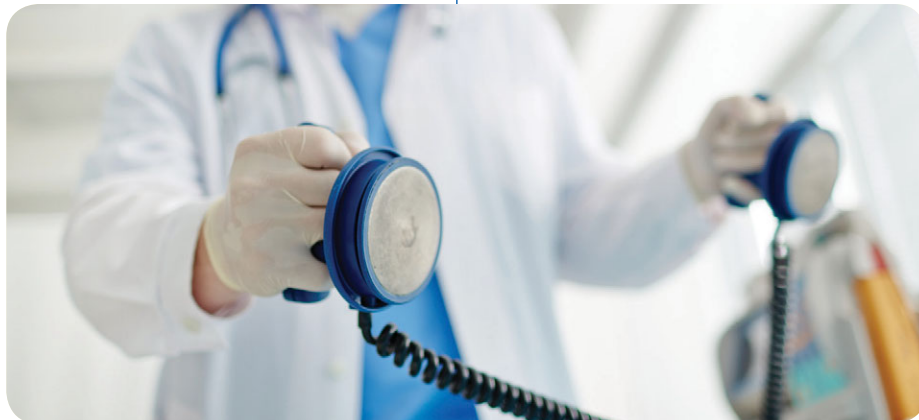
"If she said I needed a Japanese supplement, I was prepared to go to Japan to buy it. But she immediately wrote back and said, 'Humberto, here in Holland my husband and I take **Life Extension**,'" he recalls. "I found all nine products within **Life Extension**'s line-up."

This recommendation would end up launching a long-standing relationship between Fasano and **Life Extension**—but first he had to make sure his health didn't deteriorate.

The Transplant

In 2014, 13 years after his diagnosis, Fasano had already outlived all expectations, but he was still looking for every advantage possible. That year, he signed up for an experimental stem-cell study at the University of Miami.

Unfortunately, the treatment didn't have the effect he'd hoped for. Later that year, with his condition worsening, he had to pull himself from the program. That autumn, he had two serious emergencies, one in October and one in November—then three more in January 2015.



By this time, it had become obvious that Fasano would have to take the next step. He would need a heart transplant. He applied to the Mayo Clinic Transplant Program and was accepted. While he was waiting, he spent several months taking a class of drugs called inotropes and, in summer 2015, he received a left-ventricular assist device, or LVAD. This specialized device acts as a kind of mechanical heart. LVADs were originally designed as a “bridge to transplant,” for short-term use, but recent advances in technology have stretched the horizon of time people can survive with an LVAD device. This was excellent news for Fasano and gave him time while the search for a donor heart began.

In January 2015, Fasano and his wife moved to Jacksonville, Florida, where the Mayo Clinic transplant hospital was located, to wait for his donor heart. With his typical optimism, Fasano loved Jacksonville.

“I spent months within 15 minutes of the heart transplant center,” Fasano says. “And I’ll tell you, we had a great time. I didn’t have any dietary restrictions anymore, so I told my wife, ‘Let’s go find all the good restaurants!’ So we did, and there are some great restaurants in Jacksonville!”

But that doesn’t mean it was easy. While they waited, Fasano’s doctors continued to refine his medication program, and his symptoms posed a daily challenge. He was tired more often and dealt with the side effects of his medications.

“I was limited physically,” he said. “I couldn’t run or go upstairs. I couldn’t do a lot of the things I used to do. But emotionally, I never had a problem.”

Finally, that autumn, Fasano got the news—a suitable donor heart had been found. On November 18, he received a new heart.

It was a huge step forward, and it began his journey back. Eighteen months after his transplant, Fasano felt much better and has been able to participate more fully in life.

“I have been able to go back to most of my normal activities, including work, walking every day, enjoying my family, and helping others as much as I can,” he says. “I also participate in a foundation in Panama that raises funds for people who need a transplant.”

Fasano’s Lasting Connection with Life Extension

More than anything else, Fasano is deeply grateful for all the help he’s received.

