



LIFE
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The Science of a Healthier Life®

September/October 2023

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**SHARPEN
MENTAL**

FOCUS

**WHILE
REDUCING
STRESS**

PLUS:
Defend
Against the
Challenges of
Male Aging,
Page 38



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*Gerontology. 1996;42(3):170-80.

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"Great product."

Jack

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Energy Renew contains a proprietary extract of French oak wood that can help promote healthy energy levels.

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* J Agric Food Chem. 2014 Jan 15;62(2):443-53.

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REPORTS



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ON THE COVER

Reduce Stress... Sharpen Mental Focus

Ashwagandha has been shown to clinically *reduce stress* by **71%**. When combined with a patented **spearmint**, the two extracts *increased* mental alertness while restoring calm.



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10 IN THE NEWS

EPA in omega-3 improves depression scores; vitamin E reduces rheumatoid arthritis symptoms; vitamin D lowers risk of suicide in military veterans; green tea improves indicators of fat-tissue health; Multivitamins help maintain memory in older adults; lower B12 and folic acid levels linked to *H. pylori* infection in men with erectile dysfunction; fish oil improves body composition, strength, performance in older individuals; and more.

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Decades of research have identified nutrients that safely help aging men support sexual, hormonal, and prostate health.

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Found in every living cell, **NAD+** levels sharply decline with age. Restoring NAD+ has been shown in animal models to support brain, heart, and metabolic health.

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Tart cherry is known to improve exercise endurance and muscle recovery. Recent research shows that tart cherry helps reduce inflammation, preserve bone density, and boost cognition.

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Cistanche, the ancient Chinese herb, has been shown in animal studies to provide neuroprotective and immunomodulatory properties.

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Scientists have identified plant-derived ingredients and minerals that can reduce blood **glucose levels** and **improve insulin sensitivity**.



18



56



72



88



The Science of a Healthier Life®

SEPTEMBER/OCTOBER 2023

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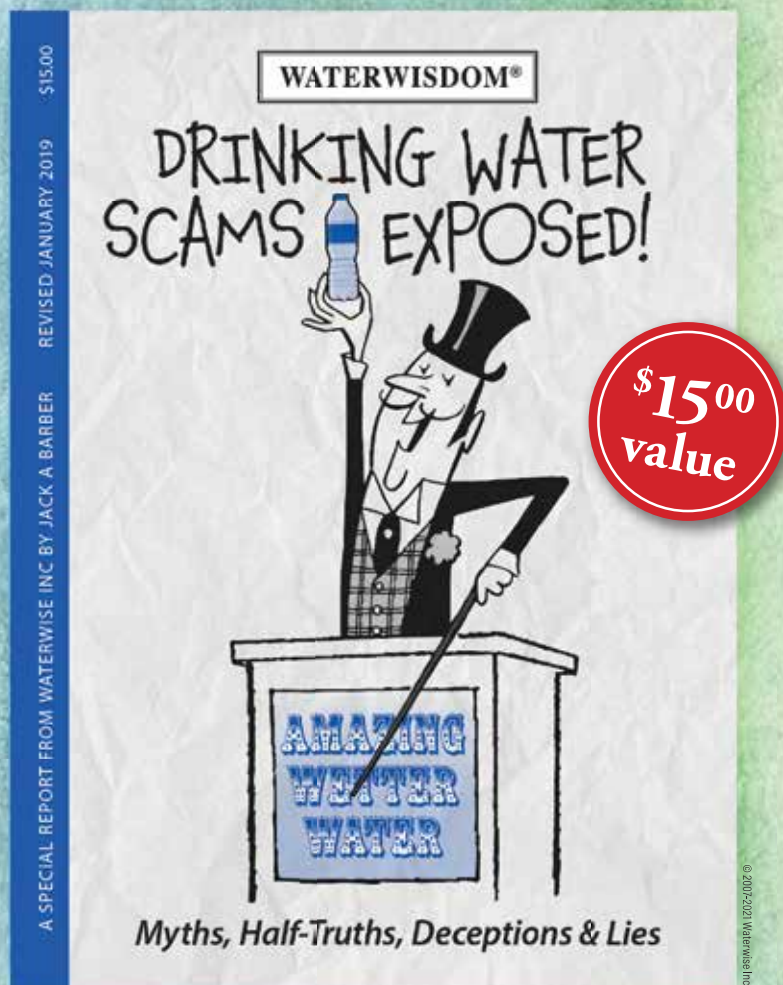
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In the News

Omega-3s May Have Antidepressant Effects

The omega-3 fatty acid EPA has shown benefits for people with **depression**, a study in *Neuropsychopharmacology* reported.*

Chronic inflammation has been linked to the pathophysiology of depressive disorders. The study included 45 people with major depressive disorder and high **C-reactive protein**. Depression symptoms were assessed using the IDS-C30 scale.

Participants received either **one, two, or four grams** of EPA or a placebo. Plasma omega-3 fatty acids, pro-resolving mediators (SPMSs), and other factors were assessed before and after the 12-week treatment period.

After 12 weeks there was a **50%** reduction in depression scores in the group that received **4 grams** of EPA, compared to a low dose or placebo. The high-dose group also had greater increases in the pro-resolving mediators **18-HEPE** and **13-HDHA** and had significant reductions in **C-reactive protein** blood levels.

Editor's Note: Higher levels of the omega-3 metabolites **18-HEPE** and **13-HDHA** were associated with reduced systemic inflammation and depression symptoms. "This highlights the activation of the resolution of inflammation as a likely mechanism in the treatment of major depressive disorder with omega-3 fatty acid supplementation," the authors concluded.

When treating patients with depression, physicians may consider ordering C-reactive protein blood tests to identify those most in need of higher-dose omega-3 intake.

* *Neuropsychopharmacology*. 2023 48:929-35.





Vitamin E Reduces Rheumatoid Arthritis Symptoms

Supplementing with vitamin E helped reduce joint discomfort, water retention, and stiffness in people with rheumatoid arthritis, according to the findings of a systematic review and meta-analysis published in the *European Journal of Clinical Nutrition*.*

Rheumatoid arthritis is an autoimmune disease that can cause joint stiffness, pain, and other complications, including cardiovascular disease. Researchers selected nine trials that included a total of 39,845 rheumatoid arthritis patients. The trials compared the effects of vitamin E to placebo, other treatments, or external therapy.

Participants who received **vitamin E** experienced significantly greater improvements in joint comfort, tenderness, and swelling than those in the control group.

Editor's Note: "Vitamin E supplements used on a regular basis can help individuals with RA reduce joint discomfort, edema, and stiffness, as well as enhance their overall quality of life," the authors concluded.

* *Eur J Clin Nutr*. 2023 Feb;77(2):166-172.

Supplementing with Vitamin D Lowers Risk of Suicide in Military Veterans

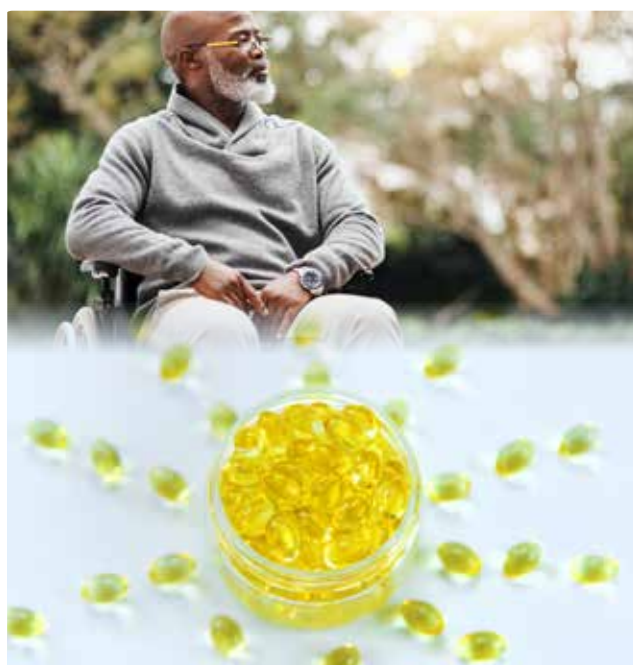
A study of U.S. military veterans found a lower risk of suicide and self-harm among those who supplemented with vitamin D, compared with those who did not, according to a study published in *PLoS One*.*

Information was analyzed from the Veterans Administration's Corporate Data Warehouse for this retrospective cohort study, which included men and women treated with and without vitamin D2 or vitamin D3 from 2010 to 2018. The study compared 169,241 veterans who were prescribed vitamin D2, and 490,885 veterans treated with vitamin D3, with an equal number of control subjects who received neither vitamin.

The researchers found a **45% lower** risk of suicide attempts or self-harm among vitamin D2 users and a **48% lower** risk among those prescribed vitamin D3 compared to veterans who used no vitamin D supplements.

Editor's Note: "As a relatively safe, easily accessible, and affordable medication, supplementation with vitamin D in the VA may hold promise if confirmed in clinical trials to prevent suicide attempts and suicide," according to the researchers.

* *PLoS One*. 2023 Feb 1;18(2):e0279166.



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* *PLoS One*. 2023 Feb 1;18(2):e0279166.



Green Tea May Improve Fat Tissue Dysfunction

Women who consumed green tea extract **daily** showed **improvements** in their fat tissue, according to a clinical trial reported in the journal *Nutrients*.*

In a trial of 28 overweight or obese postmenopausal women, study subjects were randomized to receive **150 mg of green tea extract** or a placebo daily. The extract contained between **19% and 25%** catechins and at least **13%** EGCG (the major catechin in green tea).

At the end of the **60-day** trial women who consumed the green tea extract had improvements in indicators of adipose (fat tissue) health, including metabolic health markers, compared to the placebo group.

They also showed improvements in insulin and insulin resistance, waist circumference, and C-reactive protein, a marker of **inflammation**.

Editor's Note: Increased fat deposited around the abdominal organs secrete proinflammatory chemicals, increasing the risk of metabolic disorders.

* *Nutrients*. 2022 Dec; 14(24): 5209.



Multivitamins Help Maintain Memory in Aging Individuals

Results from two clinical trials indicate that daily multivitamin supplementation can help prevent memory loss and slow cognitive decline among older individuals, the *American Journal of Clinical Nutrition* reported.*

The COcoa Supplement and Multivitamin Outcomes Study (COSMOS), including (COSMOS-Web and COSMOS-Mind) evaluated the effects of multivitamin supplementation on cognitive function.

COSMOS-Mind found that compared to a placebo, supplementing with a daily multivitamin-mineral was associated with better scores for cognition and executive function, and less cognitive decline.

COSMOS-Web included 3,562 men and women who received a multivitamin supplement or a placebo daily for three years. Cognitive assessments were conducted at enrollment and yearly for the remainder of the trial. After one year, as well as on average during the three years of follow-up, participants who received **multivitamins** had better immediate recall compared with the **placebo** group.

Editor's Note: The researchers estimated that, "... the effect of the multivitamin intervention improved memory performance above placebo by the equivalent of 3.1 years of age-related memory change."

* *Am J Clin Nutr*. 2023 May 24.

Lower Folate-B12, Higher Homocysteine, and *H.Pylori* Linked with Erectile Dysfunction

A recent clinical study found that *H. pylori* infection may lead to decreased *absorption* of vitamin B12 and folic acid. This led to increased homocysteine levels, which might be associated with erectile dysfunction (ED) in men.*

Among other factors involved in erectile function, *higher* levels of serum homocysteine is associated with poor endothelial functioning which accelerates **atherosclerosis**.

In this observational study, researchers investigated the relationship between homocysteine, folic acid, and vitamin B12.

It was found that *H. pylori* antibodies were *higher* in men with ED as compared to healthy men.

The ED group also had significantly *higher* levels of **homocysteine** and lower levels of B vitamins as compared to healthy men.

Editor's Note: Researchers concluded that *H. pylori* infection eradication or folic acid and B12 supplementation might have certain clinical value in the treatment of vascular ED.

* *Sex Med*. 2023 Mar 1;11(2):qfac018.





Fish Oil Improves Body Composition, Strength, Performance in Older Individuals

A secondary analysis of findings from a clinical trial found improvements in body composition, muscle strength and physical performance among older men and women who consumed a supplement containing **fish oil** compared to a **placebo**.*

The six-month trial included 200 people aged 60 and older. Participants were randomized to receive a **fish oil** supplement that provided **1,340 mg of EPA** and **1,007 mg of DHA** or a **placebo**.

After six months, there was a significant increase in thigh circumference among those who received fish oil, while waist and hip circumference remained relatively the same.

Total skeletal muscle mass, appendicular skeletal muscle mass, muscle strength (as evaluated by hand-grip strength measurement) and physical performance (demonstrated by the ability to rise from a chair and walk) also improved among fish oil-supplemented participants compared with the placebo group.

Editor's Note: The supplemented group additionally experienced a decrease in serum triglycerides and an increase in HDL cholesterol.

