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November 2025

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7 AS WE SEE IT: TRIBUTE TO A LIFE-SAVING PIONEER

When **Harvard** scientist **Kilmer McCully** identified elevated **homocysteine** as a **cardiovascular** risk factor, his findings were rejected for many years.

Upon Dr. McCully's passing, the **New York Times** ran a headline vindicating Dr. McCully's pioneering research, as we do in this editorial.

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Folic acid and vitamin B12 may protect against intracranial aneurysms; vitamin D improves glucose control in those with type 2 diabetes; higher omega-3 intake linked to reduced inflammation; more than half of the global population have inadequate intake of seven key micronutrients.





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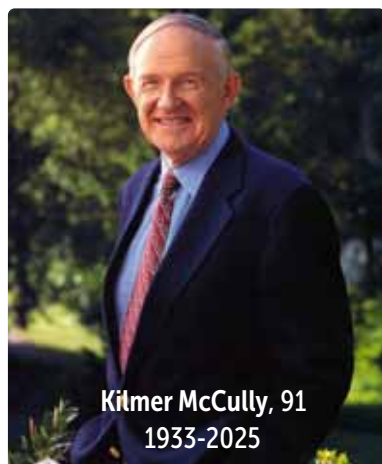
* *European Journal of Nutrition*. 2011;50(5):387-389.

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Tribute to A Life-Saving Pioneer



WILLIAM FALOON



Kilmer McCully, 91
1933-2025

The *New York Times* headline read:¹

***"Kilmer McCully, 91, Dies, Pathologist
Vindicated on Heart Disease Theory"***

**"His studies showed that a B vitamin deficiency
could cause hardened arteries. It took the medical
profession more than a decade to catch up."**

Dr. McCully was a pathologist at *Harvard Medical School* who became famous, then infamous, and finally vindicated for his discovery that elevated **homocysteine** is a risk factor for **cardiovascular** diseases.¹

For relentlessly advocating for lower homocysteine levels, his colleagues banished him to the basement, burying his theory for many years.¹

Not accepting Dr. McCully's theory may have cost countless lives. Simple solutions can lower homocysteine and help reduce cardiovascular risks. Still, most physicians today debate the value of homocysteine **blood testing**.

Kilmer McCully passed away on February 21, 2025, at the age of **91** from metastatic **prostate cancer**.¹

The irony of this is that both **homocysteine** and **PSA (prostate specific antigen)** can be tested in blood and offer a chance to take corrective actions before serious diseases manifest.

We published an article about the science supporting Dr. McCully's homocysteine hypothesis in **1981** and suggested our readers initiate steps to lower this atherogenic compound if elevated.²

This editorial is a tribute to Dr. McCully's pioneering research and describes strategies to reduce homocysteine, including a surprising method to optimize even stubbornly high **homocysteine** blood levels.



What is Homocysteine?

Homocysteine is an amino acid formed in the body from intake of another amino acid called **methionine**, which is high in certain meats and dairy products.³

High levels of homocysteine are associated with a range of diseases including Alzheimer's,^{4,5} migraines,⁶ hearing loss,⁷ cerebrovascular,⁸ and cardiovascular diseases.^{9,10}

Data going back many decades indicated a value in testing homocysteine levels as part of a comprehensive cardiovascular risk assessment.

Yet despite published evidence, most doctors still ignore this marker—potentially leaving some of their patients vulnerable to preventable cardiovascular disorders, including **ischemic stroke**.

Multiple B vitamins play a role in breaking down homocysteine.¹¹⁻¹³ Deficiency in these vitamins can result in elevated homocysteine levels.¹⁴

Dr. McCully's Discoveries

Homocystinuria (very high **urine** and **plasma** homocysteine levels) is a rare genetic disorder that results in early-age onset vascular disease.¹⁵ In a case-series study of homocystinuria, a nine-year-old girl died from a stroke just like her uncle did at the age of eight.¹

Hearing about this in the late 1960's, McCully tracked down the autopsy reports from these children which revealed hardened arteries *but no cholesterol or fat in the plaque buildup*.¹

McCully ran experiments in rabbits which showed that injecting high doses of **homocysteine** led to moderate thickening in all their aortas. Upon further research he found that **vitamins B6** and **B12** helped lower homocysteine levels. When presenting his findings to the medical establishment, however, they were not motivated to take any action.¹

McCully's theory on homocysteine was ignored until the **1990s** when large-scale studies led by other researchers produced results that supported his theories.

The famous *Framingham Heart Study* found that hardening of the arteries connected to the brain was associated with elevated homocysteine levels.¹⁶

Another study by authors that included researchers from the *Harvard School of Public Health* found that men with the *highest* levels of homocysteine had a three-fold greater risk of suffering a **heart attack** than men with lower levels.¹⁷



Regarding McCully's theory, an epidemiologist who helped lead the study that found men with high homocysteine levels faced **triple the heart attack** risk said:

*"At the end of the day, he was right in the sense that homocysteine is a marker for higher risk for cardiovascular disease and he gets the credit for developing this theory and helping to provide the evidence for it."*¹

Who is Most At Risk of High Homocysteine?

In **1998**, the United States and Canada made it mandatory to fortify foods like cereal, flour, and bread with folate primarily to reduce the risk of neural tube defects, but it has also helped bring homocysteine down to healthy levels in many people.^{18,19}

An interesting study compared the changes in **stroke mortality** during and after folate fortification in the U.S. and Canada to England and Wales (countries without folate fortification). From 1990 to 2002, all populations experienced a decline in stroke mortality. However, when the U.S. and Canada fortified their food with **folate** the **stroke** death decline accelerated **faster** compared to England and Wales.²⁰

Post fortification, between 1999-2002, the mean levels of homocysteine amongst Americans declined to around **8-9 $\mu\text{mol/L}$** .^{21,22} This was also the last time the average homocysteine level in the American population was evaluated that we could find.

We at *Life Extension*® recommend keeping homocysteine levels below **12 $\mu\text{mol/L}$** , with under **8 $\mu\text{mol/L}$** as the **optimal target**.

For those whose homocysteine levels are now in safe ranges because of fortification and increased use of folate-containing supplements, there is little to be concerned about.

Certain individuals, however, remain challenged with stubbornly **high** homocysteine levels.

Homocysteine is generally higher in men than women, with age, and in association with certain diseases such as chronic kidney disease, heart failure, dementia, and diabetes. Those hospitalized with these conditions frequently present with elevated homocysteine blood levels.²³⁻²⁵

Elevated homocysteine may also arise from mutations in genes that code for enzymes involved in the metabolism of methionine, including the MTHFR gene.²⁶

These MTHFR genetic variants leave more folate in a less **bioactive** state due to inefficient methylation. Since the fortification of the food supply with folate, only about **12%** of those with the worst genetic variant of MTHFR have elevated homocysteine, compared to **33%** pre-fortification.²⁷

The only way to know your homocysteine level is with blood testing, and if elevated it can easily be reduced to better support cardiovascular health.

A Norwegian study of about **5,000 adults** (ages 65–67), found that compared to those below **9 µmol/L**, individuals with levels between **9–11.9 µmol/L** had

a **30% higher** risk of cardiovascular death and **40% higher** risk of non-cardiovascular death. Those with levels between **12–14.9 µmol/L** faced a **110%** and **90%** increased risk, respectively.²⁸

Why Some Researchers Question The Benefits of Reducing Homocysteine

The cause of plaque build-up in the arteries will vary from individual to individual.

Including homocysteine testing in cardiovascular risk assessment could save many lives and much grief.

Some clinical trials fail to show a benefit from homocysteine reduction alone; we believe this is because they fail to consider all the other risk factors for cardiovascular disease.

There are **20 or more independent risk factors** for cardiovascular disease. Targeting one without the others will not accomplish ideal disease prevention.^{30,31}

High plasma levels of homocysteine may further exacerbate damage to the inner lining of the blood vessels, called the **endothelium**, when combined with high LDL, glucose, and hypertension.⁹

Lower Homocysteine Connected To Mediterranean Diet's Benefits

A study published in *JAMA* in 2024 analyzed the biomarkers of about 25,000 women in connection with their adherence to a Mediterranean diet and health outcomes over the course of 25 years.²⁹

Over the course of follow up, 3,879 deaths occurred. Those who had the greatest adherence to the Mediterranean diet had an **11%** lower risk of mortality compared with those who had the lowest adherence after adjusting for lifestyle factors.

They also found that reduced homocysteine and inflammation explained some of the largest contributions to the lower mortality risk in people with the highest adherence to the Mediterranean diet.

Simply stated, reduced death risks were associated with lower homocysteine and other factors as you can see by the chart below:

Reduced Death Risks Were Associated with:

- Lower **homocysteine, triglycerides** (other lipids)
- Lower **C-reactive protein** (other inflammatory markers)
- Lower **creatinine** (kidneys)
- Lower **insulin resistance** (diabetic markers)
- Lower **body mass**
- Higher **alanine & citrate** (mitochondria & protein synthesis)

How To Reduce Elevated Homocysteine

High homocysteine levels can be easily reversed by increasing intake of certain B vitamins such as vitamins B6, B12 (methylcobalamin) and folate (5-methyltetrahydrofolate) and reducing intake of methionine.^{32,33}

One overlooked approach to lowering homocysteine further is with high doses (around **1,800 mg/day**) of **N-acetyl-cysteine (NAC)**, which may help detoxify homocysteine *via* another mechanism.

It is believed that NAC's supplying of abundant **cysteine** into the bloodstream causes displacement of homocysteine from its binding to albumin in plasma, freeing it to then be cleared by the kidneys.³⁴

Summary

We at Life Extension® have alerted the public about the potential dangers of excess homocysteine since **1981**, echoing Dr. McCully's work.

Unfortunately, most blood test panels that screen for cardiovascular disease still omit homocysteine when convincing evidence suggests that **homocysteine testing** and treatment may save lives.

As we honor Dr. McCully, let us not repeat the mistakes of the past. Let's ensure that **homocysteine is no longer overlooked** in the prevention of cardiovascular diseases.

For longer life,



William Faloon, Co-Founder
Life Extension®



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20 Daggers of Arterial Disease

This graphic shows 20 daggers aimed at an artery occluded with atherosclerotic plaque.

Any one of these “daggers” can initiate and propagate atherosclerotic vascular disease.

Most readers of this magazine are aware of the pathologies involved in arterial disease and follow comprehensive preventive measures.

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CAUTION: Individuals consuming more than 50 mcg 2,000 IU/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Do not exceed 250 mcg per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with high blood calcium levels. If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner. If you are taking a vitamin K antagonist (e.g. warfarin), consult your healthcare practitioner before taking this product.

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In the News



Folic Acid and Vitamin B12 Could Help Protect Against Intracranial Aneurysms

Researchers conducted a meta-analysis that included four studies with a total of 11,377 participants, to analyze the connection between serum levels of folate, vitamin B12, and homocysteine, and the formation of intracranial aneurysms.*

An intracranial aneurysm is a weakness in a blood vessel in the brain that can leak or rupture. This can lead to subarachnoid hemorrhage, which is bleeding that occurs between the brain and the tissues that cover it and can cause permanent brain damage or death.

Research has indicated that high homocysteine levels (which are often accompanied by low levels of serum folate and vitamin B12) could be a risk factor.

Results of the meta-analysis showed an association between elevated homocysteine levels and the formation of intracranial aneurysms. There were also indications that folic acid and vitamin B12 could have a protective effect against intracranial aneurysms.

Editor's Note: The protective effect of folic acid and vitamin B12 against intracranial aneurysms is possibly due to the ability of these vitamins to break down homocysteine in the body.

* *J Clin Neurosci.* 2025 May;135:111190.

Vitamin D Helps Control Glucose in People with Type 2 Diabetes

Vitamin D supplementation could improve glucose control in people with **type 2 diabetes**, according to a recent systematic review and meta-analysis of 39 randomized, controlled trials involving 2,982 participants.*

Thirteen of the studies evaluated vitamin D at less than **2,000 IU** daily and 26 evaluated vitamin D at greater than **2,000 IU** daily.

Researchers found that, compared to placebo, vitamin D supplementation resulted in an **8 mg/dL** reduction in fasting blood glucose. It also led to modest, but impressive, reductions in A1c (a measure of long-term glucose control), fasting insulin, and HOMA-IR (a measure of insulin resistance).

The effects were most prominent in patients who were overweight, vitamin D deficient, or had an A1c of **8%** or greater at the start of the study.

Editor's note: "Our study suggests that vitamin D supplements can be recommended as complementary treatment for [type 2 diabetes] patients," the researchers concluded.

* *Diabetes Obes Metab.* 2024 Dec;26(12): 5713-5726. Epub 2024 Oct 2.





Omega-3's Anti-Inflammatory Effects Against Chronic Inflammation

Omega-3 fatty acids and their derivatives (called specialized pro-resolving mediators, or SPMs) have anti-inflammatory effects.*

Pre-clinical research has shown that they help resolve chronic inflammation. To determine the impact of specialized pro-resolving mediators on *humans*, researchers measured the following levels in 21 adults aged 53 to 73 who had low-grade inflammation:

1. Plasma phospholipid **omega-3** content (a marker of dietary intake)
2. Specialized pro-resolving mediators (SPMs)
3. Anti-inflammatory markers

The results showed that as the **omega-3** fatty acid levels increased, various markers of inflammation *decreased*. This suggests that higher dietary intake of omega-3 fatty acids reduces inflammation.

