



LIFE EXTENSION®

The Science of a Healthier Life®

November/December | 2024

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RESTORE Hormone Balance IN MENOPAUSE

PLUS
Reverse Your
Heart's Pumping
Decline

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Highly Purified Fish Oil

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SUPER OMEGA-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract

(Small, Easy-to-Swallow Softgels)

Item #01986*

240 easy-to-swallow softgels



SUPER OMEGA-3 PLUS EPA/DHA Fish Oil, Sesame Lignans, Olive Extract, Krill & Astaxanthin

Item #01988

120 softgels



SUPER OMEGA-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract

*(Enteric Coated Softgels
for Sensitive Stomachs)*

Item #01984*

120 enteric coated softgels



SUPER OMEGA-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract

(Standard Size Omega-3 Softgels)

Item #01982*

120 softgels

These products are available at fine health food stores everywhere.

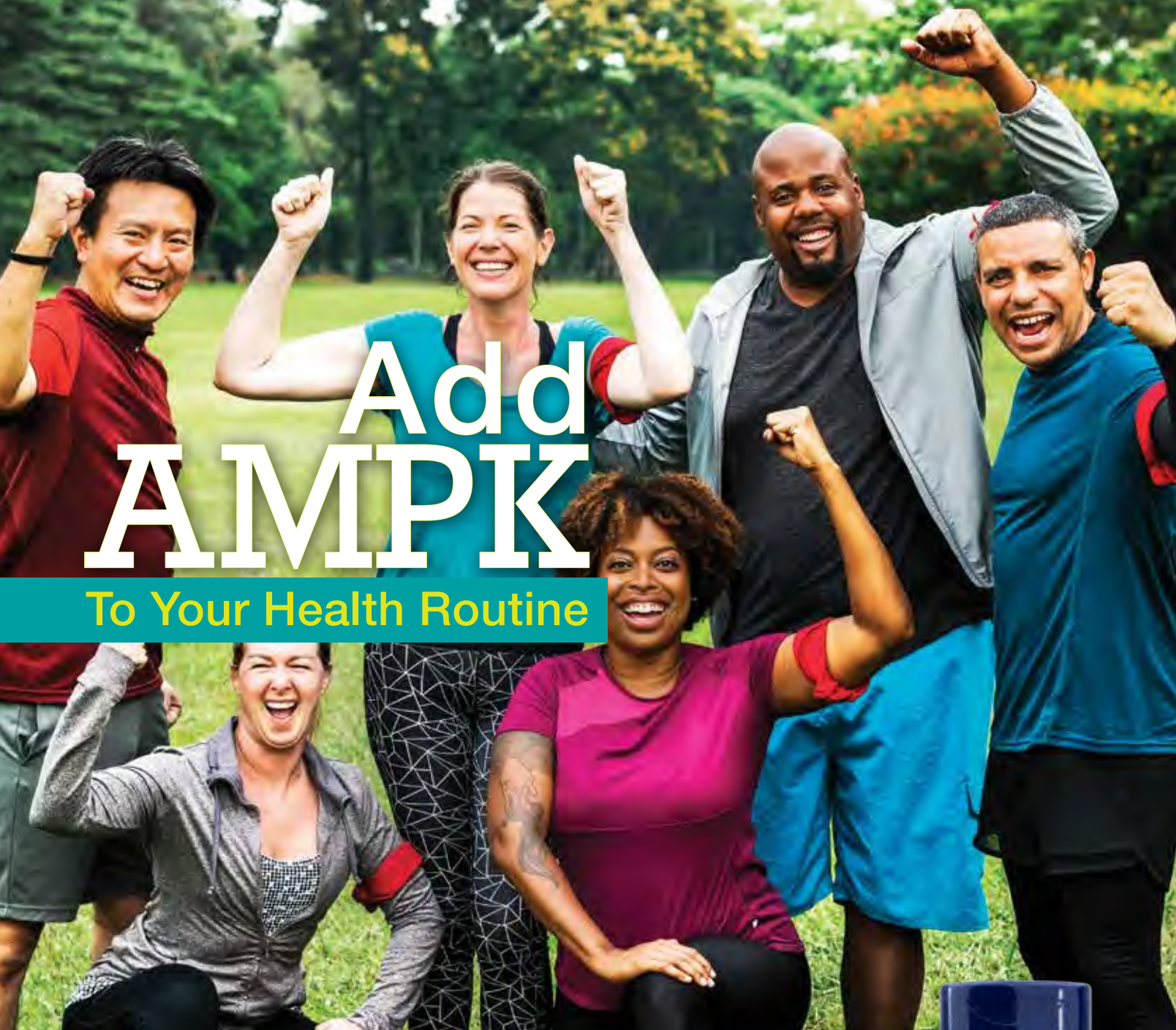


CAUTION: If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult your healthcare provider before taking these products.

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This product has been tested to the quality and purity standards of the IFOS™ program conducted at Nutrasource Diagnostics, Inc.

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.



Add AMPK

To Your Health Routine

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

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

AMPK Metabolic Activator provides gnostemma and hesperidin extracts to:

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

Item #02207

30 vegetarian tablets



This product is available at fine health food stores everywhere.



This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed, and results may vary.
Actiponin® is a trademark of TG Biotech Co., Ltd.

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Make Your Tummy



SMILE

"I have taken this
supplement for a
long time. It works!"

Ingrid

VERIFIED CUSTOMER REVIEW

PHAGES + PROBIOTICS REBALANCE YOUR DIGESTION

Phages target bad intestinal bacteria, allowing beneficial strains to flourish.

FLORASSIST® Probiotic GI provides a 7-strain blend of **probiotics** in a **dual encapsulation** formula to deliver beneficial bacteria and **phages** where you need them the most.



Dual-Encapsulation Delivery



Item #02125

30 liquid vegetarian capsules



This product is available at fine health food stores everywhere.

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Aging can Wait

Support for a Healthy Lifespan



Item #02527

0.46 lb or 7.41 oz.

In recent years, three nutrients have emerged as having healthy **lifespan-enhancing** potential:

Taurine

Functions via a range of *anti-aging* mechanisms¹⁻⁵

Lithium

In epidemiological studies higher dietary intake of lithium (drinking water) is associated with lower risk of mortality.⁶⁻⁸

Spermidine

In epidemiological studies, higher intake correlates with longer healthspan.⁹⁻¹¹ A one-year study showed that a diet enhanced with **spermidine** daily *improved* memory scores.¹²

Consumers have used some of these **nutrients** for decades, albeit at lower concentrations than what may be optimal for healthy aging.

New Healthy Aging Powder provides the following in one scoop:

- **Taurine** 5,000 mg
- **Lithium** 2,000 mcg
- **Spermidine** 3,000 mcg
(0.2% standardization from 1,500 mg Wheat germ extract)

These nutrients may promote **healthy aging** by supporting cardiovascular health, exercise performance, and cognitive function.

The full dose is one scoop daily mixed with water or juice.



Contains wheat.

This product is available at fine health food stores everywhere.

References:

1. *Adv Exp Med Biol.* 2017;975 Pt 1:67-77.

2. *Science.* 2023 ;380(6649) :eabn9257.

3. *Eur J Pharmacol.* 2020 Oct 15;885:173533.

4. *Nutrients.* 2020 Sep 17;12(9).

5. *Nutrition.* 2022 Sep;101:111706.

6. *J Alzheimers Dis.* 2018;61(1):425-34.

7. *Appl Physiol Nutr Metab.* 2018 Apr;43(4):412-4.

8. *Eur J Nutr.* 2011 Aug;50(5):387-9.

9. *Am J Clin Nutr.* 2018 Aug 1;108(2):371-80.

10. *Front Public Health.* 2022;10:949170.

11. *Cell Rep.* 2021 Apr 13;35(2):108985.

12. *Wien Klin Wochenschr.* 2021 May;133(9-10):484-91.

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.

LET THE SUNSHINE IN

D3, the sunshine
vitamin, is key to
strong bones and
immune health



Promote immune, brain and bone health with vitamin D3, a whole-body health supporter. A daily dose of D3 also supports your heart and vascular health and helps you maintain those healthy blood pressure levels.

Item #01713

125 mcg (5000 IU) • 60 softgels

This product is available at fine health food stores everywhere.

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

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.

REPORTS



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ON THE COVER**

RESTORE HORMONAL BALANCE IN MENOPAUSE

In a **clinical trial** of postmenopausal women, two **plant-derived** compounds *boosted estradiol* blood levels and *reduced* multiple **menopausal symptoms**.

DEPARTMENTS

10 IN THE NEWS

Healthy diets linked to healthy aging; vitamin D benefits for elite athletes; ginkgo improves cognition in stroke patients; cranberry extract supports healthy gut microbiome.

92 HEALTHY EATING: WHEY PROTEIN

Whey *reduces muscle wasting* in the elderly, *inhibits weight gain*, may help prevent cardiovascular disease, and more. Four delicious smoothie recipes with whey ingredients are presented.

16 DRY EYE SYNDROME: SUSTAINED RELIEF

Dry eyes are annoying and can lead to permanent eye damage. A berry extract *boosts* the body's own production of **real tears** by a clinically documented **89%**.

24 LYCOPENE AND INSULIN

Lycopene helps restore insulin sensitivity, improve sirtuin function, and reduce inflammation.

30 VITAMIN K AND BLOOD SUGAR

Published studies show that **vitamin K** helps *lower* blood glucose and *increase* insulin sensitivity.

48 WHAT ARE TOCOTRIENOLS?

This form of **vitamin E** helps protect against DNA damage, improves heart and bone health markers, and enhances immune response and blood sugar control.

54 HELP YOUR HEART PUMP BETTER

In a **clinical trial**, a plant extract *improved* the heart's **pumping ability**, *increased ejection fraction* and *reduced* physical fatigue by **23%**.

64 BANISH BLOAT AND INDIGESTION

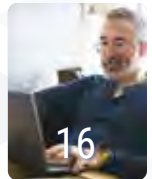
Two plant compounds relieved various symptoms of bloating and indigestion in **63%** of participants.

72 MELATONIN'S POTENTIAL ANTI-CANCER EFFECTS

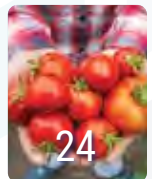
Studies show that **melatonin**, when used with standard cancer treatment, *improves tumor regression* and **survival rates** while *reducing* chemo side effects.