* *Age Ageing*. 2022 Dec 5;51(12):afac274.

Lower Vitamin C Levels Linked to Greater Health Risk for Diabetics

Low serum levels of vitamin C may put adults with pre-diabetes or diabetes at greater risk, a study showed.*

The study analyzed data from 52,150 individuals who participated in NHANES from 1999–2018. Among the participants 6,827 had type II diabetes and 428 had type I diabetes. Data included fasting plasma glucose and A1c levels.

Those whose intake of vitamin C was lower than the estimated average requirement had a **20% higher** risk of type II diabetes compared with an intake above the estimated average requirement.

Those who did not use vitamin C supplements had a **28%** greater risk than supplement users.

Low and deficient serum vitamin C levels were associated with fewer years of life in comparison with normal levels.

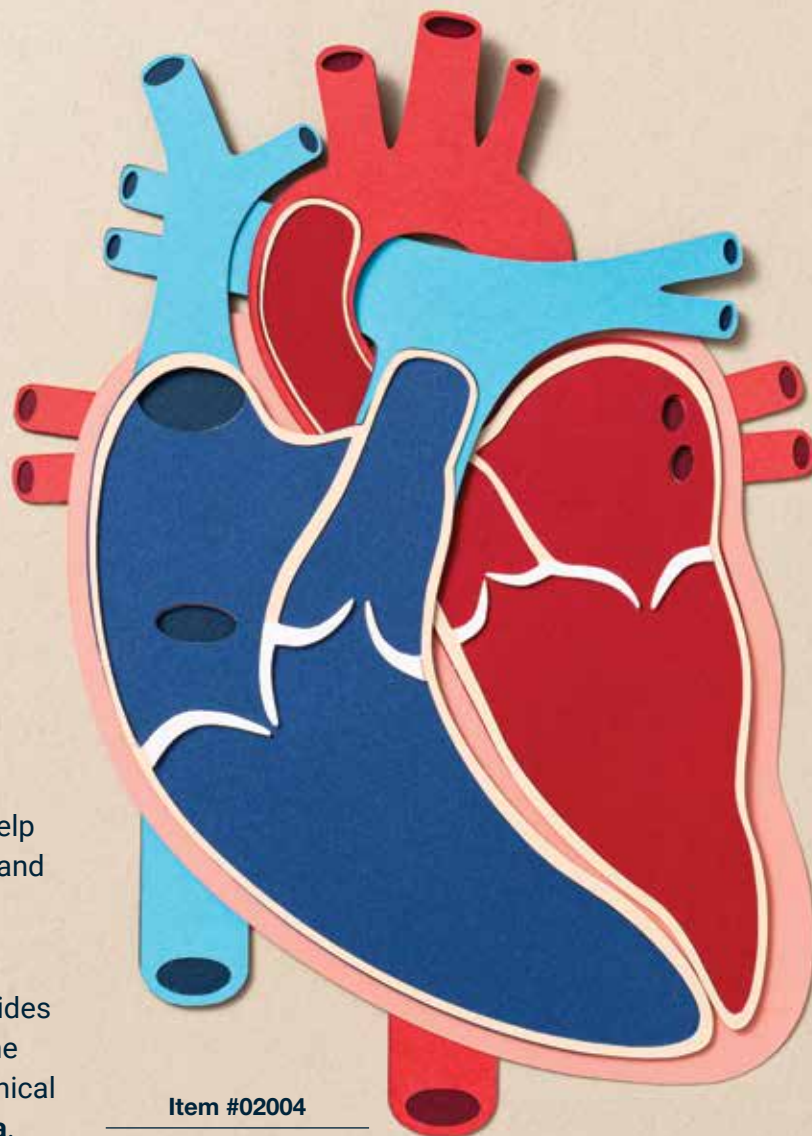
Editor's Note: Not supplementing with vitamin C was associated with a **25%** greater mortality risk among people with type I diabetes, a **20%** greater risk among those with type II diabetes, and a **24%** greater risk among those without diabetes compared with those who supplemented.

* *Nutrients*. 2022 Sep 21;14(19):3902.



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* *Int Angiol.* 2014 Feb;33(1):20-6.



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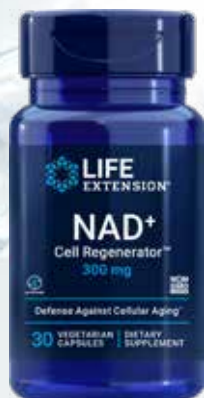
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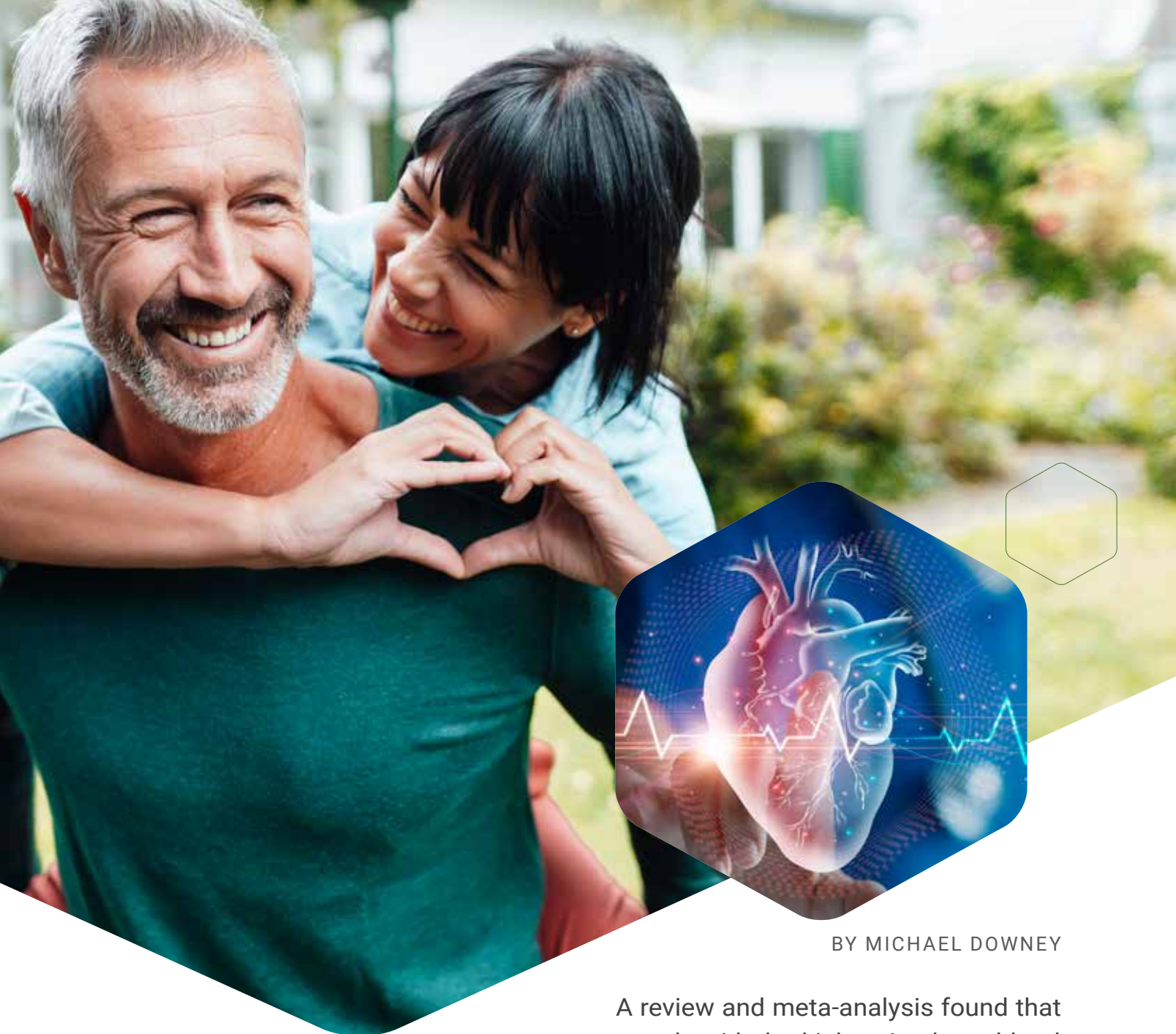
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How **LYCOPENE** Protects the Heart



BY MICHAEL DOWNEY

Annual worldwide deaths from **cardiovascular disease** are expected to reach **23 million** by 2030.¹

Searching for ways to support cardiovascular health, scientists have accumulated compelling evidence about **lycopene**.¹⁻³

Research shows that lycopene **reduces** a wide range of cardiovascular disease risk factors.

A review and meta-analysis found that people with the *highest* intake or blood levels of **lycopene** had a:⁴

- **14%** lower risk of **cardiovascular disease**,
- **26%** lower risk of **stroke**, and a
- **37%** lower risk of **mortality**.

This article describes underlying mechanisms behind lycopene's multi-faceted protective effects.

Lycopene and Heart Disease

Lycopene is a carotenoid pigment known for its potent **antioxidant** and **anti-inflammatory** effects. It is found in tomatoes, apricots, melons, papayas, grapes, peaches, watermelons, and cranberries.

Lycopene has long been known for its role in promoting prostate health. Now scientists have found that it may also reduce the risk of **cardiovascular disease**.⁵

By working via several mechanisms, lycopene can mitigate factors that drive **aging** and chronic disorders, including **cardiovascular disease**.^{1,2}

Lycopene's Vascular Protective Properties

Cardiovascular disease is a multi-factorial process that includes high levels of **oxidative stress** and **inflammation**.^{1,6}

Oxidative stress contributes to **endothelial dysfunction** and promotes **inflammation** within arteries that predispose to atherosclerosis.⁷

The resulting formation of **atherosclerotic plaque** can block blood flow or cause clots, triggering a heart attack or stroke.¹

Chronically high levels of **inflammation** and **oxidative stress** are also believed, in certain circumstances, to contribute to **cardiac hypertrophy**, a thickening of the heart muscle that makes it more difficult for the heart to pump blood.¹

Lycopene bolsters the body's innate cellular defense mechanisms. It boosts levels of **glutathione**, a potent antioxidant produced in the body, and regenerates other antioxidants, including **vitamins E** and **C**.^{1,8}

In preclinical models, **lycopene** has also been shown to increase the activity of multiple **enzymes** that are critical components of our cellular free radical defenses.⁹⁻¹¹

Through these mechanisms, lycopene may prevent the **DNA damage** that increases the risk of atherosclerosis and cardiovascular disease.^{1,2,12,13}

Suppressing Inflammation

Harmful **inflammation** in tissues is considered a root cause of cardiovascular disease.

In cell and animal model studies, lycopene prevents and even *reverses* inflammation by inhibiting synthesis and release of multiple inflammatory cytokines (signaling proteins). It also inhibits **nuclear factor-kappa B (NF-κB)**, the master regulator of inflammation.^{1,14-17}

Various factors can cause heart cells to die off. Lycopene helps *avoid* this cell death. This suppresses harmful changes to the heart's size and shape after a heart attack called **ventricular remodeling**.^{1,2}

Lycopene may also improve **endothelial function**.¹⁻³ The endothelium (the lining of blood vessels) is critical to healthy blood flow, nutrient exchange, and more.



Researchers hypothesize that the **oxidation** of low-density lipoprotein (LDL), which carries cholesterol into the bloodstream, plays a major role in the buildup of plaque that leads to occlusive **heart attacks** and **strokes**.^{1,6,18}

Preclinical studies have shown that **lycopene** may *s/ow* the progression of atherosclerosis by inhibiting or preventing damaging oxidative processes (such as inhibition of LDL oxidation and proinflammatory activity).^{1,2}

In animal studies, lycopene intake reduces *total* cholesterol, **LDL** (“bad”) cholesterol, **VLDL** cholesterol (another bad form that helps it build up in arteries), and triglycerides. It also increases beneficial **HDL** cholesterol.¹

Hypertension (high blood pressure) increases risk of heart disease, heart attack, and stroke.¹⁹ Lycopene delivers an **antihypertensive** effect by inhibiting the **angiotensin converting enzyme** (ACE) - an enzyme that causes blood vessels to constrict.¹

What Human Studies Show

Several studies show cardiovascular benefits in people taking **oral lycopene** or pursuing a diet high in lycopene.