Similarly, as levels of specialized pro-resolving mediators (**SPMs**) derived from omega-3s increased, markers of inflammation decreased.

Editor's note: The results of this study support the anti-inflammatory properties of omega-3 fatty acids and their derivatives in subjects with chronic inflammation.

* *Prostaglandins Other Lipid Mediat.* 2025 Jan;176:106948.

Billions of People on Earth Have Inadequate Intake of 7 Key Micronutrients

Of the estimated 8.2 billion people in the world, more than half are not consuming enough of seven important micronutrients, according to a study in *Lancet Global Health*.*

For this study, researchers estimated the intakes of 15 essential micronutrients using data collected from the Global Dietary Database.

Based on nutrient intake from food alone (excluding fortification and supplementation), the scientists found that more than **five billion** people don't consume enough **iodine, vitamin E, and calcium**.

Additionally, more than **four billion** people don't get enough **iron, riboflavin, folate, and vitamin C**.

Editor's note: "Deficiencies in these and other micronutrients collectively contribute to a large burden of morbidity and mortality," the authors stated. They asserted that the study's results can be used by public health practitioners to target populations in need of intervention.

* *Lancet Glob Health*. 2024 Oct;12(10): e1590-e1599. Epub 2024 Aug 29.





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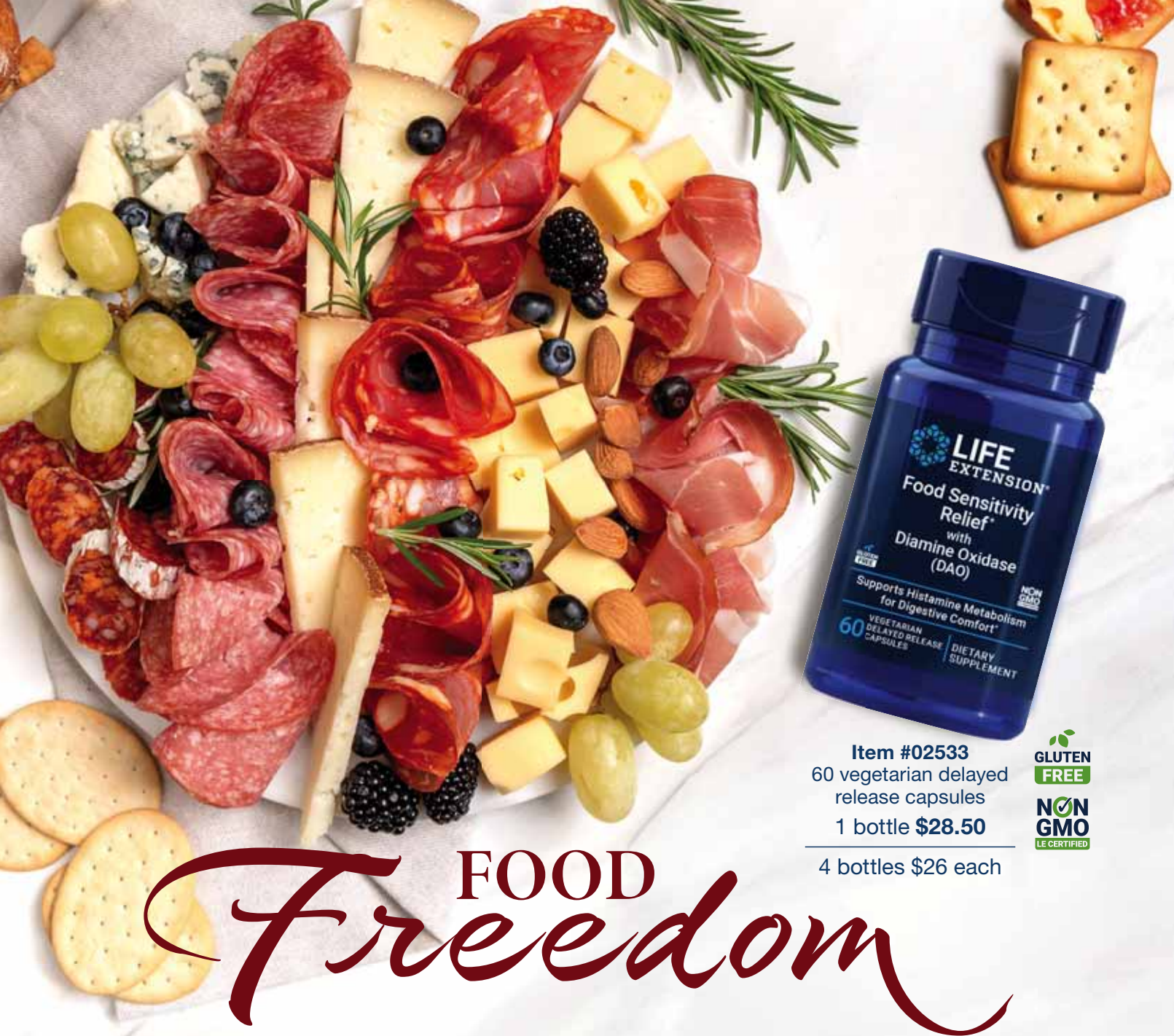
Homocysteine Resist supports healthy levels of homocysteine, an unfavorable amino acid that can increase with normal aging.

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FOOD *Freedom*

Occasional digestive discomforts may be caused by **histamine**, a compound in many foods and beverages associated with non-allergenic **food sensitivity** complaints.¹

The enzyme **diamine oxidase (DAO)** is produced by our bodies to help break down histamine in our digestive tract.

Food Sensitivity Relief provides plant-based **diamine oxidase**.

Human studies showed that supplementation with **diamine oxidase** before meals may help provide occasional digestive relief due to **histamine food sensitivity**.²⁻⁴

Take one capsule before the heaviest meals, up to three times daily.

For full product description and to order **Food Sensitivity Relief with Diamine Oxidase**, call **1-800-544-4440** or visit **www.LifeExtension.com**

CAUTION: This product breaks down histamine but won't prevent severe allergic or gluten-related (celiac) reactions. Do not knowingly ingest food you are allergic to.

1. *Biomolecules*. 2020 Aug 14;10(8):1181. 2. *Clin Nutr*. 2019 Feb;38(1):152-8. 3. *Food Sci Biotechnol*. 2019 Dec;28(6):1779-84. 4. *J Clin Med*. 2023;12(20).

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1. Gut Microbes. 2024 Jan-Dec;16(1):2338322. 2. Int J Food Sci Nutr. 2014 Dec;65(8):994-1002. 3. Lett Appl Microbiol. 2011 Jun;52(6):596-602.

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Mango Tree Bark





Reclaim Your VITALITY

BY MARSHA MCCULLOCH, MS, RD



East Indian
globe thistle
(*Sphaeranthus
indicus*)

A **2025** systematic review and meta-analysis found that around **43%** of older adults experience low **energy levels** and **58%** report a high degree of perceived physical and mental **fatigability**.¹

In other words, diminished **vitality**.

Vitality is what keeps a person feeling **energetic** and ready to embrace life each day.²

Several lifestyle factors promote vitality, including good sleep, healthy nutrition, and regular physical activity, which helps maintain **muscle strength**.²⁻⁴

Scientists searched the plant world for a way to enhance traditional methods of supporting energy and physical function.

After a rigorous investigation, they combined two **plant extracts** to promote muscle **strength** and **vitality**.⁵

In a **clinical trial** of aging men and women, those taking this **extract blend**, compared to **placebo**, had **4.5** times greater improvement in **hand grip** strength, boosted **walking distance** by **86%**, and improved feelings of **vitality** twice as much as exercise alone.⁵

Understanding Vitality

Vitality, feeling energetic and full of life, is crucial for healthy aging and longevity.³ It makes it easier to maintain **independence** and enjoy daily activities as we **age**.^{2,3}

Vitality is reflected in our **energy levels**, **muscle strength**, and **immune responses**, among other factors.³

Resistance training, a crucial component to improved **vitality**,⁶ is one of the best ways to support muscle mass and strength as we age. Exercising the **legs** is particularly key since they are essential for maintaining mobility, balance, and walking patterns.^{7,8}

Another vitality factor, particularly for men, is promoting youthful levels of testosterone, a hormone that helps maintain muscle mass and function.^{9,10}

Scientists suspected the plant world could help with these and other aspects of vitality.

Rediscovering Ancient Rejuvenating Herbs

Ayurveda botanical medicine is known for its rejuvenating effects¹¹ and is associated with youthfulness, a strong body, and long life.¹²

Ayurvedic therapies commonly target factors that drive the aging process, including **inflammation**, declining **immune** function, and **mitochondrial** dysfunction.¹²

To support youthful aging, scientists screened many Ayurvedic botanicals to formulate a vitality blend.



First, they selected **East Indian globe thistle** (*Sphaeranthus indicus*), traditionally used for its rejuvenating properties.^{13,14}

Globe thistle flower is rich in compounds shown in preclinical research to have anti-inflammatory and immune-supportive properties.^{15,16}

Next, after an extensive search, they formulated an extract from the bark of the mango tree (*Mangifera indica*).

Mango tree bark is rich in mangiferin, a compound shown in preclinical research to support cellular energy production and the creation of mitochondria.^{17,18} Mitochondria generate energy needed for bodily processes including muscle contraction.^{19,20}

Mangiferin is also a potent anti-inflammatory and immune-supportive compound.²¹

Improving Vitality

Scientists tested an **East Indian globe thistle flower + mango tree bark** extract blend in 92 healthy, physically active **adults** aged **55 to 70** years.⁵

Subjects took either **650 mg** of the **extract blend** or a **placebo** every morning after breakfast.

All participants completed a home **strength training** program using resistance bands three days a week throughout the study.

This trial assessed aspects of **vitality** including perceptions of vitality and energy as well as physical components of **vitality** such as muscle strength and endurance.

A standard **quality-of-life** questionnaire was used to assess perceptions of vitality. Overall, the **dual-extract** supplemented group had twice the **improvement in** perceived **vitality** and **energy** compared to the **placebo** arm.⁵

In addition, change from baseline in total **testosterone** levels was **2.6** times *greater* in **men** (but not in women) treated with the extract blend compared to the placebo group. **Free testosterone** (the active form) increased **4.3** times more from baseline in the treatment group than in the placebo group.⁵

Testosterone plays a crucial role in maintaining **muscle mass** and sexual function in men.²²⁻²⁴ Men typically experience a reduction in testosterone levels starting around age 35.²⁵

Testosterone levels did not change in female subjects in the study, which means hormone-related side effects were not an issue in women.



What You
Need
To Know

Stay Strong and Energetic

Boosting Strength and Endurance

Within just **four weeks**, measures of muscle **endurance** and **muscle** and **handgrip strength** significantly improved in the extract group compared to placebo.⁵

After 12 weeks, compared to **placebo**, those taking the **extract blend** had:⁵

- **51%** greater resistance to **muscle fatigue**,
- **86%** greater improvement in **walking speed**,
- **4.2** times greater improvement in **leg strength**, and
- **4.5** times greater improvement in **handgrip strength**.

Handgrip strength is a good indicator of overall **muscle strength** and quality of life in older adults.^{26,27} It is one of several tests that are used to measure **biological age**.²⁸

Overall tolerance of the extract blend was good and without side effects.⁵

This blend can safely help maintain vigor and vitality in older age.

- **Vitality**, or feeling lively and energetic, declines with age. That can erode independence and quality of life.
- Maintaining muscle **strength** and endurance is key to preserving vitality. Regular exercise, including resistance training, can help, but may not be enough on its own.
- To promote vitality, scientists searched for and developed a combination of extracts from **East Indian globe thistle flower** and **mango tree bark**.
- In a clinical trial, oral intake of the extract blend plus resistance exercise resulted in **4.2 times** more **leg strength** and **twice** the improvement in feelings of energy and **vitality** compared to exercise alone.
- The extract blend also improved functional fitness, boosting **walking speed** by **86%** compared to placebo, which could facilitate the completion of everyday tasks and activities.

Summary

Vitality or zest for life can dwindle as we age.

Researchers combined **East Indian globe thistle flower** and **mango tree bark** extracts to help restore vitality.

In a clinical trial, daily oral intake of the extract blend significantly improved feelings of **vitality** and **energy**, **muscle strength**, **endurance**, and **walking speed** in aging adults.

The extracts worked quickly, producing improvements in strength and endurance within **four weeks**. ■

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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REVIEW

Olive Polyphenols + Fish Oil + Sesame



**2,400 mg
EPA/DHA
in four softgels**

Plus Standardized
Olive Extract and
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Item #01982*

120 softgels

1 bottle **\$29.25**

4 bottles \$27.50 each



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in four softgels**

with Standardized
Olive Extract,
Sesame Lignans, Krill
and Astaxanthin

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Fish oil is a popular supplement people use to boost **omega-3** levels in the **heart, brain, eyes**, and other tissues.