82 COUNTERACT EFFECTS OF EARLY MENOPAUSE

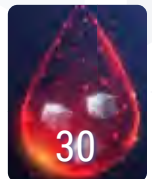
Early-onset menopause is associated with an increased incidence of psychiatric disorders, osteoporosis, and overall mortality. Preventive steps can help reduce these risks.



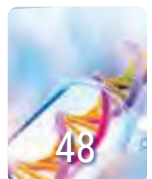
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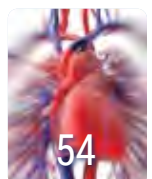
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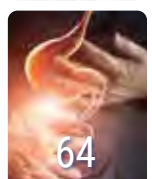
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48



54



64



72



82



hormone harmony

Encourage estrogen production and help relieve hormone-related discomforts like hot flashes and night sweats with fenugreek plus red clover, chaste tree and black cohosh to support women's health as they age.

NEW

**LIFE
EXTENSION®**

**WOMEN'S
HEALTH**

**Estrogen Balance
Elite™**

Plant-Based
Female Hormone Support™

60 VEGETARIAN
TABLETS | DIETARY
SUPPLEMENT

Item #02534

60 vegetarian tablets

**GLUTEN
FREE** **NON
GMO
LE CERTIFIED** **VEGETARIAN
LE CERTIFIED**

This product is intended to promote estrogen but does not contain estrogen..

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

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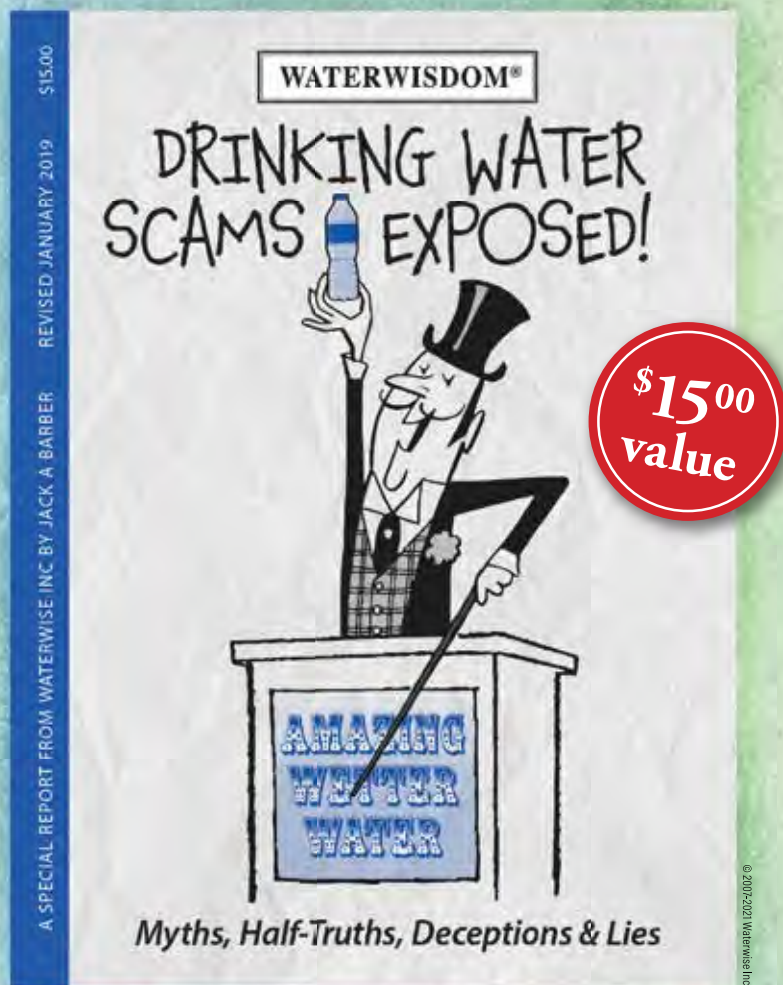
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In the News

Diet for Healthy Aging

Consuming a healthy diet from one's 40s through the age of 70 was connected to healthy aging, a recent study found.*

The investigation included 36,464 men enrolled in the Health Professionals Follow-Up Study and 70,467 women who participated in the Nurses' Health Study.

Responses to questionnaires completed every four years were analyzed for adherence to eight healthy dietary patterns:

- Alternative healthy eating index,
- Alternative Mediterranean diet,
- Dietary approaches to stop hypertension (DASH),
- Mediterranean-DASH intervention for neurodegenerative delay diet (MIND),
- Healthful plant-based diet,
- Planetary health diet,
- Empirical dietary index for hyperinsulinemia, and
- The empirical dietary inflammatory pattern.

During 30 years of follow-up, 9,837 participants achieved healthy aging. "The people who had healthier eating patterns had a **43% to 84%** greater chance of aging well compared with those who did not," the authors stated.

Editor's Note: "Overall, the more fruits, vegetables, unsaturated fats, nuts, low-fat dairy and whole grains people ate, the better they were in terms of aging. Participants with diets made mostly of trans fats, sodium, as well as red and processed meats, had lower odds of healthy aging," the study's authors concluded.

* *J.CDNut*.10.1016 2024.102176.



Athletes Benefit from Vitamin D Supplementation

A systematic review concluded that there are several benefits from supplementing with vitamin D for elite male and female athletes.*

Researchers evaluated data from 14 randomized trials that examined the effects of vitamin D3 capsules or drops among 482 athletes. Vitamin D doses ranged from **2,000 IU** to around **7,100 IU** per day, with an average daily dose of around **5,000 IU/day**, administered for at least two weeks.

Of three studies that evaluated aerobic capacity, two found improvements in maximal oxygen uptake and physical working capacity in association with vitamin D.

Five of the seven studies that evaluated anaerobic power and strength resulted in vitamin D-associated improvements.

Among four studies that evaluated bone health, one demonstrated increased bone mineral density in association with vitamin D compared with the control group.

Editor's Note: "Deficiency in vitamin D has been shown to increase the risk of injury," the researchers stated.

* *Orthop J Sports Med.* 2024 Jan 3;12(1):23259671231220371.



Ginkgo Benefits Stroke Patients

Acute ischemic stroke patients who received ginkgo in addition to conventional treatment showed improved cognitive function, a clinical trial found.*

Of the 126 participants, 63 received **25 mg** ginkgo daily for two weeks in addition to conventional care while the other patients received conventional care alone. Inflammatory and blood coagulation factors were measured before, and two weeks after the treatment period. Cognitive function tests were administered prior to the trial and at three and six months after the trial's conclusion.

In both groups, cognitive and neurological functions were assessed at baseline, day 14 and after three months of treatment. Neurological functions' deficits assessed by National Institutes of Health Stroke Scale scores improved after 14 days and continued to show improvement after three months in the ginkgo group as compared to placebo.

Activities of daily living scores in the treatment group improved at day 14 and for three months after treatment compared to placebo.

Editor's Note: In addition, before treatment inflammatory and coagulation factors were similar in both groups of participants, but after 14 days they were lower among treated patients than the controls.

* *Open Med (Wars).* 2024 Mar 13;19(1):20240908.

Cranberry Extract Supports a Healthy Microbiome

An increase in beneficial *Bifidobacterium* and other favorable microbial changes were found in people who supplemented short-term with cranberry extract, according to a recent study.* Cranberry is rich in various polyphenol compounds, including anthocyanins and flavonols.

The study included 28 men and women who were asked to refrain from foods that contained cranberry flavanols for a week. They were subsequently assigned to four days during which they consumed cranberry extract capsules twice per day. Stool samples were collected before and after the treatment period.

At the time of the study's conclusion, *Bifidobacteria* and butyrate-producing bacteria in stool samples were increased compared with samples obtained prior to the administration of cranberry extract.

Editor's Note: Improvement in the composition of the gut microbiome can help protect against unfavorable effects of a Western diet, the authors stated.

* *NPJ Biofilms Microbiomes*. 2024 Mar 6;10(1):18.



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NON
GMO
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Item #02368

30 vegetarian capsules

Many of broccoli's benefits come from **sulforaphane**—a compound that is *activated* when the plant is cut or chewed.¹⁻³

Mature broccoli provides relatively little **sulforaphane precursor** compared to broccoli sprouts. Cooking further depletes the sulforaphane precursor.^{2,4}

Optimized Broccoli with Myrosinase improves conversion of the precursor into **sulforaphane**, and its absorption into the bloodstream.^{2,5,6}

Each capsule of this product contains:

- **Glucoraphanin**—a sulforaphane *precursor*—found in broccoli seed extract that is standardized to a high concentration of glucoraphanin.^{3,4}
- **Myrosinase**, an enzyme found in mustard seed that converts **glucoraphanin** to **sulforaphane**.²⁻⁶
- **Vitamin C**, a cofactor for the myrosinase enzyme for more efficient *enzymatic conversion*.⁷

This product is available at fine health food stores everywhere.

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Senolytic

ACTIVATOR® with BIO-FISETIN®

"Taking this supplement,
I feel I will be healthy for
the long haul."

Larry

VERIFIED CUSTOMER REVIEW



Item #02301

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(Each bottle lasts 3 months)



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Senolytic Activator® contains nutrients designed to target senescent cells for normal elimination.

This formula contains a patented **fisetin** that is more **bioavailable** than regular fisetin.

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

The suggested dose of the **Senolytic Activator®** is **3 capsules** once a week. Each bottle lasts 3 months and costs very little.

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BOOST YOUR BODY'S DEFENSES

Lycopene, extracted from tomatoes,
is a powerful antioxidant.

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

"An essential
part of my
supplement plan."