In a trial, male participants were randomized to receive **6 mg** or **15 mg** of **lycopene** or a **placebo**. After eight weeks researchers observed significant **improvement** in **endothelial function** and a reduction in inflammatory markers in the **15 mg** lycopene group, compared to the low-dose or placebo arms of the study. There was also a beneficial increase in **LDL particle size** in the **high-dose** group.²⁰ (Smaller LDL particle size is more atherogenic than larger.)²¹

In a double blinded clinical trial, 36 statin-treated cardiovascular disease patients and an equal number of healthy volunteers were randomized in a 2:1 treatment allocation ratio to receive **7 mg** lycopene or a placebo for two months. At the end of the trial, a **53%** improvement of vascular function (endothelium-dependent vasodilation) was observed in cardiovascular patients taking lycopene as compared to placebo. No changes were seen in healthy volunteers.²²

A scientific literature review of human clinical trials found that people consuming foods high in lycopene were protected from **lipid oxidation**, **DNA damage** in cells, and other damage.²³

Various studies demonstrate that lycopene and a lycopene-rich diet help protect against **cardiovascular disease**,^{4,24-29} and more.^{30,31}

WHAT YOU NEED TO KNOW



Cardioprotective Benefits of Lycopene

- **Lycopene** is a carotenoid pigment commonly found in tomatoes and watermelon. It is well known for its anti-cancer effects.
- Studies show that lycopene counters or *prevents* a wide range of **cardiovascular disease** risk factors, including atherosclerosis, oxidation of cholesterol, and endothelial dysfunction.
- These cardioprotective effects are believed to be largely attributable to lycopene's **anti-inflammatory** and **anti-oxidant** activity.
- Review studies found an association between higher lycopene intake or blood levels and a **14%-17%** lower risk of cardiovascular disease, **26%** lower risk of stroke, and **37%** lower risk of mortality.

How Much Should You Take?

The typical daily dose of lycopene to support optimal health is **15 mg**. Larger dosage of lycopene has been used in research.

Lycopene is considered **safe** and non-toxic, and consumption is usually without side effects.

No adverse effects have been reported in pregnant women consuming foods containing lycopene. However, anyone pregnant or breastfeeding should consult with a healthcare practitioner before starting to take lycopene.



A review of **21** studies found that consuming tomato products (a rich source of lycopene) or lycopene supplements was associated with:²⁵

- Reductions in **LDL** cholesterol,
- Improvements in **blood vessel** function, and
- Lower **systolic** (top number) blood pressure.

One meta-analysis of 14 human studies showed that lycopene intake was associated with a **17%** reduction in the risk of **cardiovascular disease**.²⁶

Another review and meta-analysis demonstrated that people with the highest serum concentration of **lycopene** had a:⁴

- **26%** lower risk of **stroke**,
- **14%** lower risk of **cardiovascular disease**, and
- **37%** lower risk of **mortality**.

In a trial in heart failure patients with a reduced ejection fraction, subjects received either **25 mg** of lycopene for eight weeks or placebo. After two months, both triglyceride levels and flow mediated dilation of arteries improved significantly compared to the control.³²

Together with its anti-cancer activity, these cardio-protective benefits make lycopene a powerful health-promoting nutrient.

Summary

Research shows that **lycopene** may inhibit many different cardiovascular disease risk factors, including atherosclerosis, endothelial dysfunction, and oxidation of cholesterol.

Scientists have found that greater lycopene intake or bodily levels lowers the risk of **cardiovascular disease** by **14%-17%**^{4,26} and reduces stroke risk by **26%**.⁴ ●

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^a 3-O-acetyl-11-keto-B-boswellic acid.

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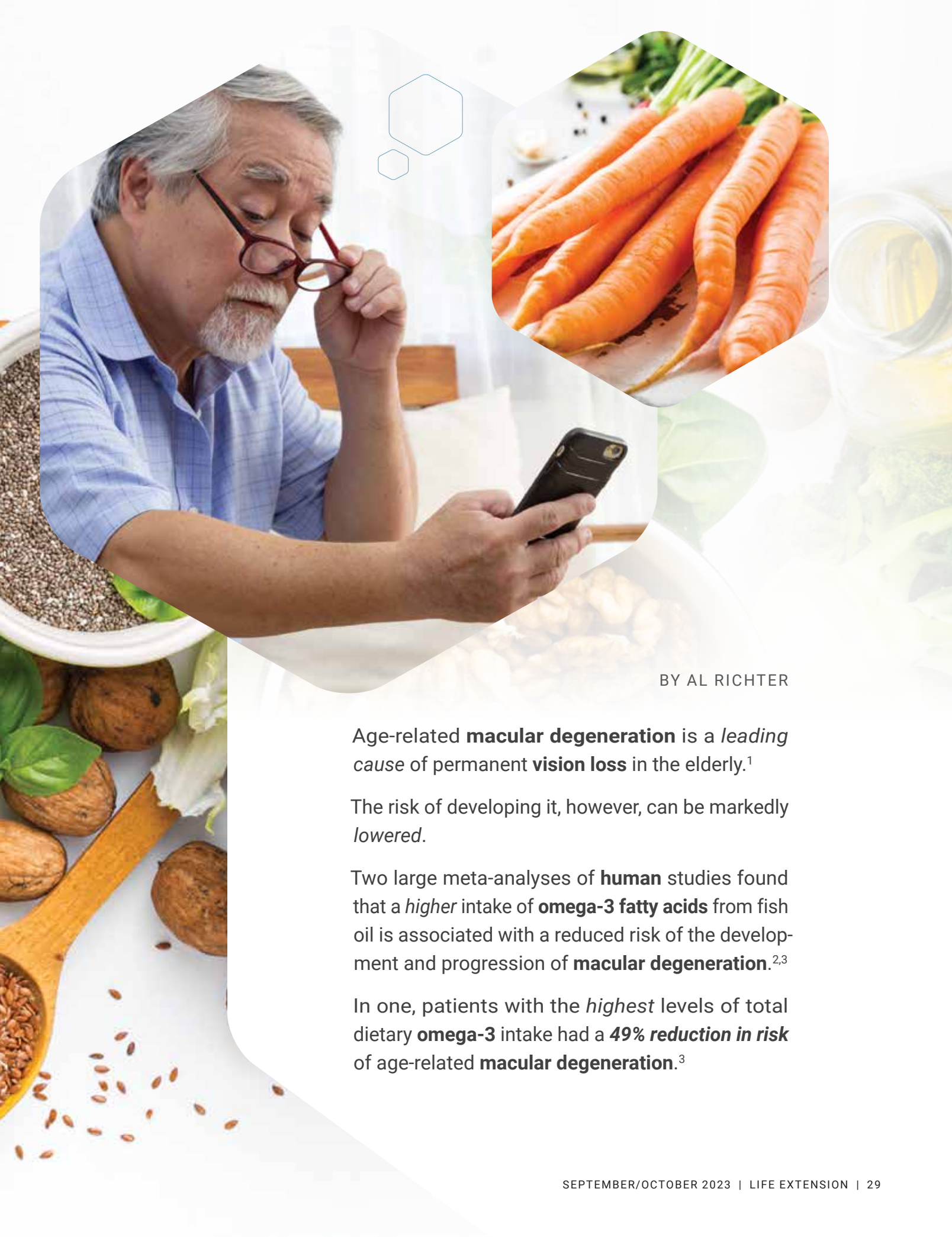
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OMEGA-3S and Macular Degeneration Risk





BY AL RICHTER

Age-related **macular degeneration** is a *leading* cause of permanent **vision loss** in the elderly.¹

The risk of developing it, however, can be markedly *lowered*.

Two large meta-analyses of **human** studies found that a *higher* intake of **omega-3 fatty acids** from fish oil is associated with a reduced risk of the development and progression of **macular degeneration**.^{2,3}

In one, patients with the *highest* levels of total dietary **omega-3** intake had a **49% reduction in risk** of age-related **macular degeneration**.³

The Two Types of Macular Degeneration

Age-related macular degeneration can be divided into two types:⁴

- **Dry** macular degeneration results when the cells of the macula grow thin and break down.
- **Wet** macular degeneration occurs when abnormal blood vessels beneath the retina grow and leak, damaging the macula.

The **wet form** tends to be much more severe and progressive. It is responsible for most of the cases that lead to **blindness**.

How Fish Oil Protects Vision

Age-related macular degeneration is a disease of the **retina**, the layer of nerve cells at the back of the eye that detects light and sends signals to the brain to enable vision.

The **macula** is the part of the retina responsible for sharp, straight-ahead vision.

When these cells are damaged or lost, **visual acuity** (sharpness) declines. Basic tasks like driving and reading become impossible, and **blindness** can eventually result.¹

Oxidative stress and inflammation drive the progression of macular degeneration.⁵

Omega-3 fatty acids from fish oil may protect eye health in a few ways.

For one, **omega-3s** are structural components of **cell membranes** in the maculae.⁶ They have **anti-inflammatory**,⁶ **neuroprotective**,^{7,8} and other effects that mitigate the processes that lead to macular degeneration.⁹⁻¹¹

The **retina** of the eye is an extension of the **optic nerve**, which extends directly from the brain.¹² Omega-3s help shield the retina from age-related degenerative changes that damage these cells.^{11,13,14}

Omega-3s and Macular Degeneration Risk

Several epidemiological studies have found that people with the *highest* intake of **omega-3 fatty acids** had the *lowest* risk of developing macular degeneration.^{10,15-20} Observational studies have shown that increased dietary intake of omega-3 slows the progression of the disease.²¹

In **2021** and **2022**, the results of two large meta-analyses investigating this topic were published.^{2,3}

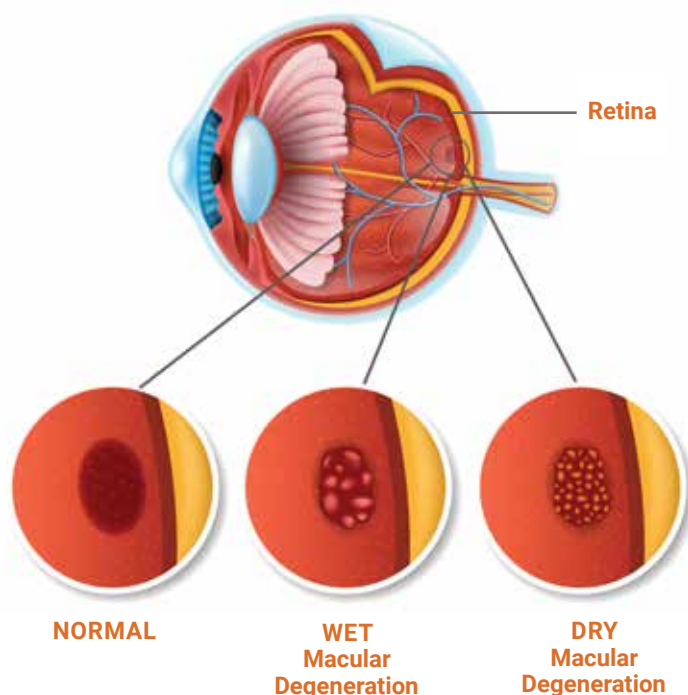
The first examined data from **21** separate human studies around the world from more than **190,000** individuals. It looked at whether intake of fish oil-derived **omega-3 fatty acids** was predictive of **age-related macular degeneration**.²

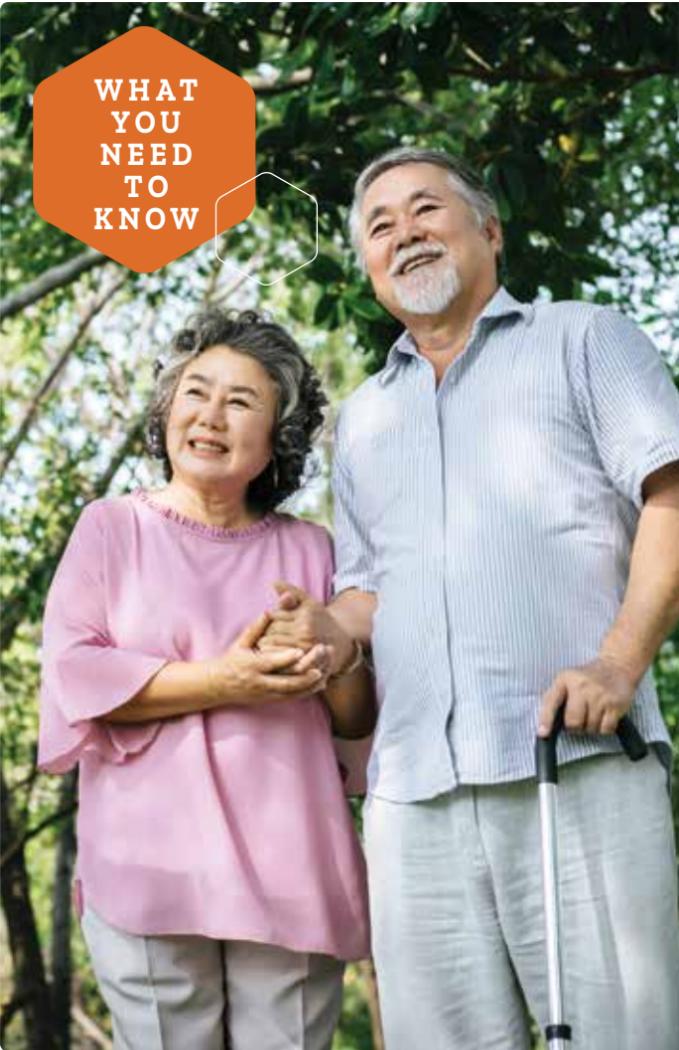
The results showed that those with the highest intake of fish oils had a **14% lower risk** of *early-stage* age-related macular degeneration and a **29% lower risk** of *late stage* (more severe) macular degeneration.²

Further analysis found that for each additional **1,000 mg** of **omega-3** intake per day, the risk for early macular degeneration was lowered by **6%**, and the risk for late macular degeneration was reduced by **22%**.²

The researchers also explored whether there was any difference between the two primary fatty acids found in fish oils, **DHA** and **EPA**. They found that *both* DHA and EPA, when analyzed alone, were protective in individuals with the highest intake.²

MACULAR DEGENERATION





WHAT
YOU
NEED
TO
KNOW

Omega-3s and 'Wet' AMD

The other meta-analysis, published in **2022**, specifically evaluated patients with **wet age-related macular degeneration**.³ It included data from five studies performed in Japan, the United States, and Europe, in over **12,000** patients.³

Even for this more aggressive type of **macular degeneration**, the analysis found that intake of fish oil-derived omega-3 fatty acids was significantly associated with a **reduced risk**.³

Patients with the highest levels of total dietary omega-3 intake had a remarkable **49% reduction in risk** for wet **macular degeneration**, compared to those with the lowest intake.³

Studies in the meta-analysis reported a significant correlation between **total intake** of omega-3 fatty acids and risk for this blinding form of macular degeneration.³



Protect Against Vision Loss

- Age-related **macular degeneration** is the most common cause of permanent vision loss in older individuals.
- Two large meta-analyses including hundreds of thousands of subjects show that *higher intake* of **omega-3 fatty acids** from fish oil is associated with *lower risk* for the development and progression of macular degeneration.
- Each of the primary fish oil omega-3s, **DHA** and **EPA**, protects against age-related macular degeneration.