Super Omega-3 provides healthy components of the **Mediterranean diet** including highly purified **fish oil**, **sesame lignans**, and standardized **olive extract**.

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CAUTION: If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking these products.

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B12

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VERIFIED CUSTOMER REVIEW

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Each **Magnesium Glycinate** capsule
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This can enable you to achieve healthy
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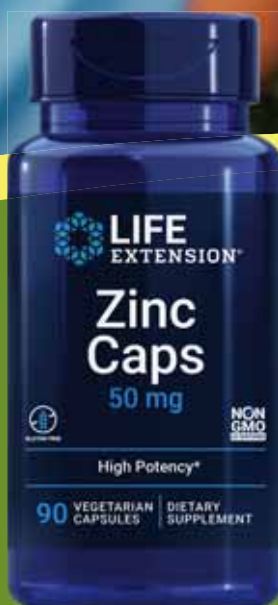
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The Active Vitality & Strength formula

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- Encourage vitality and overall health
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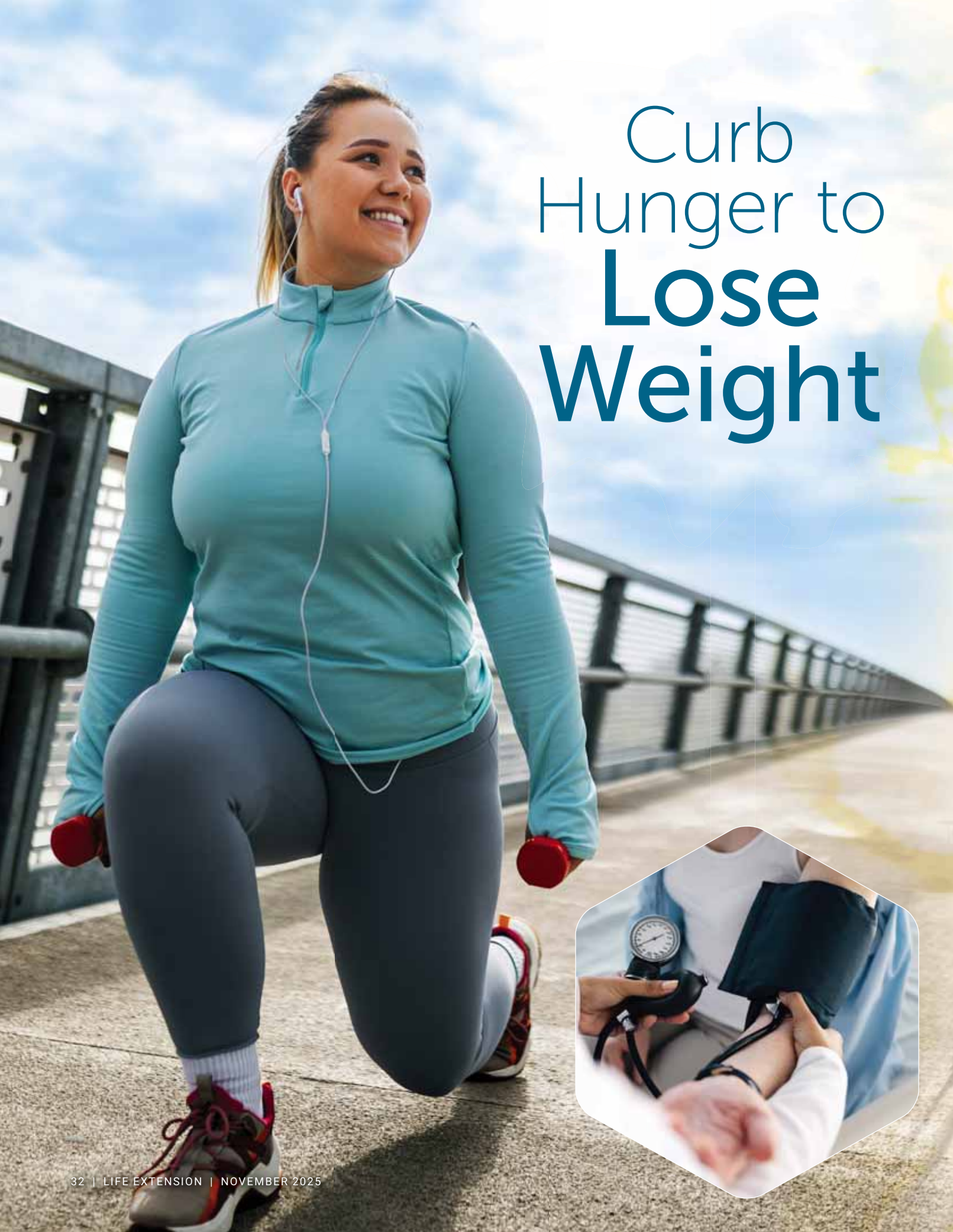
For full product description and to order **Active Vitality & Strength**, call 1-800-544-4440 or visit www.LifeExtension.com

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* Kumar JP. A randomized, double-blind, placebo-controlled study to evaluate the benefit of L12542F6 supplementation in conjunction with an exercise program to enhance muscle strength in healthy aging subjects. Internal Study Report. 2023.

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Curb Hunger to Lose Weight





BY MARSHA MCCULLOCH, MS, RD

Nearly **75%** of U.S. adults are **overweight** or **obese**.¹

That's a major health problem.

Being overweight or obese, and having excess body fat, increases the risk of chronic diseases, including metabolic disorders, **heart disease**, **hypertension**, and **type 2 diabetes**.²

The good news is that losing as little as **5%** of body weight can slightly lower blood pressure, improve blood sugar, and raise good cholesterol.^{3,4}

In a clinical trial in overweight adults, taking a blend of **lemon verbena leaf** and **hibiscus flower** extracts, along with a modest diet and exercise program, led to close to **5%** weight loss in just *two months*.⁵

That was nearly **70%** more weight loss than those who received placebo.

Additional clinical trials show that this blend can help boost **feelings of fullness** (satiety),^{6,7} improve body weight,⁷⁻⁹ and lower **blood pressure**.^{8,10}

The Problem with Weight Loss

A nagging appetite can make it difficult to lose weight.¹¹

People who go on diets frequently gain the weight back.¹²

When calories are restricted, metabolism and the hormones that control hunger are altered. These changes can make it harder to lose more weight and keep it off.^{13,14}

After weight loss, the body makes more **ghrelin**, a hormone that increases hunger. It may also produce less **GLP-1**, a hormone that helps you feel full.¹⁴

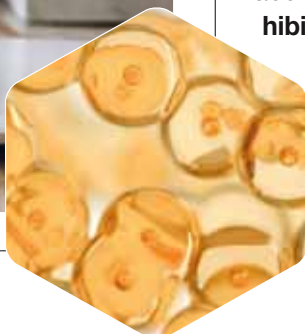
Fortunately, extracts of two plants, **hibiscus** and **lemon verbena**, are effective **non-drug** options for appetite control and weight loss.

Help Shedding Pounds

In a **clinical trial**, 46 overweight or obese women were given either a standardized **500 mg** blend of **lemon verbena leaf** and **hibiscus flower extracts** or a **placebo** 20-30 minutes before breakfast daily for 60 days.⁸

They were also encouraged to follow a moderate **2,200-calorie** diet and walk 30 minutes per day.

The extract group showed enhanced satiety and lost over **8-10 pounds**, over **5%** of their weight, in just **two months**. This was roughly **twice** the weight loss of the placebo group.⁸



Curbing Appetite

In an earlier **clinical trial**, overweight and obese adult women took **500 mg** of the **lemon verbena-hibiscus** extract blend or a placebo daily before breakfast. Participants were advised to consume **2,200** calories and walk at least half an hour daily during the two-month study.⁵

Compared to placebo, the **extract group** showed *higher* levels of the appetite-suppressing **GLP-1** hormone.

Ghrelin levels increased in the **placebo** group but remained stable in the **extract-supplemented** group. These two hormonal changes were associated with greater satiety and **reduced hunger**, as measured by validated scales throughout the intervention.⁵

In another randomized, double-blind, placebo-controlled crossover trial, similar results were observed. Participants who took the extract reported greater fullness and consumed about **9%** fewer calories during an unrestricted meal.⁶

This lower-calorie intake coincided with a **12%** increase in satiety-promoting **GLP-1** after breakfast and a **22%** increase in **GLP-1** after lunch.⁶

In a randomized controlled trial published in 2024, 61 healthy overweight adults took a **lemon verbena-hibiscus extract blend** or a placebo 30 minutes before breakfast for three months.⁷

By the end of the study, the extract group reported **12%** improvement in **hunger satisfaction** one hour after breakfast. Satiety did not improve in the placebo group.⁷

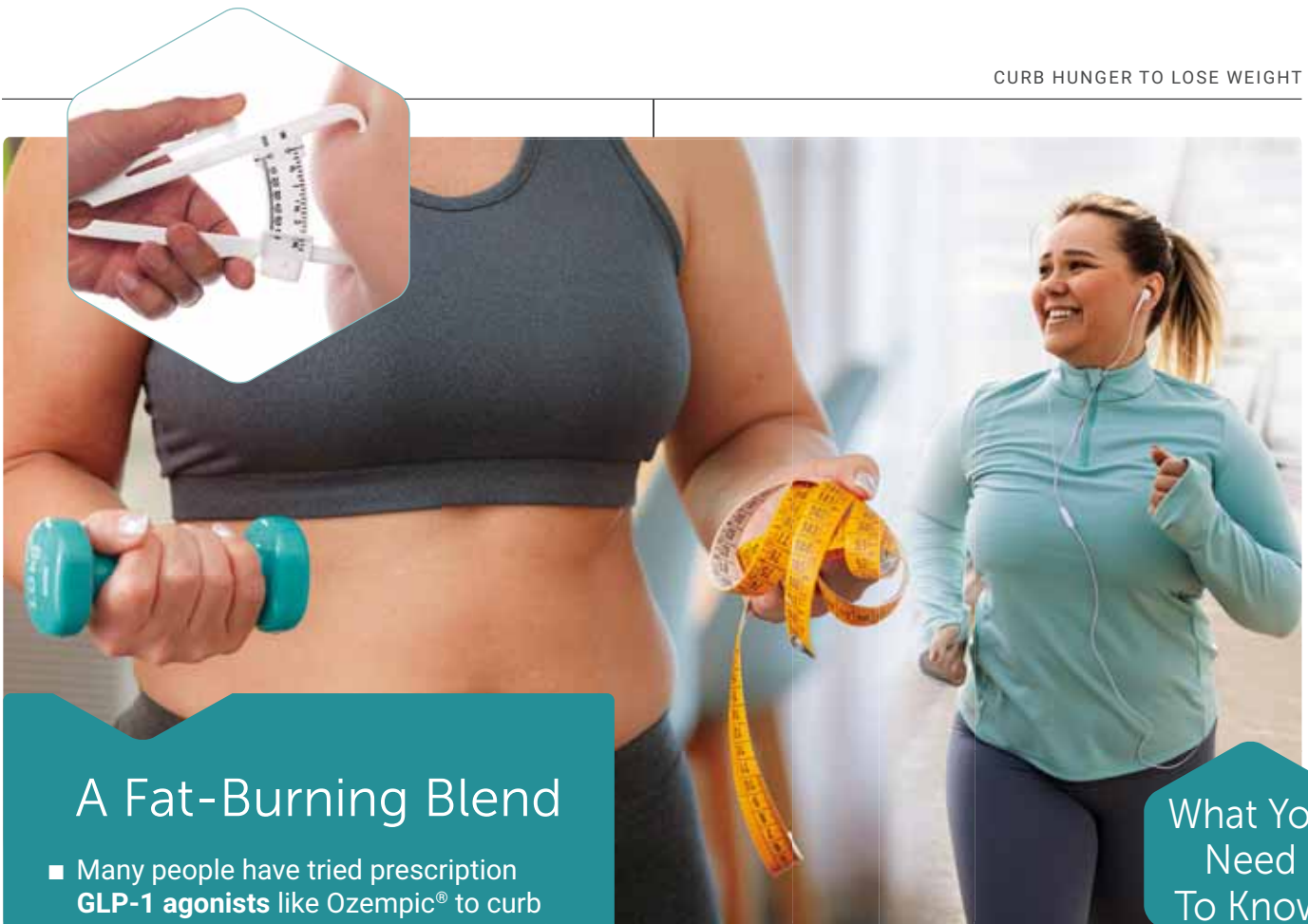
Researchers attributed the weight loss to the extract blend's ability to improve **appetite regulation**.^{5,6}

Better Body Composition

There's a common problem with weight reduction: it can result in the loss of both fat and lean tissue, including **muscle**.¹⁵ This is a potential concern with **GLP-1 agonist** drugs.¹⁶

In a 12-week trial, healthy but sedentary overweight adults took **500 mg** of the combined **lemon verbena-hibiscus extracts** or a **placebo** daily while maintaining their usual eating and lifestyle habits.^{9,17}

The extract group achieved a **6.9%** decrease in **body fat** compared to the baseline, while **maintaining their muscle mass**. The placebo group had little change.