Larry

VERIFIED CUSTOMER
REVIEW



Item #00455

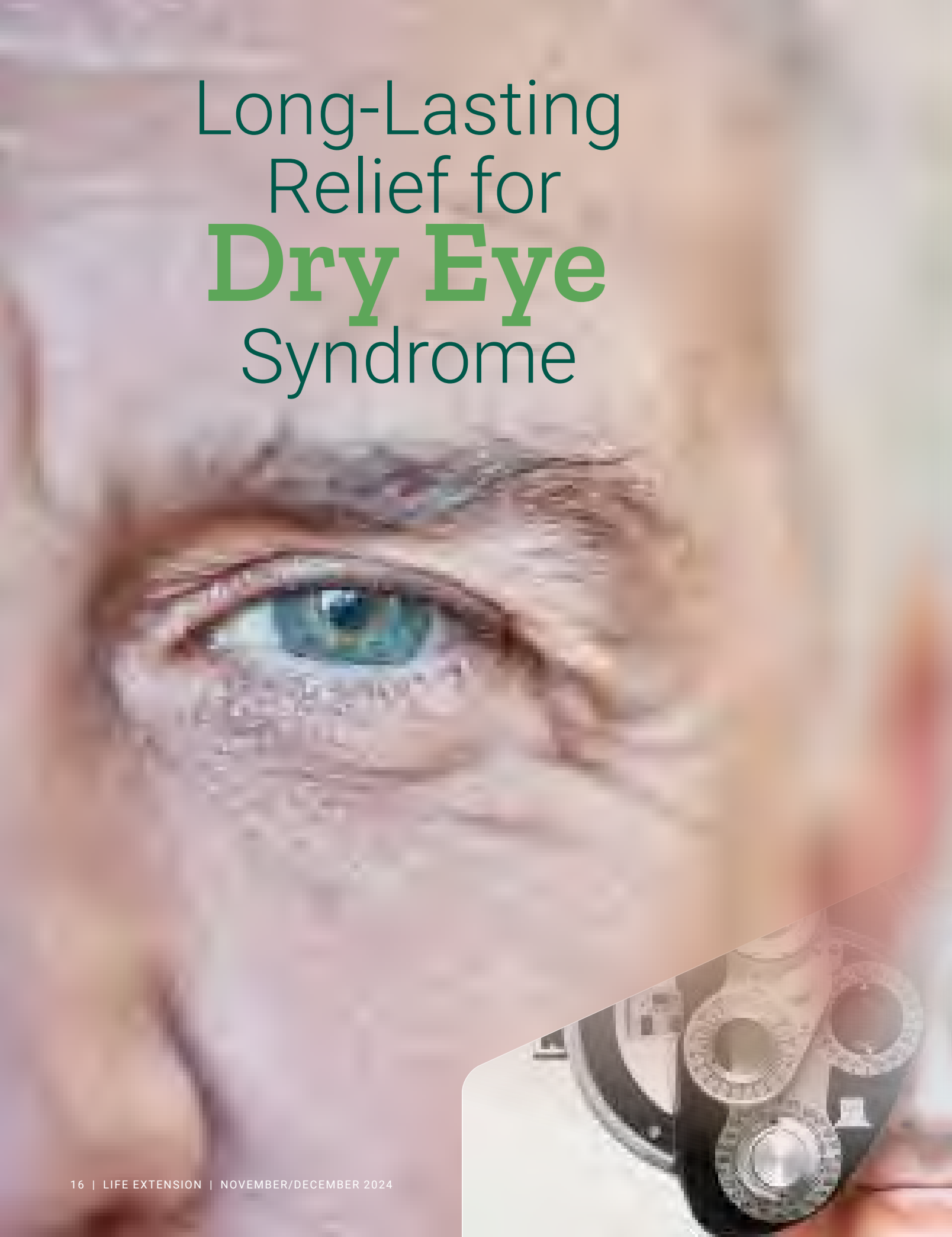
90 softgels

This product is available at fine health food stores everywhere.

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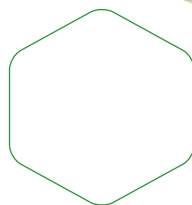
These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

A close-up photograph of a person's eye. A hand is holding a contact lens, and it is being placed onto the eye. The eye is blue, and the contact lens is clear. The background is blurred, showing the person's face and hand.

Long-Lasting Relief for **Dry Eye** Syndrome



MAQUI BERRY



BY MICHAEL DOWNEY

Dry eye syndrome is an annoyance, causing redness, itching, and other frustrating symptoms.

This condition occurs when the eyes don't produce enough **quality tears**.²

When **dry eye syndrome** becomes severe, and is left untreated, it can lead to permanent **eye damage**.¹

Prevalence of dry eye syndrome is growing with greater use of smartphones, tablets, computers, and other **digital screens**.³

It has been estimated to affect about **16 million** Americans.⁴

Many turn to over-the-counter eye drops, which provide **short-term** relief but don't address underlying causes.

Prescription treatments are available but can have side effects and may provide only symptomatic relief.⁵

Here's the good news: Scientists have identified a **berry extract** that combats dry eyes the natural way, by boosting the body's *own* production of **real tears**.⁶

A pilot study found that, taken **orally**, a **maqui berry** extract provided a **72%** improvement in **dry eye** symptoms after 60 days.⁶

A larger **clinical trial** showed that **maqui** extract, taken orally for four weeks increased **tear production** by **89%**, protecting the eyes and improving quality of life.⁷

Possible Eye Damage

Dry eye syndrome can be caused by aging, wearing contact lenses, dry weather, air pollution, smoking, and allergies.⁵ It can also be associated with some medical conditions or can even occur after eye surgery.^{4,5} Use of computers, smartphones, tablets, e-readers, and other **digital screens** often worsens the condition.^{8,9}

The symptoms of dry eyes can include itching, burning, light sensitivity, and blurred vision.⁴ The discomfort and visual disturbances from dry eyes can impact **quality of life**.¹⁰ Studies have shown that the irritation of dry eyes is associated with lower scores on mental health scales,^{10,11} including depression and anxiety.¹²

Even worse, without treatment, chronic dry eyes can cause **eye damage**.^{1,4}

Tears are essential for lubricating and protecting the **cornea**, the front central surface of the eye. They protect the eye from infection, wash away foreign matter, and deliver critical nutrients to the surface.^{13,14}

As a result, dry eyes can eventually damage the **cornea**. If severe and left untreated, ulceration and scarring of the cornea can lead to permanent **impairment of vision**.⁵



Tear Quantity and Quality Matter

There are **three layers** of natural tears: oil, water, and mucus.¹⁵

The eye surface is lubricated, nourished, and protected by the normal, if tiny, amount of **tears** normally produced daily, about **0.7 mL** to over **3 mL** per eye.⁶

People affected by **dry eye syndrome** either:⁵

- Don't produce enough tears, or
- Have tears that evaporate too quickly.

Maqui Berry Restores Tears

Seeking a solution, scientists identified **maqui berries**, a fruit found in Chile, abundant in anthocyanidin pigments called **delphinidins**. Maqui berries and delphinidins exhibit protective effects to support eye and vision health.^{6,16}

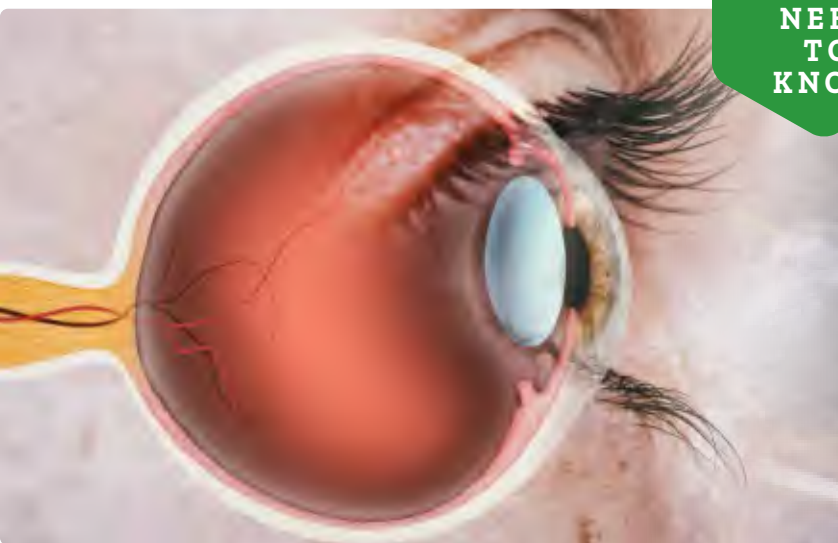
Researchers have found in preclinical studies that a standardized **extract** of **delphinidin-rich maqui berries** may:^{16,17}

- Provide protection to the eye and tear producing lacrimal gland by reducing levels of free radicals,¹⁶
- Inhibit harm from light exposure, protecting critical **photoreceptor cells** that convert light into signals sent to the brain,¹⁷ and
- Help restore production of natural, high-quality tears.¹⁶

Taken orally, an extract of maqui berries has been shown to **boost natural tear production**, delivering relief for dry and irritated eyes.^{6,7} This, in turn, may help prevent the damage that can occur with long term, unmanaged dry eyes.

This eye benefit of **maqui berry** extract was seen in a rat model of dry eyes. The rats were randomized to receive pretreatment with **maqui berry** extract and with **placebo**.

Pretreatment with maqui berry extract significantly prevented loss of tears as compared to placebo. The animals pretreated with **maqui berry extract** retained clear eyes with no new corneal damage throughout the study.¹⁶

WHAT
YOU
NEED
TO
KNOW

Boost Natural Tears and Soothe Dry Eyes

- **Dry eye syndrome** is increasingly common, causing burning, redness, itching, eye fatigue, and reduced quality of life. When severe, prolonged, and untreated, it can also lead to permanent eye damage.
- Eye drops only have a temporary effect, and prescription medications can have side effects.
- Taken orally, an extract of the **maqui berry** has been clinically shown to boost **high-quality** tear production by **89%**, improving dry eye symptoms, quality of life, and eye health.

Compelling Pilot Study

In a pilot **clinical trial**, researchers investigated the ability of **maqui berry extract** to relieve dry eyes by supporting healthy tear production. The study enrolled 13 adults with moderate eye dryness, which was tested by Schirmer's test to evaluate the amount of tear fluid produced by the tear glands.⁶

The 13 volunteers took either **30 mg** or **60 mg** of **maqui berry extract** daily for 60 days.

Both dosages led to about **50% improved tear production** after 30 days. After 60 days, however, the *lower-dose* group lost half of their improvement, while the *higher-dose* group maintained **nearly all** their increased tear production.⁶

The participants were also evaluated to assess bothersome symptoms of dry eyes and their effect on daily life. This was done using a **Dry-Eye Related Quality-of-Life Score test** questionnaire. A *higher* score indicates *greater* impairment and *worse* quality of life.