This study also separated DHA and EPA to see if they differed in their protective ability. Both were found to be protective, with the highest consumption of **DHA** predicting a **39%** lower risk of wet macular degeneration and the highest consumption of **EPA** predicting a **32%** lower risk.³

These analyses provide evidence that **fish oil** can help protect against macular degeneration and promote eye health.

Summary

Age-related macular degeneration is the most common cause of vision loss in those over 50 years of age.

Two large meta-analyses confirm that a *higher* intake of **omega-3 fatty acids** from fish oil is protective against the development and progression of all forms of age-related macular degeneration. •

Carotenoids Also Protect the Retina

Omega-3 fatty acids aren't the only nutrients that have been found to be protective against eye disease.

Carotenoid pigments found in plants, such as **lutein**, **zeaxanthin**, and **meso-zeaxanthin** are known to concentrate in the outer membrane of the retina, where they provide structure support to the maculae and shield these delicate cells from harmful wavelengths of light that can damage the eye.

Population studies show that individuals with the *highest* concentration of carotenoids in the retina have *lower* rates of **macular degeneration**.^{22,23}

In one study, those with the highest intake of **lutein** and **zeaxanthin** had a **41% lower risk** of developing advanced macular degeneration.²⁴

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There are two types of AMD:⁴

Dry AMD:

- Most common (also called atrophic AMD),
- The macula gets thinner with age,
- Three stages: early, intermediate, and late,
- Usually progresses slowly over several years, and
- There are no medical treatment options available for late, dry AMD.

Wet AMD

- Less common (also called advanced neovascular AMD),
- It happens when abnormal blood vessels grow in the back of the eye and damage the macula,
- Usually causes faster vision loss. Any stage of dry AMD can turn into wet AMD—but wet AMD is always late stage, and
- Medical treatment options are available for wet AMD.

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References:

1. *Nutrients*. 2020 Nov 28;12(12).

2. Synapharm - Company supplied data. 2021.

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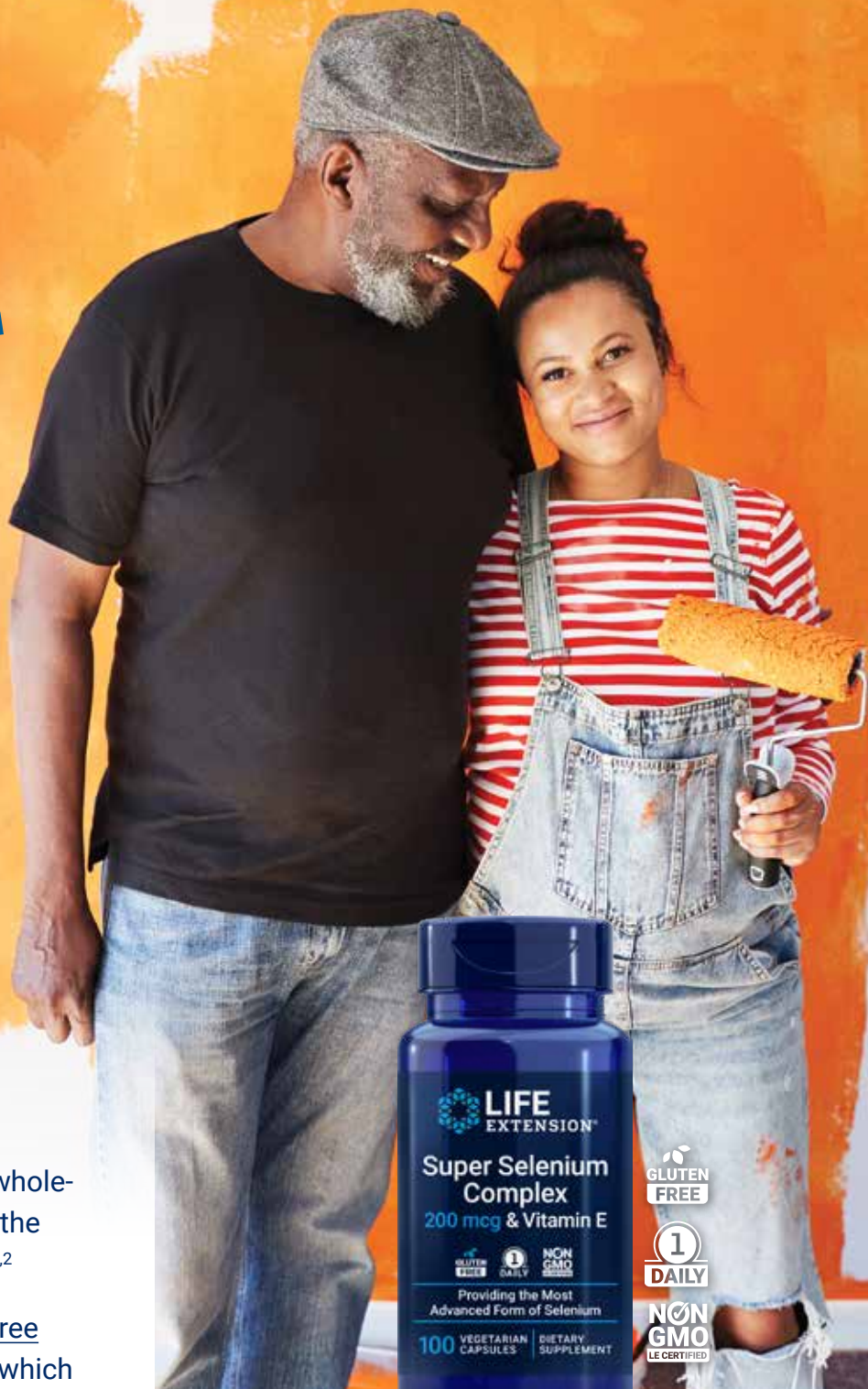
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References

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DEFEND Against the Challenges of Male Aging

BY MICHAEL DOWNEY

As men age, they face certain health challenges, including:¹

- **Erectile dysfunction** and low libido,
- Decreased **testosterone**, which lowers energy and virility, and
- **Prostate** disorders, which include **urination** problems and **enlarged prostate**.

Decades of research have identified several **plant** and **mineral** compounds, demonstrated to *help* alleviate specific symptoms.

In **human** studies, these ingredients:

- Improved erections in **61.5%** of participants,²
- Raised free testosterone levels by more than **48%**,³
- Restored a feeling of youthful well-being,³
- Improved a measure of strength by nearly **25%**,³ and
- Relieved urinary symptoms, including nighttime urination.^{4,5}

Taken together, these nutrients can safely support a broad range of **sexual**, **hormonal**, and **urinary** health issues that challenge aging men.



Male Sexual Health

Men's sexual health is about more than just erectile function. It also includes sexual desire, response, and satisfaction.

Erectile dysfunction drugs, such as Viagra®, Cialis®, and Levitra®, enhance penile **blood flow**. But the effects are only temporary, and side effects can include skin flushing, visual disturbances, dizziness, and headaches.⁶

Scientists have found an alternate way to improve overall sexual health: an extract of a ginger-like root called **Thai black ginger**. Its scientific name is *Kaempferia parviflora*.

It has long been used in South Asia as an aphrodisiac to enhance male sexual function.⁷⁻⁹ In preclinical studies, this plant extract gently supported increased blood flow to the **penis** while *also* enhancing **brain responses** to sexual stimuli.⁹⁻¹²

In a **human** trial, researchers enlisted healthy, sexually active men with self-reported mild **erectile dysfunction**. None were using medications for this condition.²

Each volunteer took **100 mg** of *Kaempferia parviflora* extract daily. The extract was standardized to **5%** of the active compound, **5,7-dimethoxyflavone (5,7-DMF)**.

Kaempferia parviflora

After 30 days, **improved erections** were reported by **61.5%** of participants.²

Unlike pharmaceuticals, *Kaempferia parviflora* also improved **intercourse satisfaction** and **response time** to erotic stimuli in a human study.¹³

Restoring Testosterone Levels

The hormone **testosterone** is critical to the male reproductive system. But testosterone levels also impact metabolism, energy, muscle strength and mass, mood, and more.¹⁴

Low levels of free testosterone become increasingly common as men age.¹⁵ Not only does this rob men of energy, virility, and a youthful feeling of general well-being, but it is also associated with age-related chronic conditions, including **heart disease** and **diabetes**.^{15,16}

In one meta-analysis, low testosterone was associated with an **increased risk of death** due to cardiovascular disease or any other cause.¹⁷

Scientists searched for years for ways to safely elevate total and free testosterone levels *without drugs*.

In cell studies, they found that extracts of **pomegranate** and **cacao seed** (from the same beans used to make cocoa and chocolate) each increased testosterone production.¹⁸





WHAT YOU NEED TO KNOW

Pomegranate

Cacao

Support for Sexual, Hormonal, and Urinary Health in Aging Men

In a clinical trial, **pomegranate** and **cacao seed** extracts were tested in men aged 36 to 55 years, who received either a blend of both extracts or a placebo.³

After eight weeks, levels of **free testosterone** (the biologically active form) had risen over **48%** in men receiving **400 mg** of the **pomegranate-cacao** blend.³

The group receiving the **pomegranate-cacao** **extracts** showed the following additional effects:³

- Improved overall **well-being**,
- **Stress** measures dropped **26%**, and
- Hand grip **strength** increased by almost **25%**.

This study also used the **Aging Males' Symptoms** scale, which includes:¹⁹

- Joint pain and muscle aches,
- Excessive sweating,
- Sleep problems and exhaustion,
- Anxiety and irritability,
- Depression and feeling burned out, and
- Decrease in libido and other sexual problems.

- As they age, men experience unique **sexual, hormonal, and prostate** challenges.
- An extract of *Kaempferia parviflora* improved erectile dysfunction and other aspects of sexual health in human studies.
- A combination of **pomegranate** and **cacao seed** extracts raised testosterone levels and improved mood and strength in clinical studies.
- **Saw palmetto** and its active component, **beta-sitosterol**, are clinically proven to support prostate health and hormonal metabolism, and to reduce urinary problems. Boron and rosemary provide additional support to prostate health.
- These and several other nutrients can help protect against a broad range of these problems of male aging.



These symptoms were reduced by **19%** in the **pomegranate-cacao** group.³

A similar study enlisted **younger** men, aged 21 to 35. Even at this age, pomegranate and cacao increased **free testosterone** by **25%**. Grip strength and upper-arm circumference also increased.²⁰

Luteolin is a flavonoid found in several herbs, fruits, and vegetables. Preclinical studies show that luteolin supports healthy **testosterone** levels and *reduces* its conversion into **estrogen**.²¹⁻²³

Scientists have combined **luteolin** with **pomegranate** and **cacao** extracts for even greater support for **testosterone** levels.