A Fat-Burning Blend

- Many people have tried prescription **GLP-1 agonists** like Ozempic® to curb hunger. But these drugs can come with gastrointestinal and other side effects.
- A blend of **lemon verbena leaf** and **hibiscus flower** extracts works in a similar way, with evidence that it may boost levels of the appetite-suppressant hormone **GLP-1** *without side effects*. These extracts also promote **fat burning**.
- In clinical trials, this extract blend reduced body weight by about **5%** within two months (**70%-100% more** weight loss than placebo), trimmed belly size by **2.3-2.5 inches**, and reduced **blood pressure**.

The extract group also had a decrease in **abdominal fat**.⁹ This kind of fat, also called **visceral fat**, is closely associated with a higher risk of **cardiovascular** and **metabolic disease**.¹⁸

In the **2024** study, those taking the extracts had a **5.7%** reduction in **body fat** over three months and an **8.2%** reduction in **abdominal fat**. Again, no significant muscle loss occurred.⁷

What You
Need
To Know

Burning Fat

The boost in fat loss by the **lemon verbena-hibiscus** blend may be explained, in part, by its ability to activate an **enzyme** called **AMPK (activated monophosphate protein kinase)**.^{6,19}

AMPK signals cells to **burn fat** for energy and store less fat.¹⁹ With age, **AMPK** activity drops significantly.^{20,21}

Other preclinical research suggests **polyphenols** in the extracts support the growth of beneficial **gut bacteria** in ways that may promote AMPK activity and weight control.²²

Lower Blood Pressure

The benefits of the **lemon verbena leaf-hibiscus** flower blend extend to **metabolic health**.

As discussed above, in one randomized controlled trial, overweight or obese women took **500 mg** of the extracts or a placebo before breakfast for two months, while following a **2200** calorie diet and walking 30 minutes daily.⁸

While the **placebo** group experienced little change, the **extract blend-supplemented** groups experienced the following:

- In overweight women, a drop of **16%** (over **20 mmHg**) in **systolic blood pressure** (top number) from baseline, while obese women saw their systolic blood pressure go down by more than **14%** (over **18 mmHg**).⁸
- Reduction in **abdominal circumference** (belly size) on average of about **2.5 inches** in the overweight group, and over **2.33 inches** in the **obese group**.⁸
- Decrease in **resting heart rate** of over **8.5 beats per minute** in the overweight group, and eight beats per minute in the obese group.⁸ An elevated resting heart rate is a key predictor of **mortality**.²³

The extract was well-tolerated with no side effects.⁸

This weight loss and improved metabolic health can support overall healthy aging.

Summary

A blend of extracts of **lemon verbena leaf** and **hibiscus flower** has demonstrated weight loss and metabolic benefits.

The blend has been clinically shown to result in an amount of weight loss known to reduce **chronic disease risk** in just two months when supported by moderate dietary changes and light physical activity.

The extract blend helps with weight loss by promoting **fat burning** and a feeling of **fullness**. ■

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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Testosterone builds muscle, maintains sexual health, supports cardiac function, strengthens bones, and nourishes brain cells.^{1,2}

Testosterone Elite helps maintain healthy testosterone levels:†

- A clinical trial showed that pomegranate and cacao elevated free testosterone levels up to **48%** from baseline in just eight weeks.³
- Helps support physical strength and other benefits of healthy testosterone levels.†

Just one capsule a day.



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Item #02500

30 vegetarian capsules

1 bottle **\$42.75**

4 bottles \$38 each

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

Tesnor® is a trademark of Laila Nutra and Gencor.



† This product is intended to support testosterone levels and does not contain testosterone.



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for my health."

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CAUTION: Individuals consuming more than 50 mcg (2000 IU)/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Do not exceed 10000 IU per day unless recommended by your doctor. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

Item #01713

125 mcg (5000 IU) • 60 softgels

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This includes the *pyridoxal 5'-phosphate* form of vitamin B6 shown to protect lipids and proteins against **glycation** and the most biologically active form of **folate** called *5-methyltetrahydrofolate (5-MTHF)*.*

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Caution: Temporary flushing, itching, rash, or gastric disturbances may occur.

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

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Aging well

Asian populations are known for their longevity and relative health far into their later years.

One reason theorized for this is diet: along with a relative lack of unhealthy fats and other excesses common to the western diet, Japanese diets include high levels of seafood...**including seaweed.**

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Fucoidan is a polysaccharide from edible seaweeds found in Patagonian waters.

Maritech® 926 is a standardized fucoidan that is extracted using water to preserve nutritional benefits and deliver a consistent amount in every dose.

Some of the longest-living people have seaweed nutrients in their diets. **Now, you can too.**



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1 bottle \$27 | 4 bottles \$24.75 each

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Lose What's Weighing You Down

Formulated with
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extracts to promote
satiety and encourage
weight loss[†] in
just **8 weeks**.

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

Individual results are not guaranteed and results may vary.

"I'm pleased with
the results of using
this product."

Francis

VERIFIED CUSTOMER REVIEW



Item #02504 | 30 vegetarian capsules
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and to order **Body Trim and
Appetite Control**,
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Little-Known Nutrient for Healthier Aging

BY MARSHA MCCULLOCH, MS, RD



Many people know about the health benefits of **mushrooms**.

But few are aware of the compound that scientists believe is largely responsible for those benefits: **L-ergothioneine**.

A growing number of studies are linking L-ergothioneine to improved health and **youthful aging**.¹

The problem is that **L-ergothioneine** levels in the body naturally decline with age, especially after age **60**.²

Fortunately, oral L-ergothioneine, made using a specialized fermentation method, has been shown to boost levels in the body.³

L-ergothioneine is a powerful **anti-inflammatory**.^{4,5} In preclinical studies it has been shown to protect cells against **DNA damage**.^{6,7}

Human observational studies and clinical trials suggest it could improve **cognitive function**,^{3,8} promote **younger-looking skin**,⁹ support **cardiometabolic health**,¹⁰ improve **sleep**,¹¹ and reduce the risk of all-cause mortality.¹²

Understanding L-Ergothioneine

L-ergothioneine is an amino acid, but not one the body can produce.⁶

The only organisms known to make L-ergothioneine are certain **mushrooms** and a few microbes.^{6,13} Most people in the U.S. get only small amounts of L-ergothioneine in their diet.⁴

Once consumed, a special **transporter** in the body shuttles **L-ergothioneine** into cells.^{1,4}

L-ergothioneine is a powerful **antioxidant**.¹³ It concentrates in the mitochondria of cells and tissues, including those that are frequently exposed to harmful **oxidative stress**, such as the **brain, eyes, heart and blood vessels**, and **skin**.^{14,15} Preclinical studies have shown its potential to protect cells against damage to DNA, proteins, and lipids.^{16,17}

Interest in L-ergothioneine exploded when a study found that people in Italy (who consume **4.6 mg** of L-ergothioneine a day) had a significantly **longer life expectancy** than Americans (who average only **1.1 mg** of L-ergothioneine daily).⁴

When scientists administered L-ergothioneine to mice orally, their average **lifespan** increased by a stunning **21%** compared to untreated animals.¹⁸



Preserving Telomeres to Slow Aging

A key driver of biological aging and age-related disease is the shortening of **telomeres**.¹⁹

Telomeres are **protective caps** at the ends of chromosomes. Chromosomes are threadlike structures inside the nucleus of a cell, made up of DNA, proteins, and other material, that carry the genetic information for the whole organism and for each cell.²⁰ Every time cells divide, telomeres shorten.²¹

When telomeres get too short for the cell to divide, the cell may become **senescent**.¹⁹ Senescent cells can be dysfunctional and promote chronic inflammation.²²

The accumulation of senescent cells can promote visible signs of aging, such as **wrinkles**,²³ and increase risk of age-related health conditions,^{24,25} including **cognitive decline**.^{24,26,27}

Preclinical research suggests **L-ergothioneine** reduces telomere shortening, which may slow the aging process.^{5,21,28}

When scientists used **L-ergothioneine** to treat cultured **human cells** for eight weeks and compared them to untreated cells, they found the amino acid:²¹

- Boosted the median telomere length, and
- Reduced the percentage of short telomeres.

These benefits were especially strong when cells were exposed to **oxidative stress**.

Protecting Cognition

In a study of 470 older adults attending memory clinics, those with lower blood levels of **L-ergothioneine** had worse brain function, including poorer **memory**.²⁹

Over the next five years, those with lower L-ergothioneine levels had significantly faster rates of **decline** in overall cognitive function.²⁹

Another study found that **Alzheimer's disease** patients with lower L-ergothioneine levels had a **12%** faster rate of disease progression over two years.³⁰

To test whether taking oral L-ergothioneine could *improve* brain function and delay cognitive decline, scientists in Singapore enrolled 19 adults aged 60 and older who had **mild cognitive impairment**. They were randomized to receive **25 mg** of **L-ergothioneine** or a **placebo** three times a week for one year.⁸

The treatment group had significant improvements in **memory** and **learning ability** compared to the placebo.

The L-ergothioneine group also experienced stabilization of **neurofilament light chain** levels, a marker of brain injury and neurodegenerative disease,³¹ while the measure worsened in the placebo group.⁸

In a larger study, 140 healthy older adults with subjective memory concerns³ were given either **25 mg** of L-ergothioneine, **10 mg** of L-ergothioneine, or a placebo daily for 16 weeks.

While the **10 mg** dose boosted L-ergothioneine blood levels **six-fold**, the **25 mg dose** boosted L-ergothioneine levels **16-fold** in the same period.

Both L-ergothioneine groups had significant improvements in **brain function**, including:

- Executive function, the ability to plan and execute goals,
- Complex attention, focusing on multiple things at once,
- Cognitive flexibility, the ability to adapt to new or changing information, and
- Verbal memory.

But *only* the **25 mg** L-ergothioneine group had significant improvements in **prospective memory**, remembering to perform actions in the future, and in the ability to **fall asleep**.³

Support Healthy Aging with L-Ergothioneine

What You Need To Know

- **L-ergothioneine** is an amino acid found in mushrooms and a few other foods that helps promote youthful aging. Few people get enough from their diet, and the body can't make the compound.
- Higher dietary intake of L-ergothioneine is associated with longer **life expectancy**, lower rates of heart disease and cardiovascular mortality, and better brain function.
- Preclinical studies show that L-ergothioneine helps protect **telomeres**, potentially slowing biological aging.
- In a clinical trial, daily oral intake of **25 mg** of L-ergothioneine helped improve cognitive function and promoted quality sleep.



Other Health Benefits

Many other potential health benefits of L-ergothioneine have been uncovered, including:

Cardiometabolic wellness. In a population study that followed 3,236 adults for 20 years, higher blood levels of L-ergothioneine were associated with a **15% lower risk of heart disease**, a **21% lower risk of cardiovascular mortality**, and a **14% lower risk of death from any cause**.¹⁰

Improved sleep. When poor sleepers (ages 40 to 75) took **20 mg** of L-ergothioneine daily for four weeks, **sleep problems decreased** and **sleep quality improved**, compared to placebo.¹¹

These and other benefits may add up to better health and more youthful aging.

Summary

L-ergothioneine, an amino acid found in mushrooms, could be a game changer for youthful aging.

Preclinical research has shown it protects the **telomeres** of cells, helping to slow the aging process.

In human studies, L-ergothioneine has improved **cognitive ability** and **ability to fall asleep**.

Standardized **L-ergothioneine** produced by a specialized fermentation process has been shown to help boost body levels of this amino acid and shows promise to promote **healthy aging**. ■

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

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Add AMPK

TO YOUR HEALTH ROUTINE

AMPK is an enzyme in the body that signals cells to burn **fat** for energy.

Over time, AMPK levels decline and can cause accumulation of **abdominal fat**.

AMPK Metabolic Activator provides gynostemma and hesperidin extracts to:

- Revitalize youthful AMPK activity
- Encourage use of abdominal fat for energy
- Promote healthy cellular metabolism

Item #02207
30 vegetarian tablets

1 bottle **\$28.50**
4 bottles \$24 each

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



Actiponin® is a trademark of TG Biotech Co., Ltd.

This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed, and results may vary.



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Rejuvenate Your Microbiome for Healthy Aging



Item #02539

30 vegetarian capsules

1 bottle \$22.50

4 bottles \$20.50 each

Florassistent® Probiotic Youthful Gut promotes a healthy lifespan with three targeted **probiotics** and a **postbiotic**.

In **clinical trials**, these three **probiotics**:¹⁻⁴

- Encourage a more “**youthful**” gut microbiome
- Promote a healthy inflammatory response
- Support **healthy aging** processes
- Help support cholesterol levels already within the normal range

Youthful Gut contains: PoZibio® HT § *L. paracasei* D3-5, *L. plantarum* ECGC 13110402, *L. rhamnosus* IMC 501, and *L. paracasei* IMC 502 (9 Billion CFU†)

For full product description and to order

Florassistent® Probiotic Youthful Gut,

call **1-800-544-4440** or visit **www.LifeExtension.com**

References

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PoZibio® is protected under US Patent No.11,622,981 and is a registered trademark of Postbiotics, Inc.
L. plantarum ECGC 13110402 is LPLDL.
 † Colony forming units at time of manufacture. § Heat treated.