The score for each group was about **40** at the start of the study. After taking daily **maqui berry extract**:⁶

- Scores for patients taking **30 mg** of maqui berry extract improved to almost **22** after 30 days. But their scores stayed much the same by day 60.
- Scores for patients taking **60 mg** improved to almost **27** after 30 days. But their scores continued to drop to a beneficial low **11** points by day 60.

This constitutes a **72% improvement** in dry eye-related quality-of-life symptoms after just two months.⁶

Clinically Validated

Moving on to the gold standard of medical research, scientists conducted a **randomized, placebo-controlled trial**.

This study enrolled 74 healthy adults with moderate eye dryness and eye fatigue and more than four hours of exposure to computer, cell phone or other screen-based devices. Each day, half took a placebo, and half took **60 mg** of **maqui berry extract** for four weeks.⁷

At the start, dryness levels were the same for each group. But after four weeks, the **maqui extract** group had:⁷

- Higher production of **tear fluid** in both eyes, with an average increase of **89%**,
- Reduced **eye dryness**, and
- Less **eye fatigue**.

On a quality-of-life test, the maqui group had substantially *improved* total values for bothersome **ocular symptoms** (such as grittiness, dryness, or redness), compared to the placebo.

On another survey, the **Visual Analog Scale**, the maqui group reported significant improvements in **eye fatigue**.⁷

This clinical trial found that taking **60 mg of maqui berry extract** daily for four weeks reduces eye dryness and fatigue, which may help protect eyes from permanent damage.

Summary

Dry eye syndrome causes discomfort and reduced quality of life and can lead to long-term damage to eye tissue.

An oral extract of the **maqui berry** helps the body produce more of its own high-quality tears.

It has been shown in clinical research to boost natural tear production by **89%**, improving dry eye symptoms, protecting eye health, and boosting quality of life. •



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my heart."

Donna

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100 mg, 60 softgels



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Optimized Ashwagandha provides **standardized** leaf and root **extracts** at a low cost.



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Sue

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health.



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Glucosamine sulfate 2KCl (derived from corn)	1,500 mg
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^a 3-O-acetyl-11-keto- β -boswellic acid.

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60 capsules



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Effects of Lycopene on Insulin Function

BY JASON ALLEN



Insulin resistance is at the root of most glucose control disorders like **type II diabetes** and **metabolic syndrome**.

With normal function, the body's insulin system helps process **blood glucose**, keeping levels in check. If insulin resistance develops, blood sugar levels can soar, eventually causing widespread damage.¹

A review and meta-analysis of randomized **clinical trials** found that individuals supplemented with **lycopene** tended to have lower levels of fasting blood **glucose**. This was true in studies in diabetics and non-diabetics, including those with metabolic abnormalities.²

An earlier comprehensive review of **human** studies noted better **metabolic health** in those who consume more **lycopene**.³

Insulin Resistance

Insulin is a hormone produced by the pancreas. It instructs cells to take up and use glucose.

After a meal, **blood glucose** levels rise. Insulin helps cells process this glucose, bringing glucose levels down again.⁴

When sensitivity to insulin *drops*, which is more common with advancing age and abdominal obesity, it is known as **insulin resistance**. This happens because cells do not take up glucose efficiently and levels stay abnormally high.¹

Insulin resistance can lead to **type II diabetes** and can be related to accelerated aging. This includes development of disorders of the heart, brain, kidneys, nerves, and (fatty) liver.¹

The number of people with diabetes is rising and is expected to reach more than **half a billion** worldwide by 2030.⁵

Lycopene Improves Metabolic Health

Lycopene is a red **carotenoid** pigment found in tomatoes, watermelon, and other fruits. It has demonstrated antioxidant and anti-inflammatory activity and has been studied for its potential ability to fight factors that drive chronic disorders.⁶

In a large review of studies, researchers determined that *higher* dietary **lycopene** or higher serum lycopene was associated with reduced all-cause mortality,

prostate cancer, stroke, cardiovascular disease, metabolic syndrome, and male infertility.⁷

Several studies have suggested that some of lycopene's anti-aging benefits may be due to its ability to protect against metabolic disease and elevated blood glucose.^{2,8,9}

A systematic review of **human** studies has found an association between higher lycopene intake or blood levels and better **metabolic health**.

Similar results were seen in a subset of human intervention trials, showing protective effects of lycopene intake against metabolic syndrome using varying dosages and durations of intake.³

A review and meta-analysis of clinical studies found that those with higher **lycopene** intake tend to have *lower* levels of **fasting blood glucose** in both diabetics and non-diabetics.²

In two studies in people with diabetes, taking **30 mg** of lycopene daily reduced fasting blood glucose by almost **10%**.²

Improves Insulin Resistance

In the last couple of years, new research into lycopene's effect on insulin has been published.

Obese animals and aged animals normally suffer from **insulin resistance** and glucose intolerance. But lycopene intake *reversed* these metabolic abnormalities, improving **insulin sensitivity** and mitochondrial function, along with blood **glucose control**.¹⁰⁻¹⁴

Studies have also found that lycopene reduced **inflammation** in liver and fat tissues,^{10,15} lowering signs of tissue aging and improving the function of blood vessels, which normally deteriorate with **insulin resistance**.^{11,12}

Lycopene's ability to improve metabolism and counter insulin resistance is partly due to its **anti-inflammatory** and **antioxidant** effects.^{8,11,12}

Recent studies, however, suggest another way that lycopene may improve insulin function.





Lycopene activates an **anti-aging protein** in cells called **SIRT1**. Diminished activity of this **sirtuin** (a protein critical for cellular health) is part of the process that leads to insulin resistance.^{11,12} By **boosting SIRT1**, lycopene can fight aging while improving **insulin function**.

This suggests that augmenting **sirtuin** function is an additional mechanism that aids in lycopene's metabolic benefits.

Summary

Insulin resistance leads to high blood sugar and metabolic disorders, including **type II diabetes**.

Observational studies suggest that lycopene intake may help lower high blood sugar levels. Recent research shows that lycopene may restore **insulin sensitivity**, improve sirtuin function, and reduce chronic inflammation and oxidative stress. •

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Cry me a river

Tears are a good thing—until you don't have enough.



Item #01918

30 vegetarian capsules

"Love this!"

Michael

VERIFIED CUSTOMER
REVIEW

You might think tears are produced only when you're happy or sad. But your body constantly makes them. Tears lubricate and protect your eyes.

Maqui berries produce compounds called delphinidins that encourage tear production—an up to **45% increase** in one study.

So where can you get a delphinidin-rich maqui extract? **Tear Support with MaquiBright®.**

This product is available at fine health food stores everywhere.



MaquiBright® is a registered trademark of MAQUI NEW LIFE S.A, Chile and ORYZA OIL & FAT CHEMICAL CO., LTD., Japan.

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The Vitamin B Family is Complex. So is our formula.



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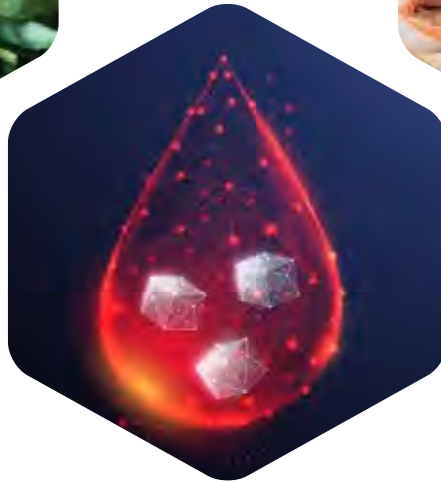
This product is available at fine health food stores everywhere.

* As powder Sophra japonica extract standardized to 98% quercetin.

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VITAMIN K's Role in Blood Sugar Control



BY JULIA REMINGTON

Vitamin K is best known for promoting proper blood clotting and bone health.¹

A meta-analysis of randomized controlled trials revealed that **vitamin K** supplementation also has favorable effects on **glucose metabolism** parameters and risk of developing **type II diabetes**.²

In observational studies, higher intake of vitamin K has been associated with a reduced risk of type II diabetes and improved markers of glucose control.³⁻⁵

Clinical trials have shown that vitamin K supplements can improve metabolic health in adults with diabetes and prediabetes, significantly reducing elevated **glucose** and **insulin** levels.⁶⁻⁸

That may help prevent the damage caused by high blood sugar in diabetics *and* reduce the risk of developing **type II diabetes** in the first place.

The Importance of Vitamin K

Vitamin K is found in green leafy vegetables, fermented foods, and some animal products, particularly organ meats. It occurs in two general forms, **vitamin K1** and **vitamin K2** (see box on page 44).¹

Vitamin K is *required* for the proper function and activation of different proteins known as **vitamin K-dependent** proteins.

These proteins include several **clotting factors** that control blood coagulation as well as **osteocalcin**, a protein tied to vascular and bone health.

Some of these vitamin K-dependent **proteins** help keep **calcium** in the **bones**, and out of **blood vessels**. Calcified blood vessels are one of the hallmarks of atherosclerosis and vascular dysfunction. Without adequate vitamin K, the risk of cardiovascular disease, osteoporosis, and osteopenia rises.^{1,9}

Other vitamin K-dependent **proteins** have favorable effects on **metabolic function**.^{3,10}

Link to Metabolic Health

Multiple types of research indicate that vitamin K2 intake may lower risk of developing **type II diabetes**.¹¹

The vitamin's role in glucose homeostasis may be due in part to the activation of **osteocalcin**. In addition to its role in **bone** mineralization, osteocalcin stimulates healthy insulin and adiponectin expression.¹²

Studies show that people with *higher* intake of vitamin K tend to have *better* insulin sensitivity, better control of **blood glucose** levels, and a *decreased* risk of developing **type II diabetes**.^{3,5}

In an observational study embedded in a randomized controlled trial of the Mediterranean diet for prevention of cardiovascular disease, men and women without cardiovascular disease were followed for 5.5 years. Dietary information was collected annually through questionnaires.

It was found that baseline intake of **vitamin K1** was lower in participants who developed diabetes during the study. It was also found that the risk of developing diabetes dropped by approximately **17%** for every **100 mcg** of vitamin K1 consumed per day.