“I owe my new life to God and his team first, including my caregiver 24/7 for sixteen continuous months: my wife Maria, who never had one complaint and never got tired. I still cannot believe her strength and persistence. My brother Max was also 24/7 dedicated to taking care of me uninterrupted. I’m extremely thankful for my doctors, my nurses and the whole medical team at Mayo Clinic and University of Miami, as well as the prayers of my family and friends. I’m also grateful to Corrij, my angel, and to **Life Extension** for the supplements I took for more than 10 years to control my illness.”

In fact, Fasano was so impressed with his results that shortly after he started his supplement regimen, he reached out to **Life Extension** to set up an appointment with the international team. Soon after, he became a general distributor for the company in Panama—a position he continues to hold.

“When I started this journey, I knew very little about vitamins

Humberto Fasano’s Heart Failure Protocol

After Humberto Fasano reached out to Corrij Kooij, she sent him a supplement protocol designed to provide extra energy to a stressed heart muscle. The list of supplements Kooij recommended includes:

- MSM: **1,000 mg**, 3x daily
- Super Ubiquinol CoQ10: **100 mg**, 2x daily with meals
- Chromium polynicotinate: **200 mcg**, 2x twice daily with meals
- Optimized Carnitine with GlycoCarn®: 2 capsules twice daily, a total of **2,800 mg**, half-hour before or two hours after meals
- Magnesium: 2x daily
- R-Lipoic acid: **150 mg**, 2x daily
- Potassium: **750 mg**, 1x daily
- Vitamin C: **1,000 mg**, 3x daily
- Vitamin E: **400 IU**, 1x daily

Now, after the transplant, Fasano has also added the following supplements to his regimen:

- Super Bio-Curcumin
- Bone Restore
- Arthromax

and supplements,” he says. “I was a civil engineer who worked in construction and project management. Distributing **Life Extension** products was something I started on the side, but now it’s grown, and I’m doing great.” ●

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

EXTEND-RELEASE

MAGNESIUM

WHEN YOU NEED IT

Unique delivery system provides immediate and extended release magnesium for full-body coverage of this essential mineral.



Non-GMO

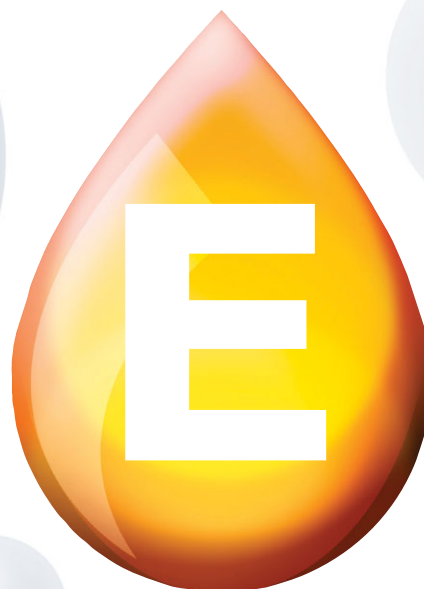
	Retail Price	Your Price
1 bottle	\$13	\$9.75
4 bottles		\$8.75 each

Item # 02107 • 60 vegetarian capsules

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

ZümXR® is a registered trademark and protected by patents. See www.ZümXR.com

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



ARE YOU TAKING THE RIGHT FORM OF VITAMIN E?

Most people obtain **alpha-tocopherol** in their multivitamin, but miss out on critical **gamma-tocopherol**.

Gamma E Mixed Tocopherols provides a full spectrum of natural vitamin E.



Non-GMO

	Retail Price	Your Price
1 bottle	\$32	\$24
4 bottles		\$21.75 each
Item# 02075 • 60 softgels		

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

For full product description and to order **Gamma E Mixed Tocopherol with Sesame Lignans**, call **1-800-544-4440** or visit **www.LifeExtension.com**

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

ENHANCE YOUR IMMUNE SYSTEM WITH THE **HIGHEST POTENCY AHCC® PRODUCT**



Item #24404
Retail Price \$84.95
Your Price \$63.71

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.*

FOR FULL PRODUCT DESCRIPTION AND TO ORDER KINOKO® PLATINUM AHCC®,
PLEASE CALL **1-800-544-4440** OR VISIT **WWW.LIFEEXTENSION.COM**