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Liposomal-Hydrogel™

VITAMIN



"I feel better about
my immune
system with it."

Mary

VERIFIED CUSTOMER
REVIEW



Item #02501 • 60 vegetarian tablets

1 bottle \$25.50 • 4 bottles \$23 each

For full product description and to order
Vitamin C 24-Hour Liposomal Hydrogel™ Formula,
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Buffered **ascorbate** encased in two plant extracts (liposomes plus hydrogel fenu-greek) increases blood (plasma) exposure nearly **seven times** more compared to an equivalent dose of vitamin C as calcium ascorbate.¹

It also maintains vitamin C levels throughout the day.²

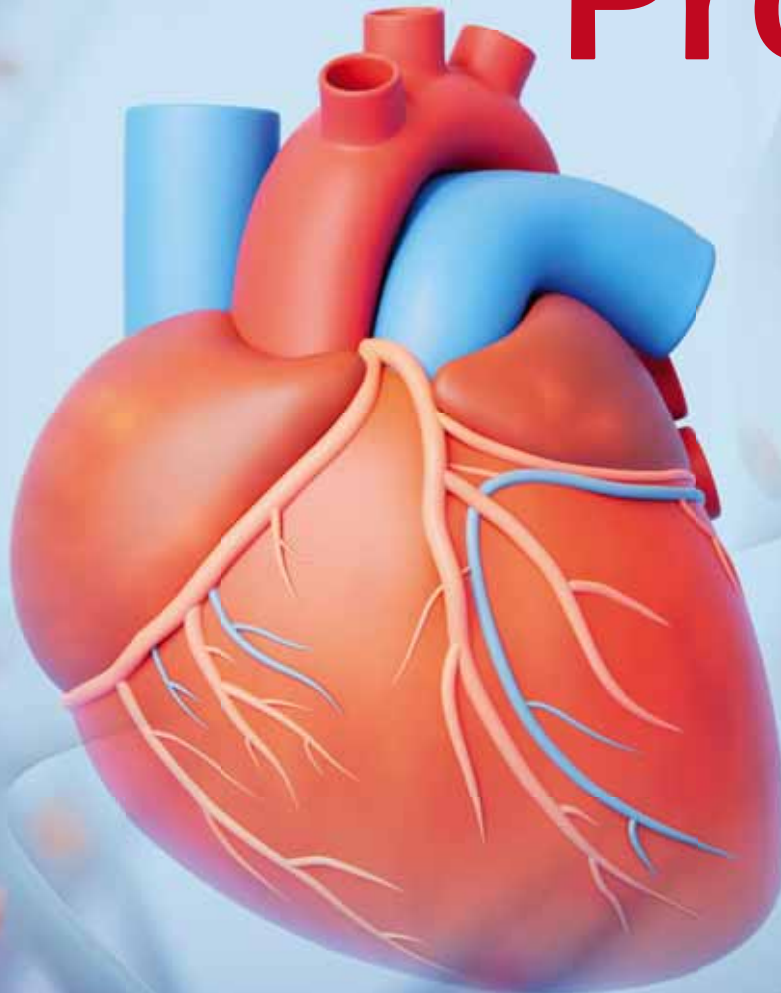
Just **one** vegetarian tablet daily provides **around-the-clock** vitamin C support.

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Maintain Vascular and
Endothelial Health with

Arterial Protect



Arterial Protect supports the body's natural processes for managing arterial debris to help maintain endothelial and circulatory healthy.*

Each capsule provides the patented French Maritime **pine bark extract** used in clinical studies along with **Gotu Kola**.

For full product description and to
order **Arterial Protect**, call **1-800-544-4440**
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* *Int Angiol.* 2014 Feb;33(1):20-6.

Item #02004

30 vegetarian capsules

1 bottle **\$33**

4 bottles \$29 each



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HEALTHY AGING Amino Acid



NEW 25 mg Dose!

L-ergothioneine an amino acid found in **mushrooms** is delivered directly to our cells and mitochondria

Mega L-Ergothioneine provides a powerful dose of highly bioavailable¹ **L-ergothioneine** and may support healthy aging by:

- Promoting plasma ergothioneine levels¹
- Providing sustained ergothioneine levels¹ with **high bioavailability** and efficient absorption
- Supporting overall well-being²
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Just one daily vegetarian capsule of **Mega L-Ergothioneine** provides a full **25 mg** of **L-ergothioneine**.

This new strength provides **25 mg** of **L-ergothioneine** per capsule, which is equivalent to the amount found in approximately **10 to 23** cups of white button mushrooms.³⁻⁵



Item #02540
30 vegetarian capsules

1 bottle **\$28.50**
4 bottles \$26 each

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

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Your Bone Health...Now **BOOSTED**



Bone Restore Calcium Supplement with Vitamin K2 combines skeletal-strengthening nutrients in one formula.

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4 bottles **\$16.50 each**

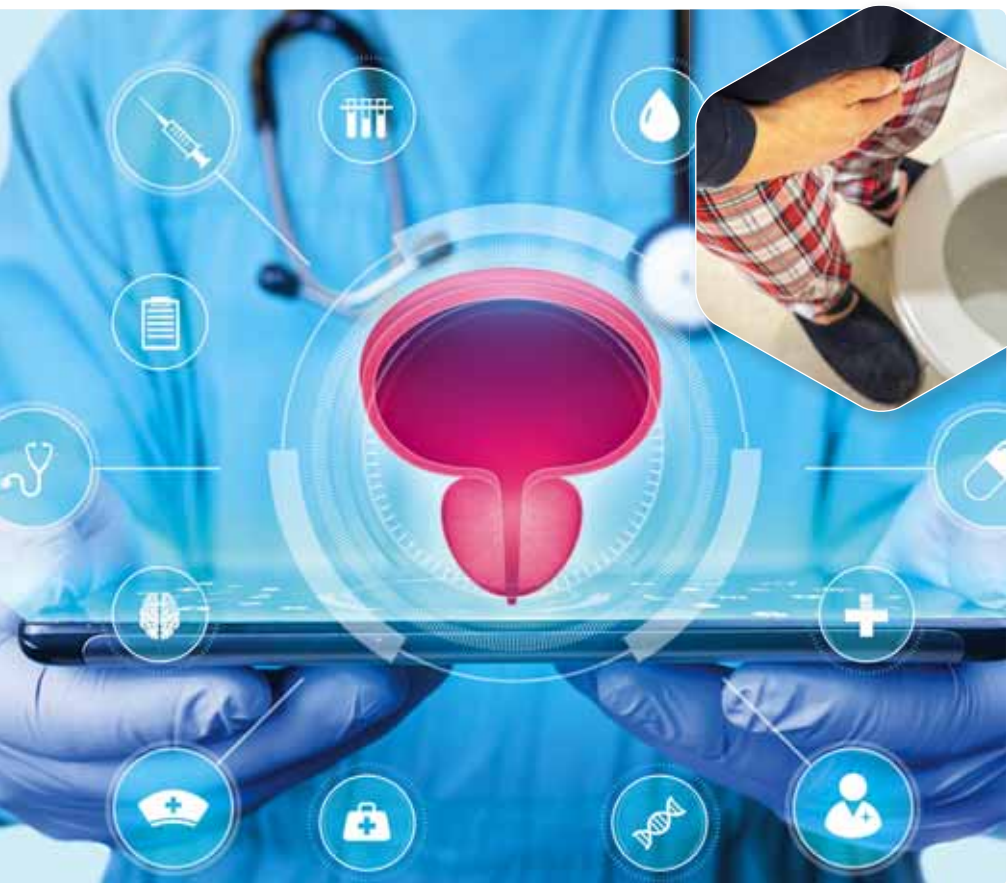


Caution: Those taking a vitamin K antagonist (e.g. warfarin) should use Bone Restore without vitamin K2.
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Reduce Nighttime Bathroom Visits

BY LAURIE MATHENA



Five Ways to Support Urinary Health

2017–2020 NHANES data show that about **40%** of U.S. men aged 40 and older are affected.⁵ After age 70, up to **60%** of men need to urinate at least **twice** per night.⁶

These nighttime bathroom trips contribute to increased risk of falls, sleep disturbance, depression, reduced daytime activity and work productivity, and elevated morbidity and mortality.³

Two of the underlying causes of **nocturia** include **enlargement** of the **prostate** gland (benign prostatic hyperplasia, or BPH) and **overactive bladder**.¹

The following five compounds have been shown to address men's urinary health from a variety of angles.

- **Beta-sitosterol** is a plant compound that can help mitigate underlying causes of LUTS (lower urinary tract symptoms) associated with prostate enlargement.⁷ In a clinical study of men with enlarged prostates, beta-sitosterol reduced urinary symptom severity by **50%**.⁸

As men get older, it is common to experience an increase in **lower urinary tract** symptoms such as urgency, incontinence, dribbling, and weak urine stream.¹

One of the most *common* and bothersome of these symptoms is **nocturia**, which is waking to urinate one or more times during the **night**.^{1,2} This disrupts **sleep**, while increasing the risk of falls and other serious health problems.³

Fortunately, nocturia does not have to be a normal part of life.

A novel combination of five compounds has been shown to help markedly **reduce** nocturia symptoms in men.⁴

- **Pygeum bark extracts** have been shown to help improve lower urinary tract symptoms and quality of life in men with BPH.⁹ One meta-analysis of clinical trials found that Pygeum extracts reduced nocturia by **19%**, reduced residual volume by **24%**, and increased peak urine flow by **23%** in men with BPH.¹⁰



- **Lycopene** is a carotenoid that was shown in a study to improve lower urinary tract symptoms, quality of life, and maximum urine flow rate in men with BPH.¹¹



- **Boron** has been shown in pre-clinical studies to reduce markers of inflammation,^{12,13} modulate sex-hormone production,¹³ and reduce the impact of growth factors that may contribute to prostate enlargement.¹⁴

- **Melatonin**, a hormone that helps some people sleep better,¹⁵ has been shown to reduce nocturia. In elderly men, supplementation was associated with less frequent nighttime urination and improved quality of life.¹⁶



Better Together

Based on the ability of these compounds to address numerous aspects of urinary health, **Life Extension** conducted a clinical trial to determine if they could work *together* to reduce the number of nighttime bathroom visits in men suffering from nocturia.⁴

For the trial, 30 healthy men from 45 to 75 years old with mild lower urinary tract symptoms took a blend of these five compounds every night before bed for 60 days.

They answered questions on the **International Prostate Symptom Score (IPSS)**, a questionnaire that assesses the severity of lower urinary tract symptoms at the beginning and end of the study.⁴

After 60 days, there was a **16.3%** decrease (improvement) in the overall IPSS scores from baseline. The impact on *nocturia* was especially notable.

At the beginning of the study, **87%** of the men had some degree of nocturia. After 60 days, only **23%** reported nocturia symptoms.

In the **37%** of men with severe nocturia (waking two to three times per night to urinate), **none** of them reported waking more than once per night after treatment.

In fact, by the end of the study, **not a single man** reported waking *more than once* per night to urinate.

Summary

Nocturia affects more than half of men over age 50. It is associated with an increased risk of falls and other serious health problems.

A novel combination of compounds can help reduce the frequency of nighttime urination while improving other lower urinary tract symptoms.

These compounds include beta-sitosterol, Pygeum bark extract, lycopene, boron, and melatonin. •

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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"It is my goal
to never run out
of this. Ever!"

Rusty
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REVIEW

Neuro-Mag® THE SMART MAGNESIUM



Supports Overall Cognitive Ability

Neuro-Mag® Magnesium L-Threonate
helps maintain working
(short-term) memory, encourages
healthy processing speed, and
supports overall cognitive function.^{1,2}



Item #01603 • 90 vegetarian capsules
1 bottle **\$31.50** • 4 bottles \$28.50 each



Item #02032 • 93.35 grams of powder
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For full product description and to order **Neuro-Mag® Magnesium L-Threonate** or
Neuro-Mag® Magnesium L-Threonate Powder, call **1-800-544-4440** or visit **www.LifeExtension.com**

References: 1. *Nutrients*;14:5235.10.3390/nu14245235. 2. *J Alzheimers Dis.* 2016;49(4):971-90.

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"This product is
very effective."

Kimberly

VERIFIED CUSTOMER
REVIEW



Item #02033

60 vegetarian chewable tablets

1 bottle **\$9** • 4 bottles **\$8** each

Soothe DIGESTIVE DISCOMFORT

with **Berry Flavor Chewables**

EsophaCool™ supplements maintain **healthy digestive function** and support **esophagus health** with **standardized licorice root extract** and **calcium carbonate**.

EsophaCool™ Benefits:

- Maintains healthy **pH balance** in the esophagus
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Feel Like a Kid Again



If you experience general fatigue, it may be due to the decline of NAD⁺, an important coenzyme found in every cell.

NAD⁺ facilitates the production of ATP, which your body uses for fuel.

The **NAD⁺ Cell Regenerator™** formula provides nicotinamide riboside to help maintain healthy levels of NAD⁺.

NAD⁺ Cell Regenerator™ and Resveratrol Elite™

Nicotinamide riboside (300 mg), bioavailable resveratrol and other cell-energizing nutrients in one capsule.