Prostate Protection

Aging men have an exceedingly high risk of **benign prostate enlargement**, which causes urination frequency and difficulties.¹

Clinical data show that extracts of the **saw palmetto** plant deliver prostate protection.²⁴⁻²⁶ Saw palmetto berries are rich in bioactive prostate-protecting compounds, including **beta-sitosterol**.²⁷

Saw palmetto benefits the prostate by:²⁷⁻²⁹

- *Inhibiting* enzymes that convert testosterone into dihydrotestosterone (DHT), a hormone that increases prostate growth, and

- Supporting healthy cell division and inflammatory response within the prostate. This reduces **lower urinary tract symptoms**, which include urinary incontinence, needing to urinate too often, or having trouble urinating.

Saw palmetto's effects may be *enhanced* when its active component, **beta-sitosterol**, is extracted and taken with it. It is a compound that is believed to reduce levels of **DHT**.³⁰

In an analysis of **18** clinical trials, saw palmetto relieved **lower urinary tract symptoms**, improved urine flow better than a placebo, and significantly reduced **nighttime urination**, known as **nocturia**.⁴

The highest-quality saw palmetto formulas include added **beta-sitosterol**,^{5,31,32} and *other* prostate-protecting nutrients.

- The mineral **boron** supports healthy hormonal metabolism,³³ and
- **Rosemary** extract has demonstrated anti-prostate cancer activity in preclinical studies.^{34,35}

Summary

Taking **pomegranate-cacao seed** and ***Kaempferia parviflora*** extracts together with other nutrients may provide a comprehensive defense against problems that come with male aging.

Aging men commonly experience **erectile dysfunction**, low libido, low **testosterone** levels, and prostate problems that include **urinary symptoms** and benign prostate hyperplasia.

Several plant extracts and compounds can safely help aging men support erectile, hormonal, and prostate health. •

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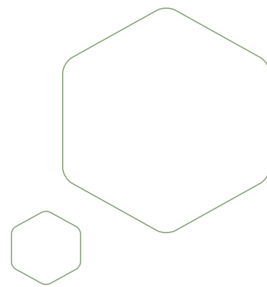


Reduce Stress While Sharpening **MENTAL FOCUS**


ASHWAGANDHA



SPEARMINT



BY MICHAEL DOWNEY



A **2022** survey found that **27%** of Americans reported being so **stressed** most days that they can't **function**.¹

Stress can leave us mentally lethargic and **foggy**.²

When stress becomes **chronic**, it can cause serious **long-term damage** and increase risk for heart disease, diabetes, depression, anxiety,³ and sleep problems.⁴

Searching for solutions, researchers identified a plant extract that decreased feelings of **stress** by **62%-79%**.⁵

Researchers also identified a *spearmint extract* that boosted mental **alertness** and **attention** in two randomized controlled human studies.^{6,7}

Together, these **plant extracts** may *lower stress* while *increasing mental focus*.

The Dangers of Stress

Chronic stress inflicts damage throughout the body.⁸

Untreated, stress can increase risk for:

- Heart disease and stroke,^{9,10}
- Obesity,¹¹
- Diabetes,¹²
- Osteoporosis,¹³
- Gastrointestinal complaints,¹⁰
- Mental health, including anxiety, depression,³ and insomnia,⁴ and
- Sexual dysfunction.¹⁴

One way the body responds to stress is by releasing **cortisol**, a hormone that keeps the stress response **activated** during chronic periods of stress.¹⁵

Research shows that an extract of the **ashwagandha** plant helps the body fight the negative effects of chronic stress.^{5,16}



Ashwagandha Lowers Cortisol

Ashwagandha has been used in traditional Indian medicine for over **3,000 years** to promote whole-body health.^{16,17}

Chronic stress results in higher levels of **cortisol**, a hormone that helps regulate stress response. Chronically elevated cortisol levels can impact overall quality of life.¹⁵

Cortisol is regulated by the hypothalamic-pituitary-adrenal (HPA) axis. Normal activation of the HPA axis is necessary for a healthy response to stress. However, chronic stimulation of the HPA axis can lead to an erratic stress response. This can result in constant levels of **cortisol** being released into the body contributing to weight gain, heart disease, impaired memory, and other health problems.¹⁸

Ashwagandha acts as an **adaptogen**, a substance helping the body deal with physical manifestations of stress, like the release of **cortisol**, while restoring balance.¹⁹

Research suggests that ashwagandha *inhibits* **cortisol** release.^{5,20,21}

Impressive Clinical Results

To validate these effects, scientists designed a randomized, placebo-controlled clinical trial.⁵

They divided **chronically stressed** individuals into four groups.

One group took a **placebo** while the other three took **ashwagandha** root and leaf extract in one of three doses:

- **125 mg** *once* daily,
- **125 mg** *twice* daily (total **250 mg**), or
- **250 mg** *twice* daily (total **500 mg**).

A commonly-used anxiety scale showed that overall **stress** was decreased by **71%** in the group that was given **125 mg** of extract twice daily (**250 mg** total) for 60 days.⁵

After **60 days**, the **125 mg** twice daily (**250 mg** total) group had significantly decreased:⁵

- Serum **cortisol**,
- Serum **C-reactive protein**, a marker of inflammation,
- Pulse rate, and
- Blood pressure.



Lower Stress, Boost Alertness

- **Stress** can have devastating impacts on emotional and physical health.
- In a clinical trial, **ashwagandha** extract lowered stress by **71%** and reduced levels of the stress hormone cortisol by **24.2%**.
- Stress can also lead to feelings of mental **fogginess**.
- A patented **spearmint** extract has been clinically shown to *improve* attention, alertness, and reaction times.
- Taken together, these two plant extracts may lower stress and boost mental focus.

All participants taking **ashwagandha**, compared to **placebo**, reported reduced feelings of **stress** and **anxiety** and significant improvements in:⁵

- Fatigue,
- Appetite loss,
- Feelings of “impending doom,”
- Inability to concentrate,
- Irritability,
- Forgetfulness, and
- Sleeplessness.

In the **125 mg** twice daily (**250 mg** total) group, serum **cortisol** decreased by **24.2%**.

Boosting Mental Alertness

Stress can make people feel mentally muddled. Often times, treatments for stress reduce alertness and induce drowsiness.²²

Researchers turned to **spearmint**, which has been used traditionally to improve **alertness** and **memory**.²³

They found a spearmint extract that uses a water process extraction method to preserve the high polyphenol content in this herb.

This polyphenol-rich **spearmint extract**²³ contains a minimum of **14.5% rosmarinic acid** and a combination of **24% total polyphenols** that was shown to:

- Increase **alertness** and vigor,²³ and
- Improve working and spatial working memory, two aspects of **short-term memory**.²³

In this human study, subjects with age-associated memory impairment who took **900 mg** of this specific **spearmint** extract for **90 days** had, compared to a placebo, a roughly **15%** improvement in working memory and a **9%** improvement in spatial working memory. This suggests **enhanced mental alertness**.²³

In an open-label pilot trial, healthy adults taking **900 mg** of **spearmint** significantly improved their attention and concentration just **2.25 hours** after a single dose, demonstrating *swift* cognitive benefits.²⁴

Clinically Validating Spearmint

To elaborate on these findings, scientists conducted two randomized, placebo-controlled trials.^{6,7}

In one study, healthy, active individuals aged 18-50 years took **900 mg** of **spearmint** extract or a placebo daily.

Volunteers were tested using a high-tech, 360-degree platform surrounded by towers with multiple lights. Subjects had to lunge to make hand or foot contact with targets on the towers as software counted the “hits.”⁷

This test measures reaction times when sudden changes in direction or speed are needed. It also measures choice reaction times—an indicator of the cognitive, more than the physical, aspects of reactive agility.

Those taking the **spearmint** extract had significant improvements in “hits” after just **30 days**, showing **enhanced mental agility**.⁷

Improvements in Attention

Another placebo-controlled trial enlisted healthy, active volunteers aged 18-50 who took **900 mg** of **spearmint** extract or a placebo daily.⁶

This time, cognition was assessed by computerized **cognitive tests**.

After 30 days, the **spearmint** group had an **8.8%** increase in **sustained attention** as compared to placebo. After 90 days, **11%** improvement was reported.⁶

No significant changes in sleep, mood, or quality of life were found, demonstrating that this spearmint extract does not disrupt these aspects of life.⁶

Combining this **spearmint** extract with **ashwagandha** may help reduce stress and increase alertness, with no potential side effects.

Summary

Stress reduces quality of life and increases risk of chronic disease.

In clinical trials, **ashwagandha** lowered feelings of stress and reduced cortisol levels.

Mental **fogginess**, which may be stress-related, can impair cognition.

A water-processed **spearmint** extract improved reaction time, alertness, and sustained attention in clinical studies. ●

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Vitamin B5 (D-calcium pantothenate)	50 mg
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1. Akay Internal Study. Liposomal hydrogel vitamin C pharmacokinetics. Data on file. 2021.

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1. *Sleep Med Rev.* 2005 Feb;9(1):41-50. 2. *Lancet.* 1995 Aug 26;346(8974):541-4. 3. *Neurol Res.* 2017 Jun;39(6):559-65.

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Impact of
NAD⁺
on HEALTHY
LONGEVITY



BY STEVEN LAWRENCE

NAD⁺ is found in every *living cell*, from bacteria to humans.¹

It is required for many reactions that provide **energy** and for essential processes such as repairing **DNA**.²⁻⁴

The problem is that levels of NAD⁺ decline as we age.⁵

A nutrient called **nicotinamide riboside** has been shown to boost cellular NAD⁺.

Preclinical studies show that this could support brain,⁶⁻⁸ heart,⁸ and metabolic health.⁸⁻¹⁰

In organisms ranging from yeast to worms to mice, replenishing **NAD⁺** with **nicotinamide riboside** has been found to extend lifespan.¹¹⁻¹⁴

In one study, elderly mice given **nicotinamide riboside** experienced a **5% increase** in lifespan.¹⁴

For an average American, a **5% lifespan extension** might mean **four additional years** of life.¹⁵

A review published in **2022** describe the systemic effects of **NAD⁺** metabolism on cellular aging processes.²

NAD⁺ and Cellular Function

NAD⁺ (nicotinamide adenine dinucleotide) is a coenzyme that is essential to sustaining healthy life.¹⁶

It is critical for the basic metabolism and energy supply of all cells. It is required for the normal function of over **300** proteins, including many vitally important ones.³

For example, **sirtuins** are a group of proteins that regulate cellular repair and defenses and help maintain cellular health.

Low **sirtuin activity** is tied to **accelerated aging** and risk for age-related issues. Preclinical studies have shown that *boosting* sirtuin function rejuvenates cells, repairs damage to DNA, and much more.^{5,16,17}

Sirtuins **require NAD⁺** to function.¹⁶ For this reason, cells need an ongoing supply of NAD⁺ at all times to **function** optimally.

Nicotinamide Riboside Raises NAD⁺ Levels

NAD⁺ production drops significantly with advancing age.^{5,18}

A study using human skin samples from people across a wide age range found that **NAD⁺** levels had declined markedly in people **aged 30-50**, compared to infants from birth to the age of one year.

In the study subjects over **age 50**, NAD⁺ levels in skin were reduced by more than **87%** compared to the infants'.¹⁹

This decline in NAD⁺ leads to deteriorating cellular health. **Sirtuins** and other cell protectors that rely on NAD⁺ cannot **function** properly with insufficient **NAD⁺** and cannot offer the defenses that sirtuins provide in youth.¹⁶

There's a way to **boost NAD⁺** back to healthier levels.

Scientists discovered that a form of vitamin B3 called **nicotinamide riboside** acts as a **NAD⁺ precursor** when taken orally.^{11,13,14}

It is readily taken up by cells, which use it to produce **more NAD⁺** and improve body levels of NAD⁺.^{20,21}

In humans, oral supplementation of **nicotinamide riboside 250 mg** a day titrated up to **1,000 mg** twice daily was found to raise NAD⁺ levels by **2- to 7-fold**.²²

Benefits of Boosting NAD⁺

Ample NAD⁺ levels can contribute to many different areas of health, as suggested by preclinical studies, including:

- **Genetic Health.** Damage to **DNA** can cause rapid aging and chronic diseases. By supporting sirtuins and other enzymes, NAD⁺ helps bolster cellular defenses to prevent this damage and even **repair existing DNA damage**. It also protects the function of **telomeres**, caps at the ends of chromosomes that are associated with longer life.^{3,8,16,17,23}

NAD⁺ and Resveratrol Work Together

Resveratrol is a polyphenol found in red wine and various plants. It has well-documented benefits that help prevent age-related disease and slow the aging process.³⁸

One of the key ways resveratrol works is by **activating** life-extending cellular **sirtuins**.³⁹⁻⁴²

Because sirtuins require **NAD⁺** to function, resveratrol's benefits cannot be maximized without *also* ensuring ample NAD⁺ levels.

Taken together, **resveratrol** and **nicotinamide riboside** can boost each other's benefits.