Subjects who increased their dietary vitamin K1 intake over those 5.5 years had a **51% reduction in risk** for developing diabetes, compared with those who did not increase vitamin K intake. The authors concluded that dietary vitamin K1 is associated with reduced risk of type II diabetes.¹³

Impressive Clinical Results

Clinical trials have confirmed that **vitamin K** intake (either as vitamin **K1** or **K2**) can improve metabolic health in diabetic and nondiabetic adults.

Three randomized, controlled trials of the MK-7 form of vitamin K2 have shown clear benefits to **glucose** metabolism in adults with **type II diabetes**.^{6,7,14}

In all three trials, taking **90-360 mcg** of MK-7 vitamin K2 daily for three to six months significantly *reduced* fasting **blood glucose** and **hemoglobin A1c** (HbA1c), a marker of long-term glucose control, compared to **placebo**.

In one of these trials, published in **2023**, adults with type II diabetes who took vitamin K2 at **90 mcg** per day for six months *reduced* fasting **glucose** by **13.4%**, fasting **insulin** by **28.3%**, and HbA1c by **7.4%**.¹⁴ High fasting insulin is often seen in early-to-mid-stage type II diabetics and can be a significant risk factor for metabolic dysfunction and diabetic complications.¹⁵

In another of these trials, a measure of **insulin resistance** was reduced by **55%** in the group receiving **200 mcg** per day of the MK-7 form of vitamin K2.⁶

Vitamin K has also been shown to lead to metabolic improvements in healthy adults and those with **prediabetes**.



WHAT
YOU
NEED
TO
KNOW

Improve Metabolic Health

- **Vitamin K** has long been recognized for its importance to blood clotting and bone health. It has now been shown to also play a role in metabolic health.
- In observational studies, lower levels of vitamin K correlate with greater risk for insulin resistance and **type II diabetes**. *Higher* blood levels of vitamin K are linked to a *decreased* risk of diabetes.
- Clinical trials show that vitamin K intake improves metabolic health, increasing insulin sensitivity and **reducing blood glucose** levels in those with diabetes and prediabetes. It also reduces the risk of developing type II diabetes.

Two placebo-controlled randomized trials showed that vitamin K can improve insulin sensitivity. One study showed that vitamin **K1** benefitted older men, compared to placebo¹⁶ while the other found a similar effect in young men, using the MK-4 form of vitamin **K2**.¹⁷

In another randomized controlled clinical trial, **pre-diabetic** women were given **1,000 mcg** of vitamin **K1** or a placebo daily for four weeks. Vitamin K1 lowered **blood sugar** and increased **insulin sensitivity**.⁸

How It Works

Vitamin K appears to improve insulin function and glucose metabolism in at least two main ways:

- Activating vitamin K-dependent proteins is involved in regulating **glucose metabolism**.³
- Suppressing chronic **inflammation** and production of pro-inflammatory compounds. These are major contributors to diminished insulin sensitivity and metabolic disease.³

Together, these actions could help reduce elevated glycemic markers and lower risk for diabetic complications.

Summary

Low levels of **vitamin K** are tied to increased risk for insulin resistance, poor glycemic control, and **type II diabetes**.

In observational studies, *higher* vitamin K intake and blood levels are associated with *lower* risk of diabetes.

Clinical trials show that vitamin K intake improves **metabolic health** and lowers elevated **blood glucose** in those with both type II diabetes and prediabetes. It can also help reduce the risk of developing type II diabetes. •

The Difference Between Vitamin K1 and K2

Vitamin K is generally taken in two different forms.

Vitamin K1 (also known as **phylloquinone**) is found mostly in leafy green vegetables. It is necessary for normal, healthy blood clotting.^{3,18}

Vitamin K2 (menaquinone) is found in some fermented foods, dairy products, and organ meats.^{3,18}

The biological effects of vitamin K1 and K2 are overlapping, though each works in somewhat different ways and may be absorbed and used differently by the body.¹⁹

Optimal intake of **both** forms is recommended to ensure you are maximizing their potential benefits.



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"I like what I see when
I look in my mirror!"

Nancy

VERIFIED CUSTOMER
REVIEW

*The quickest way to
betray your age is with
a tired appearance...*



Revive Hair, Skin, and Nails from Within

This product is available at fine health food stores everywhere.

Working from the inside out, **Hair, Skin & Nails Collagen Plus Formula** is an oral supplement with nutrients shown to benefit the hair, skin, and nails to keep them looking vibrant and healthy.

Rejuvenating nutrients include:

- **VERISOL® Bioactive Collagen Peptides®**—Stimulates the formation of new collagen and elastin to promote skin suppleness and elasticity¹
- **Cynatine® HNS Plus**—Provides solubilized keratin, zinc, B vitamins, biotin, and copper
- **Biotin**—Supports nail strength and integrity²
- **Silicon**—For the formation of collagen and keratin molecules³

Item #02322

120 tablets

Caution: Individuals with inborn errors of copper metabolism (e.g. Wilson's disease) should avoid daily, chronic use of this product.

Cynatine® is a registered trademark of Roxlor, LLC. VERISOL® and Bioactive Collagen Peptides® are registered trademarks of GELITA AG.

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

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

Rusty

VERIFIED CUSTOMER
REVIEW

NEURO-MAG[®]

THE SMART MAGNESIUM

SUPPORTS OVERALL
COGNITIVE ABILITY



Item #01603

90 vegetarian capsules

Neuro-Mag[®] Magnesium L-Threonate
helps maintain working
(short-term) memory, encourages
quick thinking, and supports
overall cognitive function.¹⁻³



Item #02032

93.35 grams of powder



These products are available at fine health food stores everywhere.

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Magtein[®] is protected under a family of US patents, pending patents, and is protected worldwide.

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Strong Support for Sore Muscles

After Exercise and Everyday Exertion



Item #02023

60 vegetarian capsules



Benefits of **TART CHERRY** include:¹⁻⁵

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

ANTHOCYANINS

Anthocyanins—the powerful flavonoids found in dark-pigmented fruit—have been studied for their many advantages, including **heart, cellular, and cognitive health**.⁶⁻⁸

Tart Cherry with **CherryPURE®** matches the anthocyanin dose used in clinical trials.^{2,5}



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

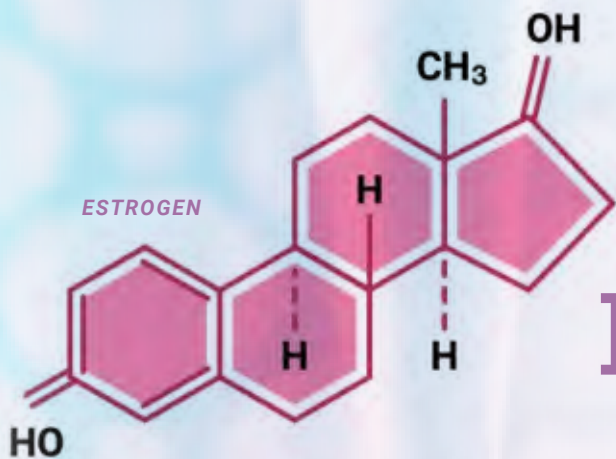
This product is available at fine health food stores everywhere.

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.



FENUGREEK SEEDS





Restore HORMONAL BALANCE in Menopause

BY HEATHER L. MAKAR

For centuries, the herb **fenugreek** has been used in traditional medicine to promote **hormonal balance** and ease the symptoms of **menopause**.

Modern science has confirmed these benefits.

In multiple **clinical trials**,¹⁻⁵ a standardized **fenugreek seed extract** was shown to support healthy **estrogen** levels and ease the most common discomforts of **menopause**.

In one study, fenugreek extract reduced:³

- Hot flashes by **35%**,
- Night sweats by **25%**,
- Depressive mood by **43%**,
- Sleep problems by **30%**,
- Vaginal dryness by **11%**, and
- Leg joint and muscle discomfort by **37%**.

This article describes clinical data supporting these impressive findings.

How Menopause Harms Health

Menopause officially starts when a woman has gone 12 months without menstruating.

Symptoms usually begin when a woman is in her 40s as a result of reduced production of the hormones **estrogen** and **progesterone**.

Worldwide, about **57%** of women experience unpleasant menopausal symptoms such as **night sweats** and **hot flashes**.⁶

Declining estrogen can also lead to **psychological symptoms** like mood swings, anxiety, and **depression**, along with **vaginal dryness** and discomfort that makes intimacy painful.⁷

Low estrogen levels can also adversely affect women's **long-term health**.

For example, loss of estrogen contributes to **brain aging**, slowing synaptic connections in the brain and impairing neuroplasticity. This makes it difficult for women to learn new things and to recall skills and memories formed earlier in life.^{8,9}

Estrogen has a protective effect on **cardiovascular health** by maintaining the flexibility of blood vessels, reducing inflammation, and regulating cholesterol levels.

During menopause, the decline in estrogen can lead to loss of blood vessel elasticity, plaque development, and increased inflammation, increasing risk of **cardiovascular disease**.^{10,11}

Raising estrogen levels can help reduce these risks and ease symptoms of menopause.

How Fenugreek Helps

The herb **fenugreek** has long been used in Indian Ayurvedic and Persian traditional medicine to relieve menstrual cramps, enhance libido, and alleviate menopausal symptoms.^{4,12}

In **India**, fenugreek is consumed throughout a woman's life cycle, from adolescence to post-menopause. Fenugreek tea is used during puberty to ease menstrual cramps and following childbirth to promote lactation and uterine recovery.¹²

As women enter **perimenopause** and **menopause**, research shows that fenugreek can help them achieve hormonal balance and reduce the risk of conditions associated with low estrogen.