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NAD⁺ Cell Regenerator™

300 mg of nicotinamide riboside per capsule.

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* For pricing available to readers of this magazine, call 1-800-544-4440 or visit LifeExtension.com/NAD

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NAD⁺ Cell Regenerator™ has met ConsumerLab.com standards for ingredient and product quality for Nicotinamide Riboside in independent testing. More information at www.consumerlab.com.



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COMPREHENSIVE EYE HEALTH FORMULA

MACUGUARD® OCULAR SUPPORT PROVIDES:

- **Lutein, zeaxanthin, and meso-zeaxanthin** to help maintain structural integrity of the **macula** and **retina**.¹⁻⁵
- **Saffron** to help support **vision** as demonstrated by doctors' eye exams.¹
- **Alpha-carotene** to further help support **macular density**.¹



MacuGuard® Ocular Support
with Saffron

Item #01992 • 60 softgels
1 bottle \$18 • 4 bottles \$17 each



MacuGuard® Ocular Support
with Saffron + Astaxanthin

Item #01993 • 60 softgels
1 bottle \$32.25 • 4 bottles \$29 each

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MacuGuard® Ocular Support with Saffron has met ConsumerLab.com standards for ingredient and product quality for Lutein and Zeaxanthin in independent testing. More information at www.consumerlab.com.



Each bottle lasts for two months.

MacuGuard® Ocular Support is available with or without astaxanthin.

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UNINTERRUPTED dreamzzzz

"Very good stuff."

Cecil

VERIFIED CUSTOMER
REVIEW



When nature calls...You answer. Even in the middle of an amazing dream. **Men's Bladder Support** can help inhibit your urge to urinate while asleep.

It provides nutrients to support your prostate and bladder, and melatonin encourages healthy sleep patterns.

In an open study of 30 healthy, older men who took Men's Bladder Support formula for 60 days before bed, up to **60%** reported an uninterrupted night's sleep.*

Enjoy your dreams without interruptions. Try Men's Bladder Support today.

GLUTEN
FREE

1
DAILY

NON
GMO
LE CERTIFIED



Item #02306

30 vegetarian capsules

1 bottle **\$20**

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CAUTION: Do not consume alcohol, drive or operate machinery after taking this product.

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For full product description and to order **Men's Bladder Support**,
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* Glob Adv Health Med. 2020 Nov 27;9:2164956120973639.

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HELP SPEED **CELLULAR ENERGY** RECOVERY

"Great for energy."

Loni

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LifeExtension

D-RIBOSE

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D-Ribose can help recovery, increase energy reserves and maintain healthy energy levels in heart and muscle tissue.



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100 vegetarian tablets
1 bottle \$24
4 bottles \$21 each



Item #00972
150 grams powder
(.33lb. or 5.29 oz)
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Oral Formula Promotes
Hair Growth and Fullness



Item #02538 | 30 softgels

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- Fuller hair with more density
- Reduced hair shedding
- Healthy hair appearance

For full product description and to order **Hair Growth for Men**,
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BY MARK FORRESTER

Reduce MIGRAINE Symptoms

Migraine is the most common headache,¹ and a leading cause of disability in women under the age of 50 globally.²

They are frequently severe and debilitating, and can last for *days*.¹

Researchers have identified several nutrients that can help ***ease the suffering*** in those with migraine episodes.

In separate **clinical trials**, daily intake of these nutrients helped reduce the frequency or severity of migraine attacks.²⁻⁶

Together, they may optimize **migraine relief**.



What Causes Migraine?

A migraine can cause moderate to severe pain that may affect one or both sides of the head and often extends to the neck. It may also involve the face, which is why it is frequently mistaken for a “sinus headache.” The pain can last for hours or even days.¹

Migraines often make daily activities almost impossible, lead to missed work or other obligations, and reduce quality of life.

In addition to head pain, migraine **symptoms** include nausea, vomiting, sensitivity to light, sound, and/or smell, and for some, an **aura** (or sensory disturbance) such as visual changes or speech difficulties.¹

Various changes in and around the **brain** contribute to these headaches.

Inflammation can trigger events that may include changes in blood vessels, nerves, and other tissues. For example, increased levels of a pro-inflammatory protein called **calcitonin gene-related peptide** has been tied to migraine.⁷

This inflammation may make nerves more sensitive to stimulation and contribute to headaches experienced during a migraine.⁷



Six Nutrients That Help Fight Migraine

Scientists have long searched for ways to help those suffering from migraine headaches.

In the medical literature, several **nutrients** have shown promising results in **clinical trials**.

Life Extension collaborated with **Sydney Scotia**, an actor, director, and producer known for her role in the Netflix series *Some Assembly Required*. She suffered from migraine since age 12.

Sydney took inspiration from her medical challenge, the one billion people worldwide impacted by migraine, and her father, Dr. David Dodick, a prominent neurologist and migraine expert.

She founded the research company **MINDED** and assembled a world-class scientific advisory board with the goal of developing safe and effective ways to manage migraine headaches.

The following six nutrients were carefully screened for their benefits in managing migraine symptoms.

MAGNESIUM CITRATE

Magnesium is a mineral known to support neurotransmission and cognitive function, reduce inflammation, and promote healthy blood vessel reactivity and nerve function.⁸

Inadequate magnesium intake is common and may contribute to **migraines**.^{8,9}

In a clinical study, adults with a history of migraine received either **600 mg** of magnesium citrate or a placebo daily for three months.⁴

Those receiving **magnesium** had a **41.6%** reduction in the **frequency** of migraine attacks, compared with a **15.8%** reduction in the placebo group. The number of days with migraine and the need to use drugs to treat attacks also decreased significantly in the magnesium group.

The researchers concluded that magnesium citrate appears to be an effective way to prevent migraines.

VITAMIN B2

Vitamin B2 (riboflavin) is vital for cellular energy production by mitochondria.^{6,10} Scientists believe that deficits in this energy metabolism could be one underlying cause of migraine and that B2 intake might help prevent headaches.⁶

In a clinical trial, taking **400 mg** of **vitamin B2** daily for three months reduced the frequency of migraine attacks *and* the number of days with headaches. In those taking B2, **59%** of subjects had their number of headache days cut at least ***in half***. Only **15%** of placebo recipients had a similar reduction.⁶

FOLATE (VITAMIN B9)

Vitamin B9, also known as **folate** or **folic acid**, helps prevent overactivation of helper cells in the brain and regulates inflammatory processes in animal models.¹¹ It also helps reduce **homocysteine**, which can damage blood vessels when levels are high, especially in individuals with low baseline folate levels.^{12,13}

In women with migraine, taking **2,000 mcg** of **folate** daily for three months decreased the frequency of migraine attacks compared to placebo by about **31%** from **baseline**.³

Folate intake also reduced **MIDAS (Migraine Disability Assessment)** scores, which evaluate the severity of migraine attacks and their impact on daily life.

Use of **rescue medications** (such as pain relievers) to treat migraine attacks also decreased by about **36%** in those taking folate.

VITAMIN B12

Vitamin B12 is vital for the optimal functioning of the nervous system. Deficiency can cause nerve damage and other neurological issues.¹⁴

Preclinical studies indicate that B12 may help reduce nerve damage and inflammation in the nervous system.¹⁵

In the same study cited above that evaluated vitamin B9, a different group of female migraine sufferers received either **500 mcg** of **B12** or a **placebo** daily for three months. The B12 group had a **43% reduction** in frequency of migraine attacks, compared with a slight increase in the placebo group.³

B12 also reduced the need for rescue medications to treat migraines by **43%**.³



What You
Need
To Know

Relief for Migraine Sufferers

- **Migraines** are common and can last for days. Symptoms may include head pain (typically on one side), nausea, sensitivity to light and sound, visual changes, and other neurological symptoms.
- **Six** promising nutrients have demonstrated activity against migraine attacks: magnesium citrate, vitamins B2, B9 (folate), B12, and D3, and coenzyme Q10 (CoQ10).
- These ingredients have been shown in separate clinical trials to reduce frequency, duration, and severity of migraine headaches and to reduce the need for migraine medications.
- A **combination** of these nutrients may maximize relief for those suffering from migraine and other headaches.



COENZYME Q10 (COQ10)

Coenzyme Q10 is essential for normal mitochondrial function and cellular energy production. It may help reduce migraines by lowering inflammation and regulating blood vessel tone, which plays a role in migraine.¹⁶

In a placebo-controlled trial of adults with migraine, taking **300 mg** of **CoQ10** daily for three months reduced frequency of migraine attacks by **43%** and significantly reduced the number of days with headache and nausea. About **48%** of those taking CoQ10 reduced their migraine frequency by **half or more**.⁵

VITAMIN D

Vitamin D has benefits throughout the body. Studies show that vitamin D deficiency is linked to a higher risk of various chronic conditions, including type 2 diabetes, cancer, infections, and cardiovascular, autoimmune, and neurological diseases.^{17,18}

In a clinical study, adults with migraine took **2000 IU (50 mcg)** of vitamin D3 or a placebo daily. The impact of migraine in participants was measured by MIDAS score.¹⁹

After three months, taking **vitamin D3** reduced:

- Frequency of migraine attacks by **35%**,
- Duration of headaches by **39%**,
- Severity of migraine by **25%**,
- MIDAS score by about **35%**, and
- Need for rescue headache medication by **54%**.

As an additional measure, researchers tested for pro-inflammatory **calcitonin gene-related peptide (CGRP)**, a protein that has been demonstrated to be a key trigger of migraine.²

Those receiving vitamin D3 had **14% lower** levels of the pro-inflammatory protein **CGRP** at the end of the study compared to the start. The scientists concluded that vitamin D's ability to help relieve migraines likely stems, in part, from reducing CGRP.

A **combination** of these six nutrients may optimize the ability to ease symptoms of migraine and other headaches.



Summary

Migraine headaches can make sufferers miserable.

Six nutrients have been shown in **clinical trials** to help reduce the frequency and severity of attacks.

Together, these ingredients may significantly reduce the impact of migraine headaches, bringing relief to millions. ■

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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CAUTION: Do not consume alcohol, drive or operate heavy machinery after taking this product.

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Fisetin

The Healthy-Aging Flavonoid

Fisetin, a flavonoid found in strawberries and apples, is currently being studied for its effectiveness as a **senolytic** in humans.¹

Fisetin has low bioavailability due to its breakdown in the small intestines.

Bio-Fisetin® solves this problem by enclosing fisetin with fiber from the fenugreek herb.

A **human** trial showed **bioavailability** of this fisetin compound increased up to **25 times** compared to fisetin* by itself.²

"Good stuff."

Scott

VERIFIED CUSTOMER
REVIEW

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* Studied against powder fisetin
(98% purity)

Item #02414

30 vegetarian capsules

1 bottle \$11.25

4 bottles \$10 each

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Joint Health & Range of Motion



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Krill Healthy Joint Formula promotes healthy joint comfort *and* range of motion through its **patented blend** of Deep-sea whole krill oil, hyaluronic acid, and astaxanthin.

Human studies showed that, taken daily, *the formula in this product*:

- Reduced joint discomfort by **55%** in less than 3 months¹
- Supported joint discomfort relief for **63%** of participants in less than 3 months¹
- Significantly improved physical function scores by the 6th and 12th week^{2,3}

Take **Krill Healthy Joint Formula** alone or with other joint-health supplements.



Item #01600
30 softgels
1 bottle **\$24**

4 bottles \$21.75 each



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For full product description and to order **Krill Healthy Joint Formula**, call **1-800-544-4440** or visit **www.LifeExtension.com**

Keep Your Head Up!



Item #02544

60 Vegetarian capsules

1 bottle **\$33**

4 bottles \$32 each

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Miga-Health™, Powered by
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Daily Support for Cranial Comfort

The **Miga-Health™** formula
contains **six nutrients**

that have been individually studied and
shown to help relieve different aspects
of occasional head discomfort, including
frequency and duration:¹⁻⁷

Magnesium¹

Riboflavin^{2,3}

CoQ10^{4,5}

Vitamin B12⁶

Folate⁶

Vitamin D3⁷

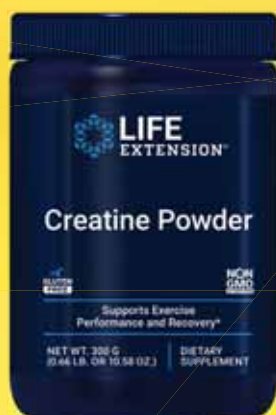
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CREATINE provides **energy-boosting effects** to cells throughout the body to support:*

- Promotes cellular energy and muscle strength¹⁻³
- Increased workout capacity and performance in various age groups¹⁻³
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Premium-grade, pure creatine monohydrate for muscle strength, exercise performance and cellular energy, combined with acetyl-L-carnitine for physical and mental energy and healthy cognitive function.¹⁻³ Every scoop provides **5 grams** of creatine monohydrate and **2 grams** of acetyl-L-carnitine. This unflavored, fine powder dissolves easily and contains no sugar.