WHAT YOU NEED TO KNOW

Health Benefits of Nicotinamide Riboside

- **Energy Metabolism.** NAD⁺ plays a central role in breaking down nutrients to supply energy to cells. Without it, cells suffer energy failure and cannot survive.²⁻⁴
- **Cellular Protection.** Oxidative stress and chronic inflammation have both been tied to virtually every age-related disease. Maintaining adequate NAD⁺ combats both, inhibiting inflammation while aiding cellular antioxidant defenses.^{17,24}
- **Stem Cell Health.** Healthy stem cells help maintain youthful tissue function, replacing old, damaged cells with healthy new ones. In animal model studies, both NAD⁺ and sirtuins have been found to improve stem cell health.^{14,25-27}
- Every living cell relies on **NAD⁺** for hundreds of cellular processes, including energy production, DNA repair, and sirtuin activity.
- NAD⁺ levels drop with age. Boosting NAD⁺ has been shown to protect cellular health, prevent age-related chronic disease, and extend lifespan in model organisms.
- **Nicotinamide riboside** is a NAD⁺ precursor that can be taken orally and raises NAD⁺ levels in humans and animal models.
- By boosting NAD⁺ levels, nicotinamide riboside has demonstrated the ability in preclinical studies to support **longevity**, improve organ function, and reduce risk for age-related chronic disease.



Nicotinamide Riboside Promotes Longevity

Scientists have consistently found in preclinical studies that NAD⁺-boosting **nicotinamide riboside** is capable of improving overall health, including the brain,^{28,29} heart,³⁰⁻³² and blood vessels.³³

For example, in rodent studies, **nicotinamide riboside**.^{28,31}

- Reverses cognitive deficits and improves memory in models of **Alzheimer's disease**,²⁸
- Helps prevent the development of **heart failure**,³¹ and
- Improves metabolism and helps prevent **weight gain**.²⁸

A range of preclinical models have demonstrated that increasing nicotinamide riboside NAD⁺ levels can **extend lifespan**.¹¹⁻¹⁴

Yeast grown with nicotinamide riboside have an extended lifespan.¹¹ In worms, lifespan is extended at least **10%**.¹³

Giving **nicotinamide riboside** to mice that were the human equivalent of **70 years old**¹⁴ extended their lives by about **5%**.

A **5%** extended lifespan in a person might mean gaining nearly **four additional years** of life based on today's average U.S. human life expectancy of roughly **76 years**.¹⁵

Clinical Trials

Impressed by animal studies showing benefits for boosting NAD⁺, scientists began conducting **clinical studies** with **nicotinamide riboside** to see if it translates to humans. Here is a sampling of human trials:

- A double blinded phase 1 clinical trial of newly diagnosed Parkinson's disease patients received **1,000 mg** or placebo for 30 days. Participants receiving nicotinamide riboside showed an increase in brain NAD⁺ levels and mild improvement of clinical symptoms.³⁴
- In a double-blind, crossover trial, aged men received **1,000 mg** nicotinamide riboside per day for 21 days. After 21 days, elevated levels of NAD⁺ in muscles of participants in the intervention group were seen. Nicotinamide riboside also reduced levels of circulating inflammatory cytokines.³⁵

- In a clinical trial of 30 participants with clinically stable heart failure and reduced ejection fraction, a **1,000 mg** twice daily dose of nicotinamide riboside was well tolerated and resulted in boosting blood levels of NAD⁺ to approximately double the level at baseline and reduced white blood cell expression of markers of systemic inflammation.³⁶
- In a double blind, crossover study, 12 young and 12 aged individuals were randomized to receive nicotinamide riboside or placebo. Two hours before and after the supplementation, blood and urine samples were collected. At that time muscle fatigue and strength were assessed. Nicotinamide riboside supplementation showed increased NAD⁺ levels. Interestingly, supplementation improved physical performance *only* in **elderly** subjects.³⁷ The conclusion from this finding indicates that declining NAD⁺ levels due to age can be replenished with nicotinamide riboside supplementation, resulting in improved exercise performance.

Summary

NAD⁺ is a crucial compound in every living cell.

It is involved in the basic energy supply all cells need to thrive. It is also required for cellular regulators like **sirtuins** to help protect against rapid aging.

NAD⁺ levels drop dramatically with age, contributing to accelerated aging.

Nicotinamide riboside is a NAD⁺ precursor. Taken orally, it quickly boosts cellular NAD⁺ levels.

In preclinical studies, nicotinamide riboside is tied to improved organ function and **longer life**. •



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food stores everywhere.

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Essential Youth with L-Ergothioneine

*The 'Longevity'
Amino Acid*



Item #02431

30 vegetarian capsules



This product is available
at fine health food stores everywhere.

L-ergothioneine is an amino acid found in **mushrooms**.

Cell-based studies suggest that **L-ergothioneine** may support healthy longevity by:

- Protecting **mitochondrial DNA** function¹
- Delaying **telomere** shortening²
- Supporting **DNA function** in cells subjected to UV exposure³

One daily capsule of **Essential Youth** provides **5 mg** of **L-ergothioneine**.

One daily capsule provides as much **L-ergothioneine** as 2 to 5 cups of white button mushrooms.^{4,5}

References

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GUMMY SCIENCE™



Clinically studied dosages!

Life Extension offers Gummy Science™: science-based gummies that fight belly fat, protect eyes, smooth skin, and help you sleep.

Each Gummy Science™ formula is gluten free, non-GMO and **sugar-free*** —so get sweet nutritional benefits, with none of the guilt.

These products are available at fine health food stores everywhere.

*Not a low-calorie food. Gummy Science™ Melatonin (item #02503): For occasional sleeplessness.

Gummy Science™ Mediterranean Weight Management (item #02506):

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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Body-Wide Benefits of TART CHERRY

BY PATRICIA WEISER, PHARMD



Studies have found **tart cherries** not only help athletes with exercise endurance¹ but also help with muscle recovery after exercise.² Over the last few years, researchers have discovered many other potential benefits.

Also known as sour cherries, **tart cherries** are rich in **antioxidant** and **anti-inflammatory** compounds, including polyphenols, and anthocyanins.³⁻⁵ These may protect against diseases and promote health.

Clinical and preclinical research has shown that tart cherry extract can help reduce inflammation, preserve bone density, and boost cognition. There is even preclinical research indicating it could prolong lifespan.

Reducing Inflammation

Chronic inflammation drives the development of many diseases of aging, including type II diabetes, arthritis, cancer, and heart disease.⁶

Tart cherry extract has been shown in both preclinical and clinical studies to lower multiple biomarkers of inflammation, most notably C-reactive protein (CRP).^{3,7}

A systematic review and meta-analysis of 10 randomized controlled trials found that consuming tart cherry juice or powder led to significant decreases in the inflammatory biomarker **C-reactive protein**.⁷

One of the studies in the analysis, a trial in older adults, found that consuming **480 mL of tart cherry juice** daily for 12 weeks reduced C-reactive protein levels by **25%**, compared to those who did not consume tart cherry.⁸

Protecting Bone Health

Osteoporosis, a disease characterized by bone loss and increased fracture risk, is especially common among older women.⁹

Bone loss occurs when **resorption** (loss of bone tissue) occurs at a faster pace than bone **formation**. This imbalance can result from changes that occur during aging, such as hormone shifts in **menopause** and increased **inflammation**.⁹

A 90-day randomized trial in women aged 65-80 found that consuming about **500 mL** of tart cherry juice per day resulted in a significant decrease in a biomarker of bone resorption compared to baseline.¹⁰

A preclinical cell-based study confirmed that tart cherry extract exhibits properties that would inhibit bone breakdown.¹¹

Improved Cognition

Two separate randomized controlled trials have shown that supplementation with tart cherry juice improved cognitive performance.^{12,13}

In one controlled clinical trial in middle-aged adults, those taking **1-ounce** tart cherry concentrate twice daily for three months had

significant improvements in accuracy on tests of **cognitive function** compared to those who took a placebo. Supplementation with the tart cherry extract also resulted in greater alertness and less mental fatigue.¹²

Another randomized controlled trial in healthy *older* adults with normal cognitive function found that those assigned to consume 2.3 oz of tart cherry juice concentrate daily for 12 weeks (mixed in enough water to make 2 cups of liquid) improved on tests of **cognitive abilities**, including memory, task speed, and overall performance.¹³

There is even preclinical evidence to suggest that tart cherry could potentially alter the course of **Alzheimer's disease**. In a mouse model of Alzheimer's, scientists supplied a combination of **tart cherry extract** along with omega-3 fatty acids and monounsaturated fat (similar to what is in olive oil). This treatment led to reduced memory deficits, which were associated with decreased brain cell loss and reduced deposits of **beta-amyloid**, a protein that accumulates in the brains of those with Alzheimer's disease.¹⁴

Promoting Longevity

Oxidative stress and dysfunction of **mitochondria** (the “powerhouses” of cells) are both linked to aging.¹⁵ In a study in roundworms, tart cherry extract *enhanced* mitochondrial function and *reduced* oxidative stress.

In this study, roundworms given **tart cherry extract** had a **longer average lifespan** than untreated worms,⁵ suggesting potential longevity benefits of tart cherry extract.





Summary

Tart cherry extract has been shown to reduce inflammation and oxidative stress, which translates to health benefits throughout the body.

Recent research shows that tart cherry can reduce inflammation, protect against bone breakdown, improve cognitive function, and may promote longevity. •

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BREATHE EASY

Lung health is adversely impacted by aging and environmental exposure.

Healthy Lungs contains **four** plant-derived compounds to support **optimal lung** function:¹

- ***Boswellia serrata***^{1,2}
- **Indian Bael fruit**^{1,2}
- **Saffron**^{3,4}
- **Andrographolide**¹

Studies have shown these nutrients can:

- Support breathing capacity
- Help protect lungs from environmental factors¹
- Promote lung function²⁻⁴



Item #02512

30 vegetarian capsules

This product is available at fine health food stores everywhere.

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TAP THE POWER OF N-ACETYL-L-CYSTEINE

TO SUPPORT IMMUNE FUNCTION

N-Acetyl-L-Cysteine (NAC) has been shown to support healthy immune response and respiratory function.

NAC supports healthy levels of *glutathione*, helps promote a healthy **inflammatory response** and protects cells from **oxidative stress**.

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A Healthy Kick for Heart & Bones

Just one daily softgel of
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Vitamin K1	1,500 mcg
Vitamin K2 (MK-4)	1,000 mcg
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A full-page photograph of an older couple jogging on a paved path in a park. The woman on the left is wearing a white tank top and black leggings, while the man on the right is wearing a dark blue t-shirt and grey shorts. They are both smiling and looking towards each other. The background is filled with lush green trees. In the bottom left corner, there is a semi-transparent red overlay featuring a detailed illustration of numerous red blood cells.

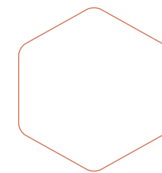
Protect Against Occlusive Arterial Plaque



PINE BARK



CENTELLA
ASIATICA



BY MICHAEL DOWNEY

Atherosclerosis can lead to heart attacks and strokes...the top *causes of death* worldwide.¹

Two **plant extracts** have been shown to inhibit the development and worsening of **atherosclerosis** and to reduce **unstable** plaque, the most dangerous form.

Placebo-controlled clinical studies reveal that when these extracts are combined, they work better than separately.

In one study, participants taking the two extracts experienced **95% less progression** of plaque, compared to a control group receiving standard care.²

Another study showed the extract blend led to an **82% reduction** in major cardiovascular events, including **heart attack** and **stroke**.³

Arterial Plaque

Atherosclerosis is a chronic, inflammatory vascular disease that involves plaque buildup on the inner walls of arteries, narrowing the opening and making the arteries stiff and inflexible.⁴

These plaques can be unstable and rupture.⁵

Atherosclerosis initiates and progresses for *decades* before symptoms develop.^{4,5} Conventional **risk factors** include:⁶

- Aging,
- Family history of cardiovascular disease,
- Abnormal lipid levels, including elevated LDL (“bad”) cholesterol, high triglycerides, and low HDL (“good”) cholesterol,
- High blood pressure,
- Elevated blood sugar,
- Obesity and sedentary lifestyle,
- Poor diet, and
- Smoking.

The process of plaque formation involves inflammation, necrosis, fibrosis, and calcification.⁷

When atherosclerotic plaques rupture, or when a blood clot (thrombus) forms on jagged plaque, the result can be catastrophic arterial occlusions. These blockages, either partial or complete, can cause a **heart attack** or an ischemic **stroke**.⁸

Two plant extracts have been shown to *inhibit* atherosclerosis: ***Centella asiatica*** and **French maritime pine bark**.