Fenugreek's bioactive compounds (**protodioscin** and **trigonelline**) help correct hormonal imbalance in two separate ways:

- Promoting production of **estrogen** and other sex hormones. The compound **protodioscin** is converted in the body to the hormone DHEA, a precursor of estrogen and other sex hormones. This enhances the body's production of hormones lost to menopause.¹³
- Providing **phytoestrogens**, plant compounds similar to estrogen. **Trigonelline** is a plant hormone that can bind to estrogen receptors on cells, mimicking the effects of estrogen to help offset the estrogen decline during menopause.¹⁴



A standardized extract of **fenugreek** containing **10% protodioscin** and **3% trigonelline** has demonstrated benefits for **menopause** symptoms in **clinical trials**.³

This standardized fenugreek extract is not the same as fenugreek **seed fiber** used to increase the **bio-availability** of certain nutrients into the bloodstream.^{15,16}

Effects In Human Trials

Several randomized, placebo-controlled trials have confirmed the ability of **fenugreek** to relieve **menopause symptoms** and restore healthy **hormone balance**.¹⁻⁵

In one study, **postmenopausal** women aged 45-58 years old receiving **500 mg of fenugreek seed extract** daily for 42 days had beneficial boosts in **hormones** compared to baseline, including:³

- A **31.6%** increase in **estradiol**, the active form of **estrogen** that binds to receptors and has the strongest effect throughout the body.
- A beneficial **20.4%** decline in **follicle-stimulating hormone (FSH)**. Elevated FSH is a hallmark of menopause that results from **estrogen deficiency**.³

These hormonal improvements translated into symptom relief. Compared to baseline, women reported a striking **35.5%** total score reduction on the **Menopause Rating Scale (MRS)**, a clinically validated questionnaire used to measure severity of menopause symptoms.

Compared to placebo, among the other benefits in the treatment group were:³

- Hot flashes decreased by **35%**,
- Night sweats declined by **25%**,
- Depressive mood improved by **43%**,
- Sleep problems were reduced by **30%**,
- Vaginal dryness lessened by **11%**, and
- Leg joint and muscle discomfort decreased by **37%**.

The decrease in total MRS score greatly surpassed the threshold for clinically meaningful change, emphasizing the effectiveness of the fenugreek extract.³



WHAT
YOU
NEED
TO
KNOW

Boosting Estrogen for Better Health

- As women go through **menopause**, hormonal changes can trigger unpleasant physical and emotional symptoms. In addition, the drop in estrogen poses risks to cognitive and cardiovascular health.
- A standardized **fenugreek seed extract** has been clinically shown to increase active estrogen levels, restoring a healthy hormonal balance.
- Clinical trials show that this fenugreek extract significantly reduces **menopause symptoms**, including hot flashes, night sweats, depressive mood, sleep problems, vaginal dryness, and leg joint discomfort.

Another study of postmenopausal women found similar results. Participants taking **500 mg of fenugreek** extract daily (as **250 mg** twice daily) for 42 days experienced:¹

- A **46.2%** decrease in **Menopause Rating Scale** scores assessing the severity of menopause symptoms,
- Reductions in **psychological** symptoms (mood swings, anxiety, and depression), **sensory** symptoms (hot flashes and night sweats), and **physical** symptoms (joint pain and sleep disturbances), and
- A remarkable **39.8%** increase in **estradiol** (active estrogen) levels and **21.2%** increase in progesterone levels.

Overall, **76%** of the **fenugreek** extract group reported a substantial improvement within just two weeks of supplementation.

Along with the potential long-term health benefits of raising estrogen levels, reducing menopause symptoms can vastly improve the lives of women in their 40s, 50s, and beyond.

Summary

As women go through perimenopause and menopause, declines in levels of **estrogen** lead to an array of **menopausal symptoms**.

Clinical trials show that taking a standardized **fenugreek seed extract** safely restores a healthy **hormone balance** and significantly reduces those symptoms, including hot flashes, night sweats, depression, sleep issues, vaginal dryness, and joint discomfort. •

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SUPER

K

A Healthy Kick for Your Heart & Bones

Just one daily softgel of
Super K provides:

Vitamin K1	1,500 mcg
Vitamin K2 (MK-4)	1,000 mcg
Vitamin K2 (trans MK-7)	100 mcg

CAUTION: If you are taking a vitamin K antagonist (e.g. warfarin), consult your healthcare practitioner before taking a vitamin K supplement.

Item #02334
90 softgels

Each bottle lasts for
three months.



GLUTEN
FREE

1
DAILY

NON
GMO
LE CERTIFIED

This product is available at fine health food stores everywhere.

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"Good stuff!"

Steven

VERIFIED CUSTOMER
REVIEW

A Bodyguard for Your Brain

People tend to live longer in areas where lithium is abundant in the drinking water.*

Lithium is a low-cost mineral that functions in several ways to support cognition and overall brain health.

Protect healthy cognition with lithium—it's like a bodyguard for your brain!

This product is available at fine health food stores everywhere.



(1,000 mcg of lithium per tiny cap)

Item #02403

100 vegetarian capsules

Each bottle lasts 100 days.



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

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.

THiNK ZiNC

FOR IMMUNE HEALTH

You know zinc is good for you—
but are you getting enough?

Zinc promotes critical **immune** functions
and healthy **bones**.

This formula provides **50 mg** of zinc in a
convenient, vegetarian capsule.



Item #01813

50 mg

90 vegetarian capsules



Caution: Supplemental zinc can inhibit the absorption and availability of copper. If more than 50 mg of supplemental zinc is to be taken daily for more than four weeks, 2 mg of supplemental copper should also be taken to prevent copper deficiency.

This product is available at fine health food stores everywhere.

OptiZinc® is a Lonza trademark, registered in the USA.

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Feel like a Kid Again



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

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

NAD⁺ Cell Regenerator™ formulas help maintain *healthy* levels of NAD⁺.

NAD⁺ Cell Regenerator™ and Resveratrol Elite™

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

Item #02348 • 30 veg. caps.

NAD⁺ Cell Regenerator™

300 mg of nicotinamide riboside per capsule.

Item #02344 • 30 veg. caps.



NIAGEN® is a registered trademark of ChromaDex, Inc., Patents see: www.ChromaDexPatents.com
NAD⁺ Cell Regenerator™ has met ConsumerLab.com standards for ingredient and product quality for Nicotinamide Riboside in independent testing. More information at www.consumerlab.com.



These products are available at fine health food stores everywhere.

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hormone harmony

Estrogen Balance Elite contains a proprietary seed extract of the herb **fenugreek** to promote healthy hormonal balance.

In clinical studies, fenugreek seed extract has been shown to provide relief for **menopause discomforts**, including:*

- ✓ Hot flashes ✓ Night sweats
- ✓ Mood ✓ Sleep disturbances
- ✓ Vaginal dryness
- ✓ Leg joint and muscle discomfort

This **plant-based** product also includes **Red Clover**, **Chaste Tree**, and **Black Cohosh** for women's health during menopause.

Item #02534

60 vegetarian tablets

This product is intended to promote estrogen but does not contain estrogen

CAUTION: Consult with your healthcare practitioner if you have, or have a history of, estrogen-dependent tumors.

* PharmaNutrition 2020;14:100209.

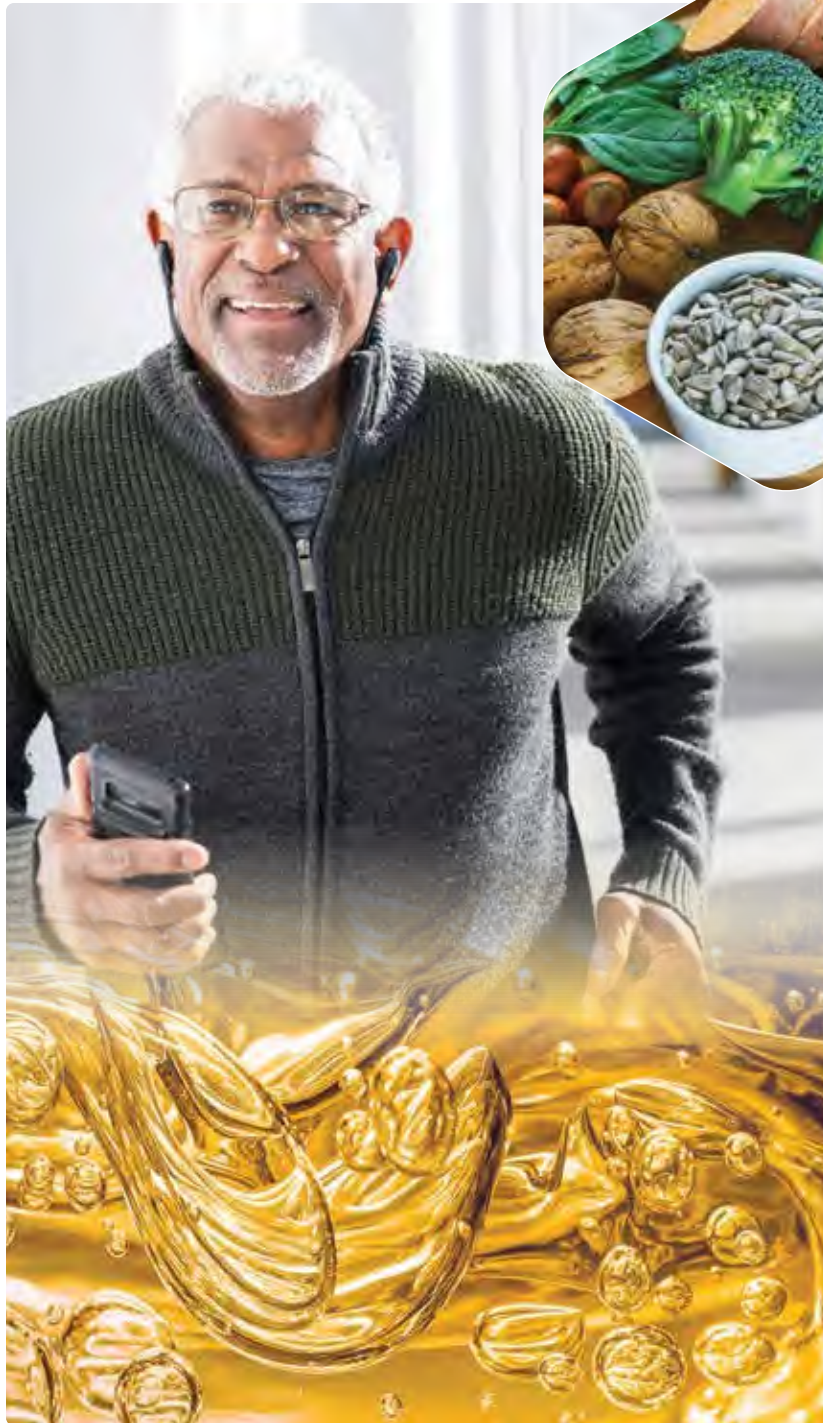


This product is available at fine health food stores everywhere.

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What are Tocotrienols?