Item #02532
Net Wt. 233 g (0.51 lbs.)
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For full product description and to order **Creatine Powder**, **Creatine Capsules**, or **Creatine & Acetyl-L-Carnitine Energy Plus**, call 1-800-544-4440 or visit www.LifeExtension.com

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* When combined with a regular resistance training/exercise program.



Improving Brain Aging with Senolytics

BY STEPHEN RANDALL



The **immune system** has a well-known role in protecting us from infections and cancer.¹

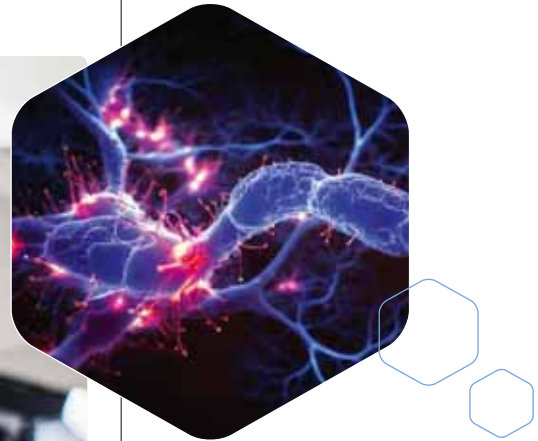
In a major article published in the journal *Neuron* in 2025, scientists from the Department of Brain Sciences at Israel's Weizmann Institute of Science have proposed that **brain health** is more closely influenced by the **immune** system than had previously been known.²

In short, they explain that brain fitness depends on immune fitness.

This means **aging** of the **immune** system leads to **brain aging**, and that *rejuvenating* the immune system may help revitalize brain function.

One way researchers believe it might be possible to rejuvenate immune and brain health is with **senolytics**.

Preclinical studies indicate that these compounds may help eliminate dysfunctional **senescent cells**, which contribute to many problems associated with the aging immune system^{3,4} and the **brain**.^{5,6}



How Senescence Harms the Brain

As cells age and accumulate damage, they can become **senescent**. These cells no longer function properly and fail to die off to make room for healthy new cells.⁷

Senescent cells can also produce a slew of **pro-inflammatory compounds** that circulate in the blood, potentially driving disease and harming brain health.⁷

Many of these **pro-inflammatory** compounds originate in **immune cells**. Elevated levels cause **neuro-inflammation** and rapid aging in the brain. They are associated with an increased risk of **cognitive impairment** and **dementia**.²

In addition, neurons, **microglia** (the brain's immune cells), and other cells in the brain can all become **senescent** themselves.^{2,6,8,9} In mice, the accumulation of **senescent microglia** in the aged brain correlates with cognitive decline and neuroinflammation.^{6,9}

Restoring Immune and Brain Health

Studies in preclinical models show that restoring a more youthful immune system **improves brain function**.

In animal experiments, transfusing young healthy mice with the **blood of elderly mice** causes their brain function to deteriorate, leading to impairment in cognitive functions like learning and memory.¹⁰⁻¹³

Conversely, transfusing young, healthy blood plasma into aged mice leads to improvements in **neurogenesis** (the production of new brain cells), **synaptic plasticity** (the ability of synapses to adapt to stimuli), and **cognitive function**.¹⁴

As bone marrow cells age, they secrete a protein called **cyclophilin A**, which contributes to cognitive decline. *Blocking* this protein in elderly mice increases vital synaptic proteins, supports brain cell growth, and improves cognitive function.¹⁵

In mouse models, **rejuvenating** the immune system by transplanting *young bone marrow* protects older animals against **cognitive decline** and neuroinflammation.¹⁶ (We cannot do this safely in humans yet because of graft-versus-host risk.)

How Senolytics Can Help

The Israeli scientists who published the **2025** article note that increasing **exercise** and improving **diet** can help boost immune function, reduce inflammation, and protect cognitive function.²

One promising additional intervention that is already in clinical trials is **senolytic therapy**.

Plant-Derived Senolytics

One of the first effective senolytic treatments used a plant-derived polyphenol called **quercetin**.¹⁸

Even greater senolytic effects were found when combining quercetin with the cancer drug dasatinib.¹⁹ Quercetin and dasatinib target different senolytic activating factors in senescent cells.²⁰ Dasatinib, however, can cause side effects.²¹

Recent research has identified the potential of **theaflavins**, polyphenols from black tea, to mitigate cellular senescence and delay the onset of age-related diseases.²²⁻²⁵ In mouse models, theaflavins have been shown to inhibit cellular senescence.²⁶

Fisetin, another plant polyphenol was found to be the most potent plant-derived senolytic in a study of 10 flavonoids.²⁷ It has been shown to be neuroprotective in animal models of Alzheimer's²⁸ and Parkinson's disease^{29,30} and has increased lifespan^{27,31} in animal models.

These senolytics may help eliminate senescent cells' burden.

Apigenin, a polyphenol found in plants like chamomile and parsley, has been found in preclinical models to reduce the pro-inflammatory compounds produced by senescent cells.^{32,33}

A combination of these four plant-derived compounds could help reduce senescent cells and the damage they do.



Senolytics help eliminate senescent cells, including in the brain and immune system.⁵

Studies have shown that reducing **senescent cell** numbers leads to improvements in brain function in preclinical models of brain aging and cognitive decline.^{6,9,17}

For example, giving mice a combination of two senolytics, **quercetin** (a plant-derived polyphenol) and **dasatinib** (a cancer drug), reduced the number of senescent microglial cells in the brain. This reduced the pro-inflammatory environment and **improved cognitive function**.⁶

In another study in mice, clearing senescent cells protected cognitive function from deterioration.³

Several **human trials** of senolytic therapy are currently underway in patients with Alzheimer's disease and mild cognitive impairment.²

Summary

A recent article in the scientific journal *Neuron* reports that an age-related decline in **immune** function helps drive the development of cognitive decline and **dementia**.

Many of these changes are caused, in part, by **cellular senescence** in the immune system, bone marrow, and brain.

Senolytic compounds remove harmful senescent cells, including immune *and* brain cells, potentially decreasing neuroinflammation and protecting the brain from age-related deterioration. •

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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ACTIVE LIFESTYLE & FITNESS

02545	Active Vitality & Strength
01529	Creatine Capsules
02543	Creatine Powder
02020	Super Carnosine
02532	Creatine & Acetyl-L-Carnitine Energy Plus
02023	Tart Cherry with CherryPURE®
02186	Wellness Bar - Chocolate Brownie
02518	Wellness Bar - Peanut Butter Chocolate Chip
02246C	Wellness Code® Advanced Whey Protein Isolate Vanilla
02221	Wellness Code® Muscle Strength & Restore Formula
02127	Wellness Code® Plant Protein Complete & Amino Acid Complex
02261C	Wellness Code® Whey Protein Concentrate Chocolate
02260	Wellness Code® Whey Protein Concentrate Vanilla
02243C	Wellness Code® Whey Protein Isolate Chocolate
02242	Wellness Code® Whey Protein Isolate Vanilla

AMINO ACIDS

00038	Arginine Ornithine Powder
01253	Branched Chain Amino Acids
01829	Carnosine
01671	D,L-Phenylalanine Capsules
01624	L-Arginine Caps
01532	L-Carnitine
00345	L-Glutamine
00141	L-Glutamine Powder
01678	L-Lysine
01827	Taurine
00133	Taurine Powder

BLOOD PRESSURE & VASCULAR SUPPORT

01824	Advanced Olive Leaf Vascular Support
02004	Arterial Protect
56885	Natto Activ Cardiovascular & Respiratory Support
02320	NitroVasc™ Boost
01953	Pomegranate Complete
00956	Pomegranate Fruit Extract
02024	Triple Action Blood Pressure AM/PM
02102	VenoFlow™

BONE HEALTH

01726	Bone Restore Calcium Supplement
02123	Bone Restore Calcium Supplement Chewable Tablet
02416	Bone Restore Elite with Super Potent K2
01727	Bone Restore Calcium Supplement w/ Vitamin K2
01725	Bone Strength Collagen Formula
01963	Calcium Citrate with Vitamin D
01506C	Dr. Strum's Intensive Bone Formula
02417	Mega Vitamin K2
01476	Strontium Caps

BRAIN HEALTH

01524	Acetyl-L-Carnitine
01974	Acetyl-L-Carnitine Arginate
02419	B12 Elite
02510	Brain Fog Relief
01659	CDP Choline
02321	Cognitex® Alpha GPC

02396	Cognitex® Elite
02397	Cognitex® Elite Pregnenolone
01540	DMAE Bitartrate
02006	Dopa-Mind™
02413	Dopamine Advantage
01658	Ginkgo Biloba Certified Extract™
01527	Huperzine A
00020	Lecithin
02101	Memory Protect
00709	Migra-Eeze™
01603	Neuro-Mag® Magnesium L-Threonate Caps
02032	Neuro-Mag® Magnesium L-Threonate Powder
02520	Neuro-Mag® Magnewum L-Threonate Gummies
00888	Optimized Ashwagandha
01676	PS (Phosphatidylserine) Caps
02406	Quick Brain Nootropic®
01327	Vinpocetine

CHOLESTEROL MANAGEMENT

01828	Advanced Lipid Control
01910	CHOL-Support™
01304	Theaflavins Standardized Extract
00372	Vitamin B3 Niacin Capsules

DIGESTION SUPPORT

02412	Bloat Relief
02514	Easy Fiber
01736	Effervescent Vitamin C - Magnesium Crystals
02021	Enhanced Super Digestive Enzymes
02022	Enhanced Super Digestive Enzymes and Probiotics
02033	EsophaCool™
01737	Esophageal Guardian
01706	Extraordinary Enzymes
02533	Food Sensitivity Relief with Diamine Oxidase
02100	Gastro-Ease™

ENERGY MANAGEMENT

01628C	Adrenal Energy Formula • 60 veg capsules
01630C	Adrenal Energy Formula • 120 veg capsules
00972	D-Ribose Powder
01473	D-Ribose Tablets
01900	Energy Renew
01544	Forskolin
01805	Ginseng Energy Boost
01869	Mitochondrial Basics with PQQ
01868	Mitochondrial Energy Optimizer with PQQ
01904	NAD+ Cell Regenerator™ • 100 mg, 30 veg capsules
02344	NAD+ Cell Regenerator™ 300 mg, 30 veg capsules
02348	NAD+ Cell Regenerator™ and Resveratrol Elite™
01500	PQQ Caps • 10 mg, 30 vegetarian capsules
01647	PQQ Caps • 20 mg, 30 vegetarian capsules
00889	Rhodiola Extract
02003	Thyroid Support Complex

EYE HEALTH

01923	Astaxanthin with Phospholipids
01514	Eye Pressure Support with Mirtogenol®
01992	MacuGuard® Ocular Support with Saffron
01993	MacuGuard® Ocular Support with Saffron & Astaxanthin
01873	Standardized European Bilberry Extract
01918	Tear Support with MaquiBright®

FISH OIL & OMEGAS

01937	Mega EPA/DHA
02218	Mega GLA Sesame Lignans
01983	Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 60 softgels
01988	Super Omega-3 Plus EPA/DHA Fish Oil, Sesame Lignans, Olive Extract, Krill & Astaxanthin
01982	Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 120 softgels
01985	Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 60 enteric coated softgels
01984	Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 120 enteric coated softgels
01986	Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 240 softgels
01812	Provinal® Purified Omega-7
01640	Vegetarian DHA

FOOD

02008	California Estate Extra Virgin Olive Oil
02170	Rainforest Blend Decaf Ground Coffee
02169	Rainforest Blend Ground Coffee
02171	Rainforest Blend Whole Bean Coffee

GLUCOSE MANAGEMENT

01503	CinSulin® with InSea ² ® and Crominex® 3+
01620	CoffeeGenic® Green Coffee Extract
02122	Glycemic Guard™
00925	Mega Benfotiamine
01803	Tri Sugar Shield®

HEART HEALTH

02530	Aged Black Garlic
01066	Aspirin (Enteric Coated)
01842	BioActive Folate & Vitamin B12 Caps
02531	Cardio Peak™
02121	Homocysteine Resist
02508	Omega-3 Fish Oil Gummy Bites
02018	Optimized Carnitine
01949	Super-Absorbable CoQ10 Ubiquinone with d-Limonene • 50 mg, 60 softgels
01951	Super-Absorbable CoQ10 Ubiquinone with d-Limonene • 100 mg, 60 softgels
01929	Super Ubiquinol CoQ10
01427	Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 30 softgels
01425	Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 100 softgels
01437	Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 30 softgels
01426	Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 60 softgels
01431	Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 200 mg, 30 softgels
01733	Super Ubiquinol CoQ10 with PQQ
01859	TMG Liquid Capsules
00349	TMG Powder

HORMONE BALANCE

00454	DHEA • 15 mg, 100 capsules
00335	DHEA • 25 mg, 100 capsules
00882	DHEA • 50 mg, 60 capsules
00607	DHEA • 25 mg, 100 vegetarian dissolve in mouth tablets
01689	DHEA • 100 mg, 60 veg capsules
02368	Optimized Broccoli with Myrosinase
00302	Pregnenolone • 50 mg, 100 capsules
00700	Pregnenolone • 100 mg, 100 capsules
01468	Triple Action Cruciferous Vegetable Extract
01469	Triple Action Cruciferous Vegetable Extract and Resveratrol