QUALITY OF LIFE | 877-937-2422 | www.QualityOfLife.net
f [Facebook.com/QualityofLifeLabs](https://www.facebook.com/QualityofLifeLabs) t [@QOLSupplements](https://twitter.com/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 Documented Probiotic Strains That Promote Healthy Vaginal Microflora and Urinary Tract Health*

Jarro-Dophilus® Women contains the four predominant *Lactobacilli* strains of the healthy vaginal tract.*

All four strains were isolated from the vaginal tracts of healthy pregnant women and have been clinically tested for efficacy

in helping to maintain protective, healthy vaginal microflora and urinary tract health.*

When it comes to choosing effective probiotics, clinically documented strains matter.™

Choose science.

Choose Jarro-Dophilus® probiotics.

Jarro-Dophilus® Women 5 Billion Per Capsule 30 Veggie Caps

Item # **52142** Retail Price **\$27.95** Your Price **\$20.96**

For full product description or to order Jarro-Dophilus® Women call 1-800-544-4440 or visit www.LifeExtension.com

L. crispatus LbV 88

L. jensenii LbV 116

L. gasseri LbV 150N

L. rhamnosus LbV 96



NEW
FOOD-GRADE
ENTERIC
COATING

Jarrow
FORMULAS®



NEW

Jarro-
Dophilus®
PROBIOTICS



WOMEN

PROMOTES HEALTHY VAGINAL MICROFLORA*
PROMOTES URINARY TRACT HEALTH*

5 BILLION
PER
CAPSULE

4 CLINICALLY
DOCUMENTED
VAGINAL STRAINS

30 ENTERIC COATED VEGGIE CAPS
PROBIOTIC SUPPLEMENT

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

ASTARTE

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

Visit us at www.jarrow.com for more product information.

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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

YOUR
PRICE

- | | | | | | | | |
|---|---|---|--|---|--|--|--------------------|
| <p>○ PSA (PROSTATE SPECIFIC ANTIGEN) (LC010322)
Screening for Prostate Cancer</p> | <p>SALE \$23.25</p> | | | | | | |
| <p>○ CBC/CHEMISTRY PROFILE (LC381822) includes:</p> <table border="0"> <tr> <td> <p>Lipid Profile:
Total cholesterol • Triglycerides
HDL cholesterol • LDL cholesterol (calc.)
VLDL cholesterol (calc.)
Total cholesterol/HDL ratio
Estimated Coronary Heart Disease risk</p> </td> <td> <p>Blood Sugar:
Glucose</p> <p>Kidney Function:
Uric acid • BUN (blood urea nitrogen)
Creatinine • BUN/creatinine ratio
eGFR (estimated glomerular filtration rate)</p> </td> </tr> <tr> <td> <p>Liver Function:
Alkaline phosphatase • LDH (lactate dehydrogenase)
AST (aspartate aminotransferase)
ALT (alanine transaminase)
Total protein • Albumin • Globulin
Albumin/globulin ratio • Bilirubin</p> </td> <td> <p>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</p> </td> </tr> <tr> <td> <p>Electrolytes and Minerals:
Sodium • Potassium • Chloride
Calcium • Phosphorus • Iron</p> </td> <td></td> </tr> </table> | <p>Lipid Profile:
Total cholesterol • Triglycerides
HDL cholesterol • LDL cholesterol (calc.)
VLDL cholesterol (calc.)
Total cholesterol/HDL ratio
Estimated Coronary Heart Disease risk</p> | <p>Blood Sugar:
Glucose</p> <p>Kidney Function:
Uric acid • BUN (blood urea nitrogen)
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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</p> | <p>Electrolytes and Minerals:
Sodium • Potassium • Chloride
Calcium • Phosphorus • Iron</p> | | <p>\$35</p> |
| <p>Lipid Profile:
Total cholesterol • Triglycerides
HDL cholesterol • LDL cholesterol (calc.)
VLDL cholesterol (calc.)
Total cholesterol/HDL ratio
Estimated Coronary Heart Disease risk</p> | <p>Blood Sugar:
Glucose</p> <p>Kidney Function:
Uric acid • BUN (blood urea nitrogen)
Creatinine • BUN/creatinine ratio
eGFR (estimated glomerular filtration rate)</p> | | | | | | |
| <p>Liver Function:
Alkaline phosphatase • LDH (lactate dehydrogenase)
AST (aspartate aminotransferase)
ALT (alanine transaminase)
Total protein • Albumin • Globulin
Albumin/globulin ratio • Bilirubin</p> | <p>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</p> | | | | | | |
| <p>Electrolytes and Minerals:
Sodium • Potassium • Chloride
Calcium • Phosphorus • Iron</p> | | | | | | | |
| <p>○ 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.</p> | <p>\$199</p> | | | | | | |
| <p>○ FOOD SAFE ALLERGY TEST – BASIC** (LCM73001)
This test measures delayed (IgG) food allergies for 95 common foods.</p> | <p>\$198</p> | | | | | | |
| <p>○ FOOD SAFE ALLERGY TEST – EXTENDED** (LCM73002)
This test measures delayed (IgG) food allergies to an additional 95 foods.</p> | <p>\$198</p> | | | | | | |
| <p>○ FOOD SAFE ALLERGY TEST – COMBO** (LCM73003)
This test measures delayed (IgG) food allergies to all 190 foods found in our Basic and Extended panels.</p> | <p>\$375</p> | | | | | | |