Centella Asiatica

Centella asiatica (also known as **gotu kola**) is a plant native to Asia. It has long been used in traditional medicine for various disorders and wound treatment.⁹

Centella contains compounds called **triterpenes**, which are believed to inhibit plaque by their anti-inflammatory activity.¹⁰ Triterpenes also stabilize more dangerous **soft plaque** by improving the synthesis of **collagen**,¹⁰⁻¹³ which holds soft plaque in place.^{11,14,15}

Centella also reduces the adhesion of **monocytes**, immune cells that promote atherosclerosis.^{15,16}

In a clinical study of patients with soft plaque, taking **60 mg** of *Centella asiatica* extract three times daily for 12 months resulted in no increase in plaque size, compared to a **23% increase** in a **placebo** group.¹¹

The extract also produced a **63% more firm** plaque, which is associated with less rupture risk.¹¹

Pine Bark

French maritime pine bark contains compounds known as **procyanidins** and **phenolic acids**.^{17,18}

In multiple clinical studies, these compounds have been shown to slow atherosclerosis progression,¹⁸ an effect that may result, in part, from reduced expression of inflammatory signaling molecules that contribute to plaque formation.^{19,20}

In a clinical study of patients with coronary artery disease, those taking **200 mg** of **French maritime pine bark** extract daily for eight weeks had increased **flow-mediated dilation** (a measure of beneficial arterial widening) by **32%**. There were *no* significant changes in the **placebo** group.²¹





Reduce Heart Attack and Stroke Risk

- **Atherosclerosis**, plaque in the arteries, frequently leads to strokes or heart attacks. It is the leading cause of death worldwide.

■ Extracts of **French maritime pine bark** and ***Centella asiatica*** safely target this dangerous condition.

- Clinical studies show that, taken *together*, these extracts slow, and even **reverse** plaque accumulation, while boosting the stability of dangerous soft plaque to help prevent a deadly rupture.

- In a clinical study, this dual extract blend led to **7.4 times** lower progression of the disease.

- Scientists gave the same dosages to a group of patients with **class V** plaques (more than **50%** blockage of at least one major artery). After 42 months, the percentage of subjects whose plaques progressed to **class VI**, which involves **symptoms** such as numbness, tingling, or chest pain, was:²²

- The extract blend led to **7.4 times lower** progression of the disease over the study period of 42 months. In addition, cardiovascular events (hospitalization, chest pain, heart attack, or stroke) occurred in **4.4%** of the combination extract group, as compared to **16%** in the standard care group.²²

Additional Clinical Validation

In two more clinical trials, scientists used a combination of **150 mg of French maritime pine bark** extract and **450 mg of *Centella asiatica*** extract daily, along with **100 mg of aspirin**, which is often recommended for those with atherosclerosis.^{3,23}

In one of these studies, patients with atherosclerotic plaque were monitored for three years. All subjects received standard diet, lifestyle, and exercise counseling. A control group received no additional treatment, a second group was given *only aspirin*, and a third received **aspirin plus the dual-extract blend**.³

Plaque progression was observed in **5.3%** of those in the **dual-extract** group, but it was found in over 20% of the two groups that did not receive the extracts. Major **cardiovascular events** (such as heart attack or stroke requiring hospitalization), occurred in:³

- **22%** of the control group, but
- Less than **4%** of those taking the extracts and aspirin.

Another study investigated **calcification** of coronary arteries. Participants were randomized into three groups to receive either:

- Standard counseling and **100 mg** of aspirin daily,
- Standard counseling with **150 mg** of French pine bark extract, or
- Standard counseling with **150 mg** of French pine bark and **450 mg** of *Centella* extract daily.²³



After 12 months, the number of calcifications:²³

- **Increased** by **35%** in those receiving counseling and aspirin, but
- **Decreased** by **10%** in those taking **150 mg** of French pine bark and **450 mg** of *Centella* extract.

Enhanced Plaque Stability

Some plaques are worse than others.

In a six-month clinical study of patients with **atherosclerotic plaques**, mild hypertension, and elevated cholesterol, subjects were divided into a lifestyle counseling group, a group that received the two herbal extracts, and a group that received both. Ultrasound imaging was used to assess plaque stability.²⁴

In patients receiving only lifestyle counseling, plaque stability did not change significantly over six months.

But in patients receiving **150 mg** of **French maritime pine bark** extract and **450 mg** of ***Centella asiatica*** extract daily, the plaque stability index **doubled**. This means their plaques were *less* likely to rupture and induce catastrophic clotting.²⁴

Plaque size and number also **decreased** significantly in treated individuals.

Summary

Plaque accumulation in arteries is the signature characteristic of atherosclerosis, the underlying cause of most heart attacks and strokes.

Scientists have identified **two** plant extracts that target atherosclerosis and its consequences.

A blend of **French maritime pine bark** and ***Centella asiatica*** extracts has been shown to slow plaque growth, while boosting stability of deadly soft plaque, to help prevent a rupture.

This dual extract blend reduced progression of arterial plaque by as much as **95%** in a clinical study.

When used together, these extracts have been shown to help slow the development and progression of atherosclerosis, when combined with therapeutic lifestyle modification. •



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



Item #02121

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Just one daily capsule of **HOMOCYSTEINE RESIST** provides:

5-MTHF (activated folate)	8,500 mcg ^o
Methylcobalamin (activated vitamin B12)	1,000 mcg
Pyridoxal 5'-phosphate (activated vitamin B6)	100 mg
Riboflavin (vitamin B2)	25 mg

^oDEF (Dietary Folate Equivalents)

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Comprehensive EYE HEALTH Formula

MacuGuard® Ocular Support provides:

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

These products are available at fine health food stores everywhere.



MacuGuard® Ocular Support
with Saffron & Astaxanthin

Item #01993

60 softgels



MacuGuard® Ocular Support
with Saffron

Item #01992

60 softgels



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(Each bottle lasts for **two months**.)

MacuGuard® Ocular Support is available with or without astaxanthin.

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"An essential part of
my supplement plan."

Larry

VERIFIED CUSTOMER REVIEW



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Boost the Body's Defenses

Lycopene, extracted from tomatoes,
is a potent and powerful antioxidant.

Lycopene can help strengthen the body's
defense systems on a cellular level.

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Cistanche Promotes Healthy Aging

BY LAURIE MATHENA



Cistanche is a medicinal herb that has been used in traditional Chinese medicine to support many different functions, including **brain health**.¹⁻³

More recently, scientists have identified *Cistanche*'s potential for fighting cancer, reversing bone loss, and even *boosting lifespan*.

Together, this research adds to the growing body of evidence that oral intake of *Cistanche* could promote **healthier aging**.⁴⁻⁶

Optimizing Immune Function

Maintaining healthy immune function is one of the best ways to enhance health and longevity.⁷

Immune function begins to malfunction as we age. Called *immune senescence*, this dysfunction increases the risk of **infections** and **cancer**, while also reducing the effectiveness of **vaccines**.⁸

One prime cause of the immune dysfunction suffered by the elderly is a marked *decrease* in **naïve T cells**⁹⁻¹¹ and functional **natural killer cells**,^{11,12} along with an increase in pro-inflammatory cytokines.¹¹

In human cell studies, and also in animal studies, *Cistanche* has been shown to target these aspects of **immune senescence**.^{4,13}

- It *increased naïve T cells* and **natural killer (NK) cells**, and
- *Decreased* the pro-inflammatory cytokine **interleukin 6**.

An animal study demonstrated that injection of a *Cistanche* extract along with a seasonal influenza vaccine helped improve the **immune response** to the vaccine. The addition of the *Cistanche* extract resulted in more **rapid antibody production** and more effective T-cell response to the flu antigens.¹⁴

This indicates that *Cistanche* extract has the potential to increase the immune response to an influenza vaccine.

Finally, there's evidence from pre-clinical studies that *Cistanche* may have anti-inflammatory activity¹⁵ that could support proper immune system function.^{6,13}

Potent Cognitive Protection

While *Cistanche* has been studied in multiple preclinical settings for its potential immune health benefits, a **human** study revealed that it could be an unsung hero for *brain* health as well.

In a placebo-controlled pilot study, 26 men and women with moderate **Alzheimer's disease** were randomized to three groups. Two treatment groups received either *Cistanche* extract capsules or Donepezil (prescription medication to improve cognition in Alzheimer's patients), the third group received a placebo. The *Cistanche* treatment group took **300 mg** of *Cistanche* **three**

times daily for nearly a year.¹⁶

Compared to the untreated group, those taking *Cistanche* had significantly lower levels of certain **inflammatory factors** in the fluid surrounding their brain and spinal cord.

Cistanche also appeared to protect the brain from *shrinkage*.

In the untreated subjects, **hippocampus** volume shrank by **4.2%**. This is concerning, since this area of the brain plays a key role in **cognition, memory, and learning**.

The *Cistanche* group, on the other hand, had no change in the volume of their hippocampus.

Consistent with these findings, the *Cistanche* group performed significantly better on **cognitive tests** at the end of the study.¹⁶

These benefits could be due in part to a beneficial polyphenol in *Cistanche* called **echinacoside**.^{13,17} In a rat model of Alzheimer's, **echinacoside** and other bioactive components of *Cistanche* were found to pass through the blood-brain barrier.²

That is where *Cistanche's* *anti-inflammatory* activity helps protect against the damaging effects of **neuroinflammation**.¹⁸

Cancer-Fighting Potential

Preclinical research suggests *Cistanche* has activity against numerous types of cancer. Studies have demonstrated that *Cistanche*:

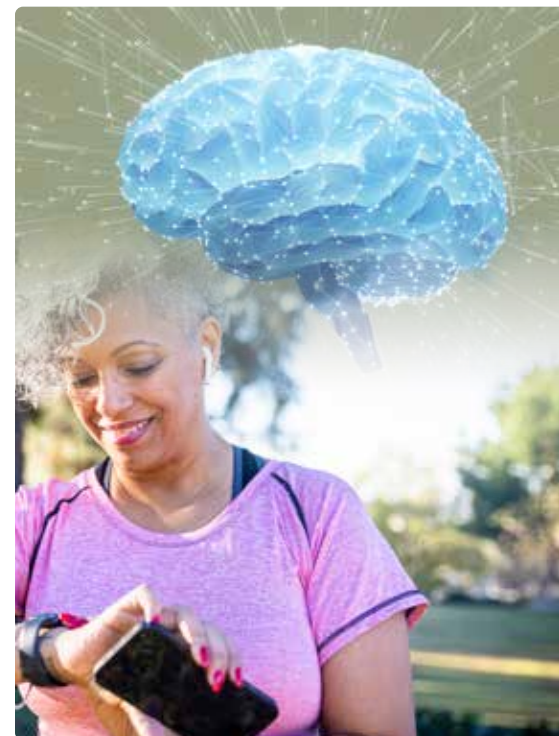
- Inhibits growth of **breast cancer** cells,¹⁹
- Inhibits growth of **colorectal cancer** cells,¹³ and
- Induces apoptosis and cell cycle arrest in **esophageal cancer** cells.²⁰

In **hepatocellular carcinoma**, the most common type of liver cancer, a mouse study showed that *Cistanche* increased levels of cancer-fighting CD8+ T cells, inhibited the growth of **liver cancer** cells, and greatly improved the rodents' **survival rate**.²¹ Another rat study showed *Cistanche* inhibited hepatocellular carcinoma cell growth in a dose-dependent manner.²²

In an impressive lab study, *Cistanche* inhibited the growth of colon cancer cells by **60%** *within just 72 hours* of treatment. This included primary and metastatic colon cancer cells.²³

Longevity Effects

Cistanche has been shown to significantly boost **lifespan** in fruit flies and roundworms. Scientists use these species because their short lifespan allows them to quickly test lifespan effects of a compound.



In one study, when adult fruit flies were given *Cistanche* extract for 20 days, it extended their average **lifespan** by as much as **18.9%**.⁵

In another study, the **echinacoside** found in *Cistanche* increased the average **lifespan** of roundworms by **13.64%**, compared to an untreated group.²⁴

Cistanche has also been shown to boost the secretion of growth hormone in rat pituitary cells. This could impact lifespan since growth hormone declines with age.²⁵

Latest Studies

Research continues to reveal new and diverse benefits of *Cistanche*. In just the past six years alone, animal studies and preclinical research studies have revealed *Cistanche*'s potential ability to:

- Reverse bone loss and improve bone density,^{6,13,26}
- Improve insulin resistance and promote healthy blood sugar levels,⁶
- Treat or prevent depression,²⁷
- Lower cholesterol,⁶
- Combat physical fatigue,^{3,6,13,28}
- Support reproductive health,^{6,13,28}
- Alleviate constipation,^{6,13,28} and
- Reduce the severity of cataracts.^{6,13,28}

Summary

Extracts of the herb ***Cistanche*** contain bioactive compounds that could support immune function, protect brain health, help fight cancer, reverse bone loss, and more.

Exciting studies also show the potential of *Cistanche* to impact longevity factors and increase lifespan.