IMMUNE SUPPORT

02302	Bio-Quercetin®
02433	Echinacea Elite
01961	Enhanced Zinc Lozenges
02425	Immune Packs with Vitamin C & D, Zinc and Probiotic
02005	Immune Senescence Protection Formula™
01681	Lactoferrin (Apolactoferrin) Caps
02426	Mushroom Immune with Beta Glucans
01903	NK Cell Activator™
01394	Optimized Garlic
01309	Optimized Quercetin
01811	Peony Immune
01708	Reishi Extract Mushroom Complex
01906	Standardized Cistanche
01561	Zinc Lozenges

INFLAMMATION HEALTH SUPPORT

01639	5-LOX Inhibitor with AprèsFlex®
02324	Advanced Curcumin Elite™
	Turmeric Extract, Ginger & Turmerones
01709	Black Cumin Seed Oil
02310	Black Cumin Seed Oil and Curcumin Elite™
02467	Curcumin Elite™ Turmeric Extract 30 veg capsules
02407	Curcumin Elite™ Turmeric Extract 60 veg capsules
01804	Cytokine Suppress® with EGCG
02223	Pro-Resolving Mediators
56886	Restore Activ Joint Muscle & Tissue
01203	Specially-Coated Bromelain
00407	Super Bio-Curcumin® Turmeric Extract

JOINT SUPPORT

02238	ArthroMax® Advanced NT2 Collagen™ & AprèsFlex®
00965	Fast-Acting Joint Formula
02430	Fast Acting Relief
00522	Glucosamine/Chondroitin Capsules
02420	Glucosamine Sulfate
02424	Joint Mobility
01600	Krill Healthy Joint Formula
02529	Lower Back Relief
00451	MSM (Methylsulfonfylmethane)
02231	NT2 Collagen™

KIDNEY & BLADDER SUPPORT

00862	Cran-Max® Cranberry Whole Fruit Concentrate
01424	Optimized Cran-Max®
01921	Uric Acid Control
01209	Water-Soluble Pumpkin Seed Extract

LIVER HEALTH & DETOXIFICATION

01922	Advanced Milk Thistle • 60 softgels
01925	Advanced Milk Thistle • 120 softgels
02240C	Anti-Alcohol Complex
01651	Calcium D-Glucarate
01571	Chlorophyllin
02402	FLORASSIST® Liver Restore™
02521	Glutathione
01541	Glutathione, Cysteine & C
01393	HepatoPro
01608	Liver Efficiency Formula
01522	Milk Thistle • 60 veg capsules
01534	N-Acetyl-L-Cysteine
01884	Silymarin
02361	SOD Booster

LONGEVITY & WELLNESS

00457	Alpha-Lipoic Acid
02414	Bio-Fisetin®
01214	Blueberry Extract
01438	Blueberry Extract and Pomegranate
02431	Essential Youth - L-Ergothioneine
02119	GEROPROTECT® Ageless Cell™
02415	GEROPROTECT® Autophagy Renew
02401	GEROPROTECT® Stem Cell
02211	Grapeseed Extract
02527	Healthy Aging Powder
00954	Mega Green Tea Extract (decaffeinated)
00953	Mega Green Tea Extract (lightly caffeinated)
02540	Mega L-Ergothioneine
01513	Optimized Fucoidan with Maritech® 926
02230	Optimized Resveratrol Elite™
01637	Pycnogenol® French Maritime Pine Bark Extract
02210	Resveratrol Elite™
02301	Senolytic Activator®
01208	Super R-Lipoic Acid
01919	X-R Shield

LUNG HEALTH

02512	Healthy Lungs
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MEN'S HEALTH

02538	Hair Growth for Men
02209	Male Vascular Sexual Support
00455	Mega Lycopene Extract
02306	Men's Bladder Support
02515	Men's Vitality Packs
01789	PalmettoGuard® Saw Palmetto and Beta-Sitosterol
01790	PalmettoGuard® Saw Palmetto/Nettle Root Formula and Beta-Sitosterol
01373	Prelox® Enhanced Sex for Men
01940	Super MiraForte with Standardized Lignans
02500	Testosterone Elite
01909	Triple Strength ProstaPollen™
02029	Ultra Prostate Formula

MINERALS

01661	Boron
02107	Extend-Release Magnesium
01677	Iron Protein Plus
02403	Lithium
01459	Magnesium Caps
01682	Magnesium (Citrate)
02535	Magnesium Glycinate
01328	Only Trace Minerals
01504	Optimized Chromium with Crominex® 3+
02309	Potassium with Extend-Release Magnesium
01740	Sea-Iodine™
01879	Se-Methyl L-Selenocysteine
01778	Super Selenium Complex
00213	Vanadyl Sulfate
01813	Zinc Caps

MISCELLANEOUS

00577	Potassium Iodide
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MOOD & STRESS MANAGEMENT

02519	Ashwagandha Plus
02434	Calm-Mag
02312	Cortisol-Stress Balance
00987	Enhanced Stress Relief
02542	GABA
01683	L-Theanine
02175	SAME (S-Adenosyl-Methionine) 200 mg, 30 enteric coated vegetarian tablets
02176	SAME (S-Adenosyl-Methionine) 400 mg, 30 enteric coated vegetarian tablets
02174	SAME (S-Adenosyl-Methionine) 400 mg, 60 enteric coated vegetarian tablets
02429	Theanine XR™ Stress Relief

MULTIVITAMINS

02199	Children's Formula Life Extension Mix™
02354	Life Extension Mix™ Capsules
02364	Life Extension Mix™ Capsules without Copper
02356	Life Extension Mix™ Powder
02355	Life Extension Mix™ Tablets
02357	Life Extension Mix™ Tablets with Extra Niacin
02365	Life Extension Mix™ Tablets without Copper
02292	Once-Daily Health Booster • 30 softgels
02291	Once-Daily Health Booster • 60 softgels
02313	One-Per-Day Tablets
02317	Two-Per-Day Capsules • 60 capsules
02314	Two-Per-Day Capsules • 120 capsules
02316	Two-Per-Day Tablets • 60 tablets
02315	Two-Per-Day Tablets • 120 tablets
02428	Whole Food Multivitamin

NERVE & COMFORT SUPPORT

02202	ComfortMAX™
02303	Discomfort Relief
02544	MigraHealth

PERSONAL CARE

02322	Hair, Skin & Nails Collagen Plus Formula
01278	Life Extension Toothpaste
00408	Venotone
02252	Youthful Legs

PET CARE

- 01932 Cat Mix
- 01931 Dog Mix

PROBIOTICS

- 01622 Bifido GI Balance
- 01825 FLORASSIST® Balance
- 02421 FLORASSIST® Daily Bowel Regularity
- 02125 FLORASSIST® GI with Phage Technology
- 01821 FLORASSIST® Heart Health
- 02250 FLORASSIST® Mood Improve
- 02208 FLORASSIST® Immune & Nasal Defense
- 02120 FLORASSIST® Oral Hygiene
- 02203 FLORASSIST® Prebiotic
- 02505 FLORASSIST® Probiotic Women's Health
- 02539 FLORASSIST® Probiotic Youthful Gut

SKIN CARE

- 02423 Daily Skin Defense
- 01938 Shade Factor™
- 02129 Skin Care Collection Anti-Aging Serum
- 02130 Skin Care Collection Day Cream
- 02096 Skin Restoring Ceramides
- 02528 Vegan Pro Collagen

SLEEP

- 01512 Bioactive Milk Peptides
- 01511 Enhanced Sleep without Melatonin
- 02234 Fast-Acting Liquid Melatonin
- 01669 Glycine
- 02308 Herbal Sleep PM
- 01722 L-Tryptophan
- 01668 Melatonin • 300 mcg, 100 veg capsules
- 01083 Melatonin • 500 mcg, 200 veg capsules
- 00329 Melatonin • 1 mg, 60 capsules
- 00330 Melatonin • 3 mg, 60 veg capsules
- 00331 Melatonin • 10 mg, 60 veg capsules
- 00332 Melatonin • 3 mg, 60 veg lozenges
- 02201 Melatonin IR/XR
- 01787 Melatonin 6 Hour Timed Release
300 mcg, 100 veg tablets
- 01788 Melatonin 6 Hour Timed Release
750 mcg, 60 veg tablets
- 01786 Melatonin 6 Hour Timed Release
3 mg, 60 veg tabs
- 01721 Optimized Tryptophan Plus
- 01445 Quiet Sleep Melatonin • 5 mg, 60 veg capsules
- 02502 Rest & Renew
- 02526 Serene Sleep

VITAMINS

- 01533 Ascorbyl Palmitate
- 00920 Benfotiamine with Thiamine
- 01945 BioActive Complete B-Complex
- 00102 Biotin
- 00084 Buffered Vitamin C Powder
- 02229 Fast-C® and Bio-Quercetin®
- 02075 Gamma E Mixed Tocopherol Enhanced with
Sesame Lignans
- 02070 Gamma E Mixed Tocopherol & Tocotrienols
- 01913 High Potency Optimized Folate

- 01674 Inositol Caps
- 02244 Liquid Vitamin D3 • 50 mcg (2000 IU)
- 02232 Liquid Vitamin D3 (Mint) • 50 mcg (2000 IU)
- 01936 Low-Dose Vitamin K2
- 00373 No Flush Niacin
- 01939 Optimized Folate (L-Methylfolate)
- 01217 Pyridoxal 5'-Phosphate Caps
- 01400 Super Absorbable Tocotrienols
- 02334 Super K
- 01863 Super Vitamin E
- 02422 Vegan Vitamin D3
- 02028 Vitamin B5 (Pantothenic Acid)
- 01535 Vitamin B6
- 00361 Vitamin B12 Methylcobalamin
- 01536 Vitamin B12 Methylcobalamin
1 mg, 60 veg lozenges
- 01537 Vitamin B12 Methylcobalamin
5 mg, 60 veg lozenges
- 02228 Vitamin C and Bio-Quercetin®
60 veg tablets
- 02227 Vitamin C and Bio-Quercetin®
250 veg tablets
- 01753 Vitamin D3 • 25 mcg (1000 IU), 90 softgels
- 01751 Vitamin D3 • 25 mcg (1000 IU), 250 softgels
- 01713 Vitamin D3 • 125 mcg (5000 IU), 60 softgels
- 01718 Vitamin D3 • 175 mcg (7000 IU), 60 softgels
- 01758 Vitamin D3 with Sea-Iodine™
- 02040 Vitamins D and K with Sea-Iodine™

WEIGHT MANAGEMENT & BODY COMPOSITION

- 02479 7-Keto® DHEA Metabolite
100 mg, 60 veg capsules
- 02207 AMPK Metabolic Activator
- 02504 Body Trim and Appetite Control
- 02478 DHEA Complete
- 02506C Mediterranean Weight Management
- 01432 Optimized Saffron
- 02511 Thermo Weight Control
- 02509 Waistline Control™

WOMEN'S HEALTH

- 01942 Breast Health Formula
- 02537 Daily PMS Relief
- 02534 Estrogen Balance Elite
- 01894 Estrogen for Women
- 02541 Hair Growth for Women
- 02204 Menopause Relief
- 02319 Prenatal Advantage
- 02536 Sexual Health for Her
- 01649 Soy Isoflavones
- 02513 Women's Bladder Support

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The Senolytic Activator® formula provides the following nutrients:

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- **BIO-QUERCETIN®**
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- **APIGENIN**
(a natural flavonoid)
- **BIO-FISETIN®**
(up to **25 times** greater bioavailability)*

With age, our body accumulates **senescent cells** that affect the day-to-day function of the healthy cells around them.

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Lori

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REVIEW

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results in up to **45 times**
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† Studied against powder turmeric extract standardized to 95% curcuminoids

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IN THIS EDITION OF *LIFE EXTENSION* MAGAZINE®



7 **TRIBUTE TO A LIFE-SAVING PIONEER**

Harvard scientist Kilmer McCully identified **homocysteine** as a **cardiovascular** risk factor, but his theory was rejected for many years. The ***New York Times*** ran an obituary vindicating Dr. McCully's pioneering research.



22 **STOP FEELING OLD!**

A **clinical trial** of aging men and women found two **plant extracts** significantly *boosted* **vitality** and **muscle strength**.



32 **CURB HUNGER TO LOSE WEIGHT**

In a clinical trial of **overweight** adults, a blend of **plant extracts**, along with a modest diet and exercise program, led to close to **5% weight loss** in just **two months**.



42 **HEALTHIER AGING**

L-ergothioneine, an amino acid, found in **mushrooms**, protected **telomeres** in preclinical studies. In **human** trials, **L-ergothioneine** *improved* **cognitive ability** and **cardio-metabolic function**.



53 **REDUCE NIGHTTIME BATHROOM VISITS**

In a clinical trial, **five compounds** helped *reduce* **nocturia symptoms** in men. After 60 days, not a *single* subject woke more than once a night to urinate.



62 **MIGRAINE SYMPTOM MITIGATION**

Six **nutrients**, in separate clinical trials, *decreased* frequency, duration, and severity of **migraine** headaches and reduced the need for migraine medications.

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