NEW GENETIC TESTING

- | | |
|--|---------------------|
| <p>○ 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.</p> | <p>\$299</p> |
| <p>○ 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.</p> | <p>\$149</p> |

BLOOD TEST PANELS

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

YOUR
PRICE

\$269

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.

\$120

MALE ELITE PANEL (LC100016)*

CBC/Chemistry Profile • Free and Total Testosterone • Total Estrogens Estradiol • DHEA-S • Progesterone • Pregnenolone • DHT • FSH • LH • TSH Free T3 • Free T4 • Reverse T3 • Free and Total PSA • IGF-1 • SHBG • HbA1c Vitamin D 25-OH • hs-CRP, ferritin • Homocysteine • Hemoglobin A1c

\$575

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!

\$299

MALE BASIC HORMONE PANEL (LC100012)

DHEA-S • Estradiol • Total and Free Testosterone • PSA

\$75

THYROID ADD-ON PANEL (LCTHYROID)

Free T3 & Free T4.

\$55

INSULIN (LC004333)

Helpful to assess insulin resistance.

\$29.90

NMR LIPOPROFILE® (LC123810)

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

\$99

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.

\$285

HOMOCYSTEINE (LC100061)

High homocysteine is associated with heart attack, stroke, and dementia. Find out your homocysteine level so you can take steps to lower it if necessary.

\$54

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

YOUR
PRICE

\$269

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.

\$125

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

\$575

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!

\$299

FEMALE BASIC HORMONE PANEL (LC100013)

DHEA-S • Estradiol • Total and Free Testosterone • Progesterone

\$75

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

\$275

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

\$249

DIABETES MANAGEMENT PROFILE – COMPREHENSIVE (LC100040)

Hemoglobin A1C • Glucose • Insulin • Lipid Panel • Glycomark

\$129



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™
Optimized NAD+ Cell Regenerator™ with Resveratrol
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® Provinal® Purified Omega-7
OMEGA FOUNDATIONS® Vegetarian DHA
Organic Golden Flax Seed

Food

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

Glucose Management

CinSulin® with InSea2® and Crominex® 3+
Mega Benfotiamine
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 GlycoCam®
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 AprèsFlex®
Advanced Bio-Curcumin® with Ginger & Turmerones
Black Cumin Seed Oil
Black Cumin Seed Oil with Bio-Curcumin®
Boswellia
Cytokine Suppress™ with EGCG
Serrafazyme
Specially-Coated Bromelain
Super Bio-Curcumin®
Zyflamend® Whole Body

Joint Support

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

Kidney & Bladder Support

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

Liver Health & Detoxification

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

Longevity & Wellness

Ageless Cell™
Alpha-Lipoic Acid
AMPK Activator
AppleWise Polyphenol Extract
Berry Complete
Blueberry Extract
Blueberry Extract with Pomegranate