BY LAURIE MATHENA



Tocotrienols are one of two primary forms of **vitamin E**.¹

They play key roles in fighting oxidation,^{2,3} modulating immune function,⁴ combatting skin aging,⁴ and more.

While **tocopherols** are the well-known form of vitamin E, research has shown that **tocotrienols** carry greater antioxidant potential.⁵

Research further indicates that **tocotrienols** can help combat aging by blocking DNA damage,^{4,6} and they promote healthy aging by supporting immune functions,^{7,8} and improving cholesterol values^{9,10} and bone biomarkers.³

Five Effects of Tocotrienols

Tocotrienols come in four varieties: alpha-tocotrienol, beta-tocotrienol, gamma-tocotrienol, and delta-tocotrienol.¹¹

These tocotrienol forms of vitamin E provide a variety of anti-aging and health-supporting effects.

Below are five benefits, as demonstrated primarily in **human** studies:

1. Tocotrienols may protect against DNA damage.

A clinical trial in elderly people has suggested a beneficial effect of tocotrienols against DNA damage,⁶ which is an underlying factor in many aging processes.

In this human study, 64 elderly participants were randomized to receive either a **160 mg** tocotrienol supplement or a **placebo**, daily for six months. At the end of six months researchers found total DNA damage decreased significantly among the **tocotrienols** group compared to the **placebo**.

The ability to reduce DNA damage was likely due to antioxidant and signaling properties of tocotrienols either **lowering DNA damage** or improving repair.⁶

2. Tocotrienols could reduce the risk of cardiovascular disease in those with poor kidney function.

Elevated triglycerides and low levels of HDL (good) cholesterol are risk factors for cardiovascular disease.¹² In one study, tocotrienols were shown to help improve levels of both factors in patients with advanced kidney disease.

In patients undergoing dialysis for **kidney failure**, supplementation with a combination vitamin E supplement

containing tocotrienols (**180 mg**) and tocopherols (**40 mg**) resulted in a drop in triglyceride levels of **33 mg/dL** after 12 weeks and **36 mg/dL** after 16 weeks. Levels of HDL (“good”) cholesterol also increased.⁷

3. Tocotrienols could improve bone health.

A systematic review of preclinical studies suggested that tocotrienols could be useful in conditions characterized by excessive bone loss.¹⁰

In a separate study, a placebo-controlled clinical trial, the impact of supplementing with tocotrienols was evaluated in 89 postmenopausal women with **osteopenia** (a decrease in bone density that is less severe than osteoporosis). Results were measured in terms of biomarkers of bone metabolism in blood and urine.

Participants were randomized into three groups to receive daily:

- Placebo
- Low dose tocotrienols **430 mg**
- High dose tocotrienols **860 mg**

Blood and urine samples were collected at the beginning of the study and after 6 and 12 weeks. After 12 weeks, supplementation decreased markers of bone resorption (the breakdown of bone) and improved markers of bone turnover rate (the replacement of **new bone**) compared to placebo. The high and low doses appeared to be equally effective at improving the status of the bone biomarkers.⁹

4. Tocotrienols may help manage metabolic health.

In individuals with pre-diabetes, supplementation with **delta-tocotrienol (300 mg)** for 12 weeks led to significantly greater reductions in fasting plasma glucose, glycosylated hemoglobin A1C, insulin, and HOMA-IR (an indicator of insulin resistance and pancreatic beta cell function), compared to placebo.¹³

The researchers concluded that *supplementation with delta-tocotrienol significantly improves glycemic control in pre-diabetics.*



And in type II diabetics who were using anti-diabetic drugs, taking **250 mg** of delta-tocotrienol once daily for six months led to improvements in markers of glycemic control, inflammation, oxidative stress, and miRNA expression.¹⁴

5. Tocotrienols can help modulate immune response.

Rheumatoid arthritis (RA) is an autoimmune disease that attacks joints. In RA, the immune system attacks healthy tissue, causing inflammation and damage, leading to pain and tissue destruction in joints.

Cell studies have shown that tocotrienols help mitigate the bone-destructive processes that contribute to rheumatoid arthritis by decreasing the production of proteins involved in excess osteoclast activation.

Tocotrienols also decreased the differentiation of pro-inflammatory cells, called **Th17 cells**.² Th17 cells have been implicated in the development of many autoimmune diseases and inflammation.¹⁵

A different type of immune dysfunction can happen when an aging immune system has a weak response to a vaccine, resulting in diminished stimulation of immunity, and thus less protection from the immunization.

In one placebo-controlled clinical trial, participants were randomly assigned to receive supplementation with **400 mg** of mixed tocotrienols and tocopherols daily for two months or placebo, to evaluate the effects of the supplement on immune response. Participants' blood samples were evaluated at the beginning of the study and on days 28 and 56. They received the tetanus vaccine on day 28. The supplemented group showed a significantly **enhanced** production of **immune cells** and proteins compared with the **placebo** group.¹⁶

By bolstering the immune system, these forms of vitamin E may potentially enhance immune response to vaccines, improving their efficacy.

Summary

As potent antioxidants, tocotrienols have benefits throughout the entire body.

Studies show that **tocotrienols** support **DNA repair**.

In human studies, tocotrienols have demonstrated benefits in the areas of heart disease risk factors, immune regulation, metabolic health, and biomarkers of bone health. •

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L-ergothioneine may support healthy aging by:

- Protecting **mitochondrial DNA** function¹
- Helping to maintain **telomere** length²
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One daily capsule provides as much **L-ergothioneine** as up to 2 to 5 cups of white button mushrooms.^{4,5}



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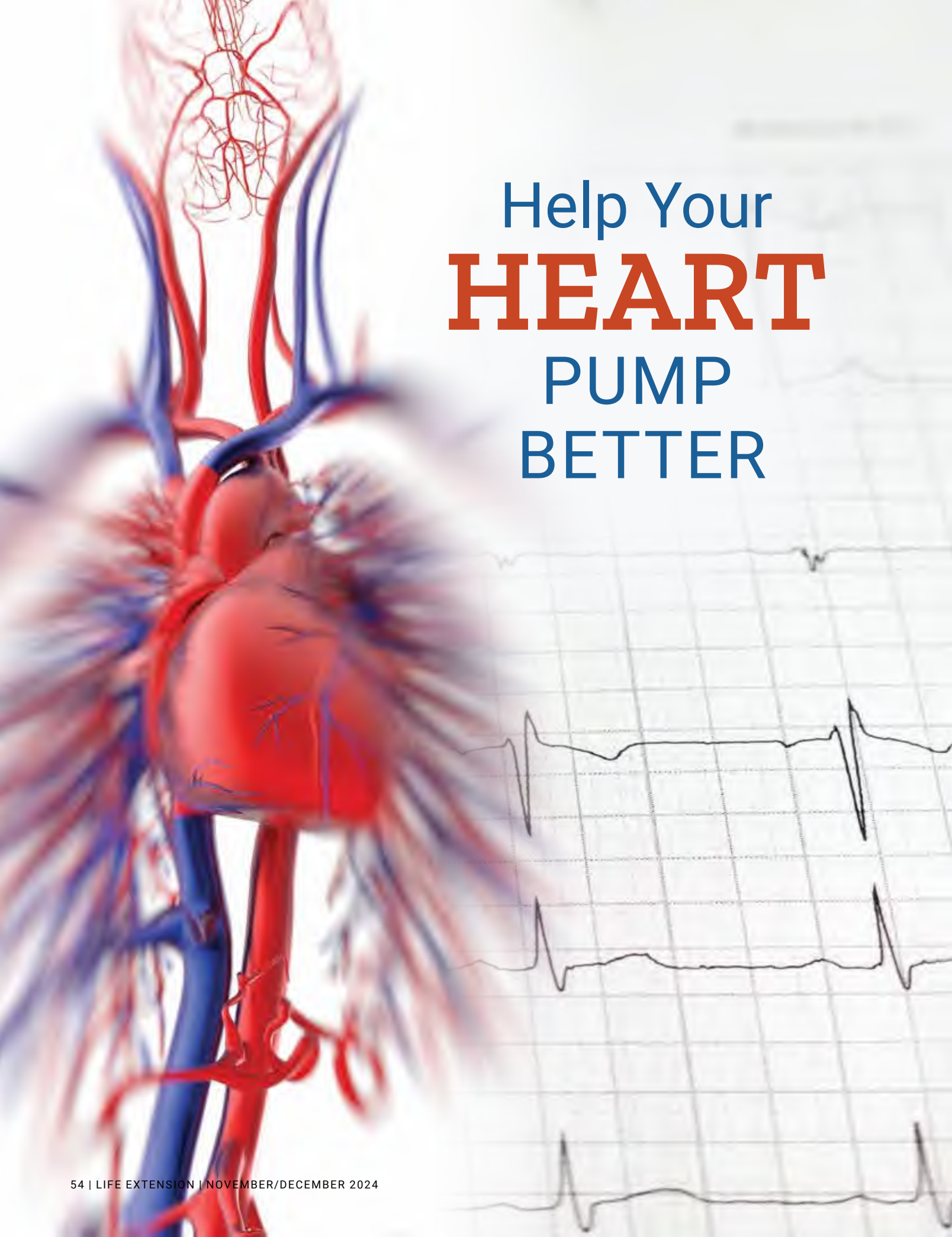
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Help Your **HEART** PUMP BETTER



BY MICHAEL DOWNEY

Over time, our **heart** muscles *weaken*.

Age-related degenerative changes are often major culprits.¹

These changes may result in *reduced* efficiency of the heart to pump blood, which *reduces* the amount of oxygen that is pumped to the rest of our body. This often becomes symptomatic during periods of exertion or stress.¹⁻³

Weaker pumping of the left ventricle over time may result in debilitating **cardio-vascular disease** and even **cardiac failure**.⁴

For centuries, the **arjuna** plant has been used in Indian Ayurvedic medicine to treat heart disorders and other diseases.⁵

Modern research has found that **arjuna** supports **cardiac function** by strengthening the heart muscle's "squeeze," increasing the volume of blood it can pump with each heartbeat.^{6,7}

Clinical trials show that a specific **arjuna bark extract** *boosts* the left ventricle's pumping output, supporting cardiac endurance and decreasing **physical fatigue** by a clinically significant average of **23%**.^{6,7}



ARJUNA BARK



Measuring Cardiac Pumping Power

The **ejection fraction** test measures how effectively one's heart pumps blood during each heartbeat.