Together, this research adds to the growing body of evidence that oral intake of *Cistanche* may promote healthier aging. •

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Blueberries provide health-boosting benefits shown to:

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Item #01214
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An elderly couple is sitting on a lush green lawn, enjoying large slices of watermelon. The man, on the left, has a white beard and is wearing a white button-down shirt. The woman, on the right, has short white hair and is wearing a blue and white striped shirt with a patterned scarf. They are both smiling and laughing. In the upper right corner, there is a circular inset showing a close-up of a pile of brown, granular powder, likely a supplement. The background is filled with green foliage and trees, suggesting a park or garden setting.

SAFELY MANAGE BLOOD SUGAR LEVELS



CINNAMON



AMLA



SHILAJIT



SEAWEED

BY ERIN DAVIS, MS, RDN, CDCES

Over **11%** of Americans have type II diabetes and **38%** have prediabetes.¹

Prediabetes is a serious health condition, in which blood sugar is higher than normal but lower than the diabetic threshold.²

Some people argue that the term “**prediabetes**” be abolished.

That’s because elevated **glucose levels** can increase the risk of vascular disease, eye conditions, nerve damage, dementia, and kidney disease before full-blown **type II diabetes** manifests.³

But diabetes can be **prevented** by reducing blood glucose levels before they get too high.⁴

Unfortunately, **glucose-lowering** drugs are usually prescribed only after diabetes has been diagnosed.

It doesn’t have to be this way. Scientists have discovered several plant-derived ingredients and minerals that can safely reduce **blood glucose levels** and improve **insulin sensitivity**.

Promote Healthy Glucose Levels

Insulin is a hormone responsible for regulating glucose. With age,⁵ poor diet, or a sedentary lifestyle, **insulin resistance**—the inability to properly use insulin—can develop.⁶

Insulin resistance can lead to elevated **blood glucose** levels and **type II diabetes**.⁶

In people with **prediabetes**, lowering blood sugar can reduce the risk of developing diabetes.⁷ In those who are *already* diabetic, managing glucose levels can reduce the risk of developing **diabetic complications**.⁸

Improving diet and increasing physical activity can help control glucose levels.^{6,9} Scientists have also identified several plant-derived ingredients that promote **healthy blood glucose levels**.

They include:

- Cinnamon,
- Chromium,
- Amla,
- Shilajit, and
- Iodine-rich seaweed.



Cinnamon Reduces Glucose

Researchers have found that a water-soluble form of **cinnamon** can help lower **blood sugar**.

Cinnamon polyphenols help activate our cells' glucose detection systems, which helps them maintain already-healthy blood glucose levels.^{10,11}

Findings of a meta-analysis and systematic review of 16 clinical trials suggest the efficacy of cinnamon supplementation in supporting blood sugar levels, and healthy lipid profile.¹²

In a **clinical study** of people with elevated blood glucose, participants were randomized to receive **500 mg** of water-soluble extract of cinnamon or a placebo. After two months results showed:¹¹

- Lowered fasting insulin and glucose (lower insulin indicates improved glucose control),
- Reduced total cholesterol and **LDL** ("bad") cholesterol, and
- Improved insulin sensitivity.

Another clinical study enrolled participants with type II diabetes. Participants were randomized into four groups, two intervention groups (with BMI greater than 27 and less than 27) and two placebo (with BMI greater than 27 and less than 27).

Both intervention groups received **500 mg** of cinnamon bark powder for three months. After three months, results showed that cinnamon improved body fat percentage, body mass index, and lipid profiles in people with type II diabetes. Results were more promising in patients with higher BMI at baseline.¹³

A preclinical study showed that water-soluble cinnamon extract increased the production of **glucose transport molecules** known as GLUT4. These allow cells to take up glucose from the blood when insulin is present.^{14,15}

Without enough effective GLUT4 transporters, blood glucose can *increase*, causing insulin resistance and potentially damage to the tissues.^{16,17}

Additional preclinical research revealed that cinnamon may activate and increase the production of metabolic sensors called PPARs,¹⁸ which mimic the action of some antidiabetic drugs.^{18,19} Increased expression of PPARs promotes **insulin sensitivity**, improving glucose uptake and lowering blood sugar.²⁰

Chromium Fights High Glucose

Chromium is a trace mineral.^{21,22} Cell and animal study model studies suggest that chromium might improve insulin sensitivity.²³

In one observational study, lower levels of chromium were associated with diabetes and **prediabetes**.²⁴

A systematic review and meta-analysis of 25 randomized controlled trials of chromium supplementation in people with diabetes found that oral chromium significantly:²⁵

- Improved blood sugar levels,
- Lowered **HbA1c** (average blood glucose),
- Raised **HDL** (“good”) cholesterol, and
- Lowered triglycerides.

It has been proposed that chromium may work by activating **GLUT4** and enhancing **insulin transport** of glucose into the cells, improving response to elevated blood glucose levels.²⁶

An observational study concluded that the odds of having type II diabetes were lower in those that had consumed supplements with chromium.²⁷

In a human trial of diabetics whose blood sugar parameters were insufficiently maintained on prescription medication, participants were randomized to receive, daily, **200 mcg** of **chromium** combined with the natural product **shilajit** and the ayurvedic herb **amla**, or a **placebo**, in addition to medication. After 60 days, the treatment group had significant **improvements** in fasting and post-prandial glucose levels, compared to placebo.²⁸

Shilajit's Properties

A Himalayan nutrient that has been used for centuries, **shilajit** is rich in **fulvic acid**. Fulvic acid is an organic compound that may contribute to shilajit's medicinal properties.^{29,30}

Shilajit has traditionally been used to manage **diabetes**³⁰ and gastrointestinal conditions (such as gastritis, and ulcers),³⁰⁻³² and muscular strength.³³

Preclinical data reveal that shilajit may also reduce **insulin resistance**.³⁴

In a clinical trial, 90 diabetic patients were randomized to receive **500 mg** of shilajit twice daily or a placebo. After three months improvements in the blood sugar levels were observed.³⁵



Promote Healthy Glucose Levels

- As people age, many develop insulin resistance and elevated glucose, often leading to prediabetes and **type II diabetes**.
- A water-soluble **cinnamon** extract has been shown to reduce blood glucose and increase insulin sensitivity.
- The mineral **chromium** has been shown to improve fasting blood sugar and **HbA1c** (average blood glucose) levels.
- **Amla** and **shilajit** each have demonstrated antioxidant, anti-inflammatory, and glucose-lowering effects.
- Iodine-rich **brown seaweed** can stop the conversion of starches into glucose, lowering blood sugar and increasing insulin sensitivity.
- These ingredients can help maintain healthy glucose levels and prevent the damage elevated glucose can do.

Amla's Benefits for Diabetes

Amla, also known as Indian gooseberry, is an herb that has been shown to lower **blood glucose** in animals and humans with diabetes.^{36,37}

A source of bioactive compounds, **amla** has been shown to have **antimicrobial** and **anti-inflammatory properties**.³⁸

In people with type II diabetes, one study showed that, compared to a placebo, taking a combination of **chromium**, **amla**, and **shilajit** with current medication resulted in better fasting and post-meal glucose levels.²⁸

Seaweed Aids Glucose Control

Seaweed is an excellent source of **iodine**,³⁹ a trace element that is vital to metabolic control and thyroid hormone synthesis.⁴⁰ Clinical studies have shown that consuming **brown seaweed** can reduce glucose levels.⁴¹

Seaweed is thought to work by **blocking enzymes** required for the conversion of starches into glucose in the gastrointestinal tract, resulting in less glucose being absorbed into the bloodstream.^{42,43}

Clinical trials have shown that **brown seaweed extract** can:⁴⁴⁻⁴⁶

- Lower fasting glucose,
- Increase insulin sensitivity,
- Lower HbA1c levels, and
- Improve post-meal cognitive function.

In one preclinical study, brown seaweed was found to improve diet-induced metabolic diseases, such as **diabetes**, and reduce insulin resistance.⁴⁷

A systematic review and meta-analysis of **human trials** was conducted to assess the effects of brown seaweed on plasma glucose levels. The participants were either at high risk of diabetes, had diabetes, or had healthy blood glucose levels. It was concluded that brown seaweed and its extracts positively affect plasma glucose levels and have the potential for managing high blood sugar.⁴¹

Seaweed, amla, shilajit, chromium, and cinnamon can help support healthy glucose levels, protecting against the damage of high blood sugar.

Summary

The elevated glucose levels seen in **prediabetes** and **diabetes** increase the risk for heart disease, dementia, nerve damage, and kidney disease.

Cinnamon, chromium, amla, shilajit, and seaweed can help *reduce* high glucose levels, potentially preventing complications related to high blood sugar.

Anyone can benefit from maintaining healthy blood glucose levels, even people without diabetes or prediabetes. •

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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Health Support Tailor-Made For Men

Men need nutrition that's custom-fitted to support sexual health, testosterone levels, and even prostate and urinary function.

The new Men's Vitality Packs do just that, providing 30 servings of Male Vascular Sexual Support, Testosterone Elite[†], and PalmettoGuard[®] Saw Palmetto and Beta-Sitosterol formulas in convenient, individual daily-dose packs.

Men's Vitality Packs: tailor-made nutrition for men.



Item #02515

1 box of 30 packets

*This product is intended to promote testosterone levels but does not contain testosterone.

**GLUTEN
FREE**

**NON
GMO
LE CERTIFIED**

This product is available at fine health food stores everywhere.

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

"Mainstay in my
prostate
health regimen."

Rick

VERIFIED CUSTOMER
REVIEW

Prostate HEALTH

The best way to keep
YOU in the picture.

Ultra Prostate Formula was created to help maintain prostate health. It contains a dozen ingredients to:

- Support healthy urination
- Promote healthy prostate function
- Support healthy prostate cell division

Ultra Prostate Formula is our most comprehensive *standardized*-ingredient prostate-health supplement.

Item #02029

60 softgels



This product is available
at fine health food stores everywhere.

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

45 Times Greater Bioavailability CURCUMIN



These products are available
at fine health food stores
everywhere.

Patented **turmeric** and **fenugreek blend**
(500 mg) results in **45 times** greater
bioavailability of free **curcuminoids**.

Item #02407

500 mg • 60 vegetarian capsules

Same 500 mg potency of patented **turmeric**
and **fenugreek blend** with added benefits of
ginger and other **turmeric** actives.

Item #02324

500 mg curcumin + gingerol • 30 softgels

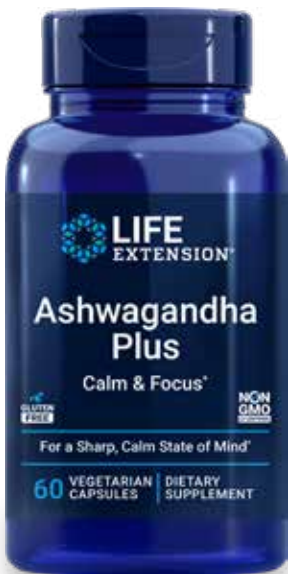


NEW PRODUCTS

More zen, sharper focus

To stay on top of the game, we need focus. But how does one keep an eye on the prize in a world filled with distractions? Stay calm under pressure and tackle the day with **Ashwagandha Plus Calm & Focus.**

Item #02519
60 vegetarian capsules



The calming ashwagandha in this formula helps dial down distractions, while spearmint helps power up focus and attention.

Don't get caught up in the hustle. Stay cool under pressure and focus on what is important with Ashwagandha Plus Calm & Focus.



Item #01828
60 vegetarian capsules



Heart Health Should Be on Everyone's Mind

Nourish a healthy heart by being proactive about cholesterol and triglyceride levels.

Advanced Lipid Control contains 500 mg of amla, an extract of Indian gooseberry which helps maintain already healthy cholesterol as well as triglyceride levels.

Amla also helps inhibit inflammation to support heart health, promotes healthy endothelial function, and helps fight oxidative stress in your cardiovascular system.

Add Advanced Lipid Control to your heart-healthy regimen today.



The Science of a Healthier Life®

PO BOX 407198
FORT LAUDERDALE, FLORIDA 33340-7198



IN THIS EDITION OF LIFE EXTENSION MAGAZINE®



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Two meta-analyses find that *higher* intake of **fish oil** protects against development and progression of age-related **macular degeneration**.

38 CHALLENGES OF MALE AGING

Decades of research describe nutrients that help aging men support sexual, hormonal, and prostate health.



48 REDUCE STRESS...SHARPEN MENTAL FOCUS

Ashwagandha combined with a patented **spearmint** extract *increased* mental alertness while restoring calm.

56 NAD⁺ AND HEALTHY LONGEVITY

Found in every living cell, **NAD⁺** levels decline with age. In animal models, restoring NAD⁺ supports brain, heart, and metabolic health.



72 ARTERIAL PLAQUE

In a controlled study, two **plant extracts** inhibited **atherosclerosis** and reduced **unstable** plaque. This led to an **82% reduction** in major **cardiovascular** events.

82 SYSTEMIC EFFECTS OF CISTANCHE

Cistanche, a Chinese herb, has been shown in animal studies to have **neuroprotective** and **immune** enhancing properties.