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 (Citate)
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
Xylwhite Mouthwash

Pet Care

Cat Mix
Dog Mix

Probiotics

Bifido GI Balance
FLORASSIST® Balance
FLORASSIST® GI with Phage Technology
FLORASSIST® Heart Health
FLORASSIST® Immune 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
Resveratrol Anti-Oxidant Serum
Shade Factor™
Shade Factor™ Sunscreen Lotion
Shade Factor™ Sunscreen Spray
Skin Care Collection Anti-Aging Serum
Skin Care Collection Body Lotion
Skin Care Collection Day Cream
Skin Care Collection Night Cream
Skin Firming Complex
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 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

		YOUR PRICE				
ITEM No.	PRODUCT	Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	QTY Total
A						
01524	ACETYL-L-CARNITINE • 500 mg, 100 veg. caps	34.00	25.50	22.50		
01874	ACETYL-L-CARNITINE ARGINATE • 90 veg. caps	52.00	39.00	35.00		
01628	ADRENAL ENERGY FORMULA • 60 veg. caps	24.00	18.00	16.50		
01630	ADRENAL ENERGY FORMULA • 120 veg. caps	46.00	34.50	31.50		
01828	ADVANCED LIPID CONTROL • 60 veg. caps	30.00	22.50	20.25		
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			
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/BLEBERRY & 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							

RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS

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			
80166	SKIN FIRMING COMPLEX • 1 fl. oz	53.00	39.75	34.50			
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			
SUBTOTAL OF COLUMN 4							

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each			
01570	DNA PROTECTION FORMULA • 60 veg. caps	34.00	25.50	24.00				
01931	DOG MIX • 100 grams powder	18.00	13.50	11.25				
02006	DOPA-MIND™ • 60 veg. tabs	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	FEMMENESSENCE 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/PHASE TECHNOLOGY • 30 liquid veg. caps	33.00	24.75	22.50				
01821	FLORASSIST® HEART HEALTH • 60 veg. caps	32.00	24.00	21.00				
02124	FLORASSIST® IMMUNE HEALTH • 30 veg. caps	26.00	19.50	18.00				
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	18.00	13.50	12.00				
01939	FOLATE (Optimized) • 1,000 mcg, 100 veg. tablets	15.00	11.25	10.00				
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				
SUBTOTAL OF COLUMN 5								

ITEM No.	PRODUCT	YOUR PRICE					QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each			
01541	GLUTATHIONE, CYSTEINE & C • 100 veg. caps	20.00	15.00	13.50				
01669	GLYCINE • 1,000 mg, 100 veg. caps	12.00	9.00	8.10				
01411	GRAPE SEED EXTRACT W/RESVERATROL & PTEROSTILBENE 100 mg, 60 veg. caps	36.00	27.00	25.50				
01620	GREEN COFFEE EXTRACT COFFEEGENIC® 400 mg, 90 veg. caps	32.00	24.00	21.00				
00953	GREEN TEA EXTRACT (Mega) • lightly caffeinated, 100 veg. caps	30.00	22.50	18.00				
00954	GREEN TEA EXTRACT (Mega) • decaffeinated, 100 veg. caps	30.00	22.50	18.00				
H								
01074	5 HTP • 100 mg, 60 caps	27.95	20.96					
02002	HAIR, SKIN & NAIL REJUVENATION FORM W/VERISOL® 90 tabs	32.00	24.00	22.00				
01738	HCA (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 SENESENCE 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				
SUBTOTAL OF COLUMN 6								

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01639	5-LOX INHIBITOR W/APRÈSFLEX® • 100 mg, 60 veg. caps	22.00	16.50	15.00			
01678	L-LYSINE • 620 mg, 100 veg. caps	9.00	6.75	6.00			
00455	LYCOPENE (Mega) • 15 mg, 90 softgels	35.00	26.25	22.50			
M							
01992	MACUGUARD® OCULAR SUPPORT 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	22.00	16.50	15.00			
02144	NAD+ CELL REGENERATOR™ NICOTINAMIDE RIBOSIDE 250 mg, 30 veg. caps	42.00	31.50	28.00			
02145	NAD+ CELL REGENERATOR™ W/RESVERATROL (Optimized) 30 veg. caps	50.00	37.50	34.00			
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			
SUBTOTAL OF COLUMN 7							

ITEM No.	PRODUCT	YOUR PRICE				QTY	Total
		Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each		
01551	NATURAL SLEEP® w/ MELATONIN (Enhanced) • 30 caps	22.00	16.50	15.00			
01511	NATURAL SLEEP® W/O MELATONIN (Enhanced) • 30 caps	20.00	15.00	13.50			
01445	NATURAL SLEEP® MELATONIN • 5 mg, 60 veg. caps	18.00	13.50	12.00			
00987	NATURAL STRESS RELIEF • 30 veg. caps	28.00	21.00	18.00			
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 • 225 grams • Lemon flavor	40.00	30.00	27.00			
01990	NITROVASC w/CORDIART™ • 30 veg. caps	18.00	13.50	12.00			
01903	NK CELL ACTIVATOR™ • 30 veg. tablets	45.00	33.75	31.50			
00373	NO FLUSH NIACIN • 800 mg, 100 caps	19.00	14.25	12.75			
O							
01824	OLIVE LEAF VASCULAR SUPPORT w/CELERY SEED EXTRACT (Advanced) • 60 veg. caps	36.00	27.00	24.00			
01988	OMEGA-3 PLUS EPA/DHA w/SESAME LIGNANS, OLIVE EXTRACT, KRILL & ASTAXANTHIN (SUPER) • 120 softgels	45.00	33.75	31.50	24.75		
01983	OMEGA-3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 60 softgels	18.00	13.50	12.00	9.38		
01982	OMEGA-3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 120 softgels	32.00	24.00	21.00	17.05		
01984	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 120 enteric coated softgels	34.00	25.50	23.25	18.00		
01985	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 60 enteric coated softgels	20.00	15.00	13.50	10.50		
01986	OMEGA 3 EPA/DHA w/SESAME LIGNANS & OLIVE EXTRACT (Super) • 240 small softgels	32.00	24.00	21.00	17.25		
01991	ONCE-DAILY HEALTH BOOSTER • 60 softgels	54.00	40.50	38.00			
02113	ONE-PER-DAY • 60 tablets	22.00	16.50	15.00			
01328	ONLY TRACE MINERALS • 90 veg. caps	15.00	11.25	9.38			
P							
01789	PALMETTOGUARD® SAW PALMETTO w/BETA-SITOSTEROL 30 softgels	15.00	11.25	10.50	9.00		
01790	PALMETTOGUARD® SAW PALMETTO/ NETTLE ROOT w/BETA-SITOSTEROL • 60 softgels	28.00	21.00	19.50	18.00		
*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 Natural) • 60 softgels	38.00	28.50	26.25	24.00		
01909	PROSTAPOLLEN™ (Triple strength) • 30 softgels	28.00	21.00	18.75			
SUBTOTAL OF COLUMN 8							

ITEM No.	PRODUCT	Retail Each \$	YOUR PRICE			QTY	Total
			1 Unit Each	4 Unit Each	10 Unit Each		
01742	PROTEIN-ISOLATE (Whey) Vanilla • 403 grams	30.00	22.50	19.50			
01743	PROTEIN-ISOLATE (Whey) Chocolate • 437 grams	30.00	22.50	19.50			
01770	PROTEIN CONCENTRATE (New Zealand Whey) Vanilla 500 grams	30.00	22.50	19.95			
01771	PROTEIN CONCENTRATE (New Zealand Whey) Chocolate 640 grams	30.00	22.50	19.95			
01812	PROVINAL® PURIFIED OMEGA-7 • 30 softgels	27.00	20.25	18.00			
01676	PS CAPS (Phosphatidylserine) • 100 mg, 100 veg. caps	54.00	40.50	36.00			
01508	PTEROPURE® Pterostilbene • 50 mg, 60 veg. caps	32.00	24.00	22.50			
01209	PUMPKIN SEED EXTRACT (Water-soluble) • 60 veg. caps	20.00	15.00	13.50			
01637	PYCNOGENOL® FRENCH MARITIME PINE BARK EXTRACT 100 mg, 60 veg. caps	64.00	48.00	45.00			
01217	PYRIDOXAL 5'-PHOSPHATE • 100 mg, 60 veg. caps	22.00	16.50	14.85			
Q, R							
01309	QUERCETIN (Optimized) • 250 mg, 60 veg. caps	22.00	16.50	15.00			
01030	RED YEAST RICE (Bluebonnet) • 600 mg, 60 veg. caps	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			
01410	RESVERATROL W/PTEROSTILBENE • 100 mg, 60 veg. caps	36.00	27.00	24.00			
02031	RESVERATROL W/NICOTINAMIDE RIBOSIDE (Optimized) • 30 veg. caps	42.00	31.50	27.00			
02030	RESVERATROL (Optimized) • 60 veg. caps	46.00	34.50	31.00			
00889	RHODIOLA EXTRACT • 250 mg, 60 veg. caps	14.00	10.50	9.00			
01900	RIBOGEN™ FRENCH OAK WOOD EXTRACT 200 mg, 30 veg. caps	36.00	27.00	24.75			
00972	(D) RIBOSE POWDER • 150 grams	27.50	20.63	18.56			
01473	(D) RIBOSE TABLETS • 100 veg. tabs	32.00	24.00	21.00			
01609	RICH REWARDS® BREAKFAST GROUND COFFEE • 12 oz. bag	13.00	9.75				
01730	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Mocha • 12 oz. bag	15.00	11.25	10.50			
01729	RICH REWARDS® BREAKFAST BLEND GROUND COFFEE Natural Vanilla • 12 oz. bag	15.00	11.25	10.50			
01612	RICH REWARDS® BREAKFAST BLEND WHOLE BEAN COFFEE 12 oz. bag	13.00	9.75				
01610	RICH REWARDS® DECAFFEINATED ROAST GROUND COFFEE 12 oz. bag	14.00	10.50				
01208	R-LIPOIC ACID (Super) • 240 mg, 60 veg. caps	49.00	36.75	33.75			
00070	RNA CAPSULES • 500 mg, 100 caps	17.95	13.46	12.12			
S							
01432	SAFFRON W/SATIEREAL® (Optimized) • 60 veg. caps	36.00	27.00	24.00			
01935	SAME (S-ADENOSYL-METHIONINE) 200 mg, 30 enteric coated tablets	25.00	18.75	16.50			
01933	SAME (S-ADENOSYL-METHIONINE) 400 mg, 30 enteric coated tablets	36.00	27.00	24.00			
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			
SUBTOTAL OF COLUMN 9							

ITEM No.	PRODUCT	Retail Each \$	YOUR PRICE			QTY	Total
			1 Unit Each	4 Unit Each	10 Unit Each		
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				
02129	SKIN CARE COLLECTION ANTI-AGING SERUM • 1.75 fl. oz	60.00	45.00	37.50			
02132	SKIN CARE COLLECTION BODY LOTION • 6 oz	28.00	21.00	18.00			
02130	SKIN CARE COLLECTION DAY CREAM • 1.65 fl. oz	50.00	37.50	33.00			
02131	SKIN CARE COLLECTION NIGHT CREAM • 1.65 fl. oz	39.00	29.25	27.00			
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	TOOTH PASTE • 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				
SUBTOTAL OF COLUMN 10							

		YOUR PRICE					
ITEM No.	PRODUCT	Retail Each \$	1 Unit Each	4 Unit Each	10 Unit Each	QTY	Total
U, V							
01921	URIC ACID CONTROL • 60 veg. caps	24.00	18.00	16.50			
00213	VANADYL SULFATE • 7.5 mg, 100 veg. tablets	15.00	11.25	9.38			
02102	VENOFLOW™ • 30 veg. caps	52.00	39.00	36.00			
00408	VENOTONE • 60 caps	18.95	14.21	12.00			
01327	VINPOCETINE • 10 mg, 100 veg. tablets	18.00	13.50	10.50			
00372	VITAMIN B3 NIACIN • 500 mg, 100 caps	7.65	5.74	4.99			
02028	VITAMIN B5 • 500 mg, 100 veg. caps (Pantothenic Acid)	11.00	8.25	7.50			
01535	VITAMIN B6 • 250 mg, 100 veg. caps	12.50	9.38	8.25			
00361	VITAMIN B12 • 500 mcg, 100 lozenges	8.75	6.56	5.44			
01634	VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 60 veg. tablets	10.00	7.50	6.75			
00927	VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 250 veg. tablets	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				
SUBTOTAL OF COLUMN 11							

ITEM No.	PRODUCT	Retail Each \$	YOUR PRICE			QTY	Total
			1 Unit Each	4 Unit Each	10 Unit Each		
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				
33867	THE COMPLETE MEDITERRANEAN DIET by Michael Ozner, MD • 2014	19.95	14.96				
33870	MAGNIFICENT MAGNESIUM by Dennis Goodman, MD • 2014	14.95	11.21				
DPT05	DISEASE PREVENTION AND TREATMENT, EXPANDED FIFTH EDITION (Hardcover) • 2014	69.95	39.95	36.00			
33865	THE RESTORATION OF THE HUMAN BODY [IN 7 PARTS] by Sergey A. Dzugas, MD, PhD • 2014	29.95	22.46				
33862	I'M TOO YOUNG FOR THIS • by Suzanne Somers • 2013	26.00	19.50				
33835	PHARMOCRACY • by William Faloon • 2011	24.00	9.60	8.00			
33958	THE VITAMIN D SOLUTION by Michael F. Holick, PhD, MD (Paperback) • 2013	16.00	12.00				
33838	YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY by Gary Goldfaden, MD • 2012	26.00	15.00				
33815	KNOCKOUT • by Suzanne Somers • 2009	25.99	17.00				
SUBTOTAL OF COLUMN 12							

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SUBTOTAL COLUMN 9

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SUBTOTAL COLUMN 11

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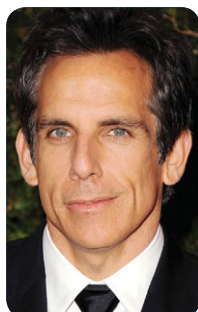
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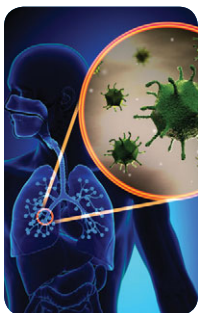
7 NEW RESVERATROL DOSE

Resveratrol activates **sirtuin** proteins that promote longevity. **NAD+** is required for **sirtuins** to function. Optimal benefits can occur in response to **higher**-dose **NAD+** precursors with modest **resveratrol** intake.



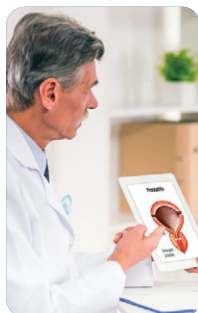
30 BEN STILLER ADVOCATES PROSTATE CANCER SCREENING

Millions of men are skipping annual **PSA blood** tests. Actor **Ben Stiller** is a beneficiary of early diagnosis and has become a passionate advocate for **PSA screening**.



40 IMPEDE UPPER-RESPIRATORY INFECTIONS

Scientists have identified a targeted **probiotic cocktail** that boosts the body's immune defenses to reduce colds, flu, and upper-respiratory complications.



52 RELIEVE URINARY-TRACT SYMPTOMS

Prostate enlargement can lead to nighttime urinary frequency and weak stream. A combination of **natural extracts** helps alleviate urinary discomfort in men.



64 REVERSING A ROOT CAUSE OF GLAUCOMA

Glaucoma is a common cause of blindness. A human study demonstrates **eye pressure** reduced by **24%** using two **plant extracts**.



75 POMEGRANATE IMPROVES MITOCHONDRIA

Swiss researchers have identified a molecule produced in the body from **pomegranates** that protects mitochondrial function.