Testing **left ventricular ejection fraction** enables doctors to assess how effectively one's heart pumps blood out of the left ventricle. The **left ventricle** is the heart chamber that directly pushes oxygen-rich blood to the rest of the body.⁸

In a healthy heart, the **left ventricular ejection fraction** is usually **50% to 70%**.⁸ A lower number indicates the heart is having trouble keeping up with your body's needs, especially under exertion. A left ventricular ejection fraction **below 50%** can indicate left-sided heart dysfunction.⁸

Left ventricular ejection fraction generally declines with **age**, though healthy eating, exercise, and reducing stress can help inhibit this decline.^{3,4,9}

In recent years, an extract of the **arjuna tree** has been clinically shown to increase left ventricular **ejection fraction** and improve cardiac output.

What Your Left Ventricular Ejection Fraction Means

Ejection fraction refers to the percentage of blood that is pumped out of the ventricles with each heartbeat.

It is a key measure used to assess how well the heart is functioning, particularly the left ventricle.

A physician can help interpret the implications of your **left ventricular ejection fraction**, or **LVEF**, number. But here is a general guideline:¹⁴

- LVEF **above 70%** - Hyperdynamic (a possible sign of a heart condition)
- LVEF **50% to 70%** - Normal
- LVEF **40% to 49%** - Mild dysfunction
- LVEF **30% to 39%** - Moderate dysfunction
- LVEF **below 30%** - Severe dysfunction

* LVEF **below 30%** may indicate heart failure.

Arjuna Bark

Parts of the **arjuna** tree, which grows widely on the Indian subcontinent, have long been studied for medicinal properties.

In pre-clinical studies, **bioactive** compounds found in **arjuna** were shown to be:¹⁰

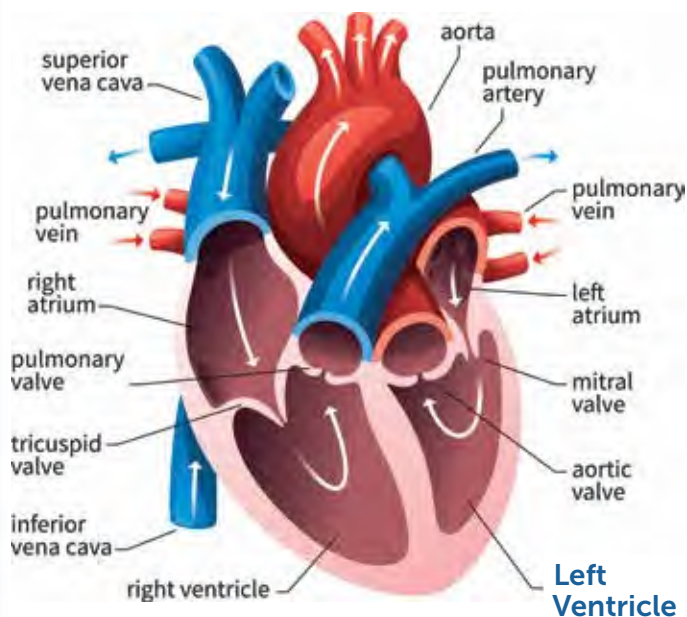
- Anti-inflammatory,
- Antioxidative,
- Anti-atherosclerotic,
- Cardioprotective, and
- Anti-tumor.

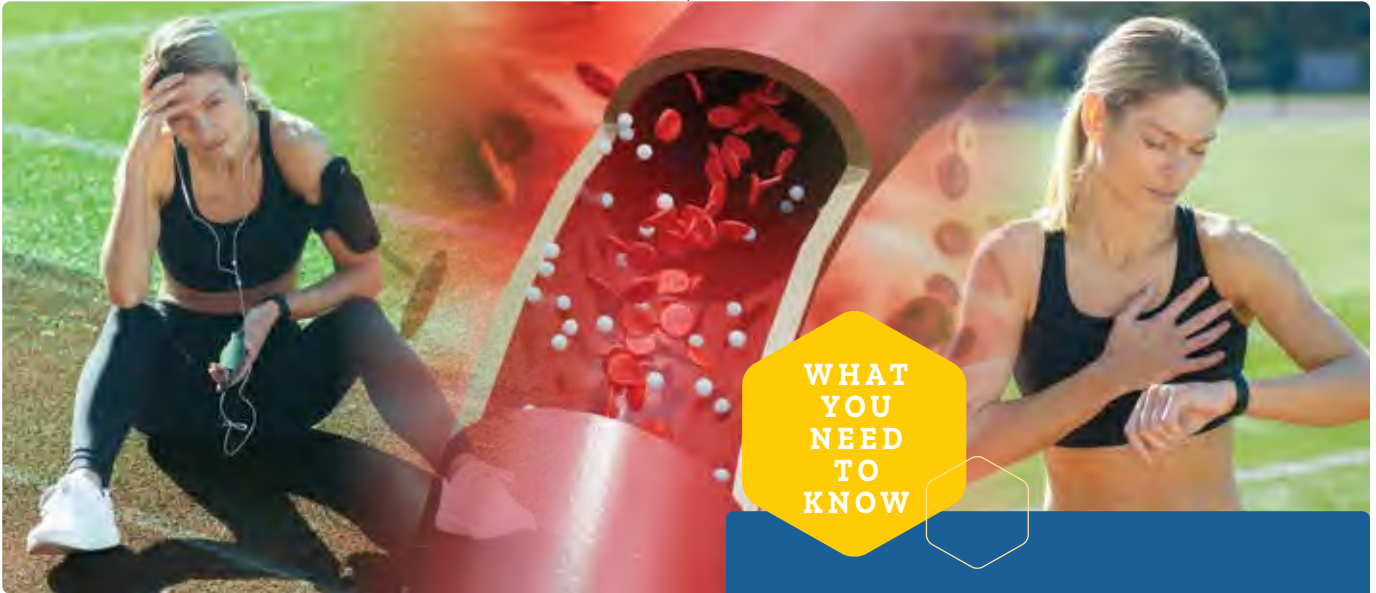
Compared to the fruit, seed, leaf, and root of the tree, **arjuna bark** has a substantially *higher* concentration of **flavonols** (quercetin, myricetin, and kaempferol), **flavanole** (catechin), and **phenolic acids** (gallic acid, p-coumaric acid, and ferulic acid).¹⁰

These compounds appear to have the ability to *increase* the force of the heart's muscular contractions.^{6,7} This improves pumping, increases **cardiac output**, and reduces physical **fatigue**.^{6,7}

Two randomized, controlled clinical studies have confirmed these benefits in an **arjuna bark** extract standardized to provide **30% polyphenols** and **15% glycosides**.^{6,7}

Anatomy of the Human Heart





Better Pumping, Less Fatigue

In one study, researchers enlisted 72 male and female volunteers between the ages of 30–70 years, sedentary, and overweight. They had left ventricular **ejection fraction** ratios (assessed using a type of echocardiogram) ranging from **48% to 60%**,⁶ which are mildly reduced to normal.

One group took **400 mg of arjuna extract** daily for eight weeks, while another took a **placebo**. Both groups maintained normal dietary and exercise regimens.⁶

Those who took the arjuna *increased* their left ventricular **ejection fraction** by a clinically significant **3.6 percentage points**, improving their cardiac endurance.⁶

Research shows that even modest changes in left ventricular ejection fraction may be clinically important in determining the risk of future **mortality**.^{11,12}

Physical fatigue levels were also evaluated, using a standard questionnaire that measures fatigue severity and how it affects activities and lifestyle.

Those who took the **arjuna extract** reported clinically significant improvement in fatigue scores¹³ with an average of **23% improvement**, compared to less than **10%** in the **placebo** group.⁶

Arjuna extract provided a **decrease** in fatigue's interference in:⁶

- Physical functioning,
- Sustained physical functioning, and
- Performance of duties and responsibilities.

WHAT YOU NEED TO KNOW

Support Healthy Heart Function

- With age, the heart's **left ventricle** loses its ability to effectively pump oxygen-rich blood to the body. Over time this may lead to cardiovascular disease/cardiac failure.
- A standardized extract of **arjuna** tree bark has been shown to increase the **left ventricular ejection fraction**, a measure of how much blood the heart can pump out of the left ventricle with each heartbeat.
- In a clinical study, **arjuna extract** increased left ventricular ejection fraction by a clinically meaningful **3.6%** in participants in the mildly reduced to normal ranges. Their fatigue scores decreased by a clinically significant **23%**.
- A similar improvement in **left ventricular ejection fraction** was demonstrated in a clinical trial of active young men with LVEF numbers well into the healthy range, showing that **arjuna** improved cardiac output in a wide range of subjects.

Effects in Healthy Adults

Scientists also tested **arjuna** extract's effect on the heart's pumping capability in **active** adults with a **healthy** left ventricular ejection fraction.

Researchers enlisted 31 healthy, endurance-exercising men, aged **18-40** years. Their left ventricular ejection fraction scores ranged from **55% to 70%**.⁷

All volunteers' left ventricular ejection fraction and fatigue levels were assessed after physical exertion on a treadmill.

After eight weeks, participants who took the **arjuna extract** had improved their *already* healthy left ventricular **ejection fraction** by a clinically significant **3.7** percentage points.⁷

This shows that this extract may benefit individuals whether their left ventricular ejection fraction is mildly **reduced or healthy**.

Researchers also used a scale measuring subjects' perceived exertion to assess physical fatigue. Those taking arjuna had statistically significant *increase* in **time-to-exhaustion** score, and their perceived level of **exertion** was significantly *reduced*.⁷

No serious adverse events were reported in either study.^{6,7}

Arjuna extract can help maintain a strong, healthy heart and decrease physical fatigue by increasing cardiac output.

Research suggests that **arjuna** extract may have potential to improve **ejection fraction** in patients with **heart failure**.^{6,7} While preliminary studies are promising, more extensive clinical trials are needed to confirm these effects in heart failure patients who must rely on cocktails of drugs and nutrients to maintain barely sufficient cardiac output.

Summary

Over time, the heart's **left ventricle** tends to pump less oxygen-rich blood to your body.

This can eventually lead to **cardiovascular disease/ cardiac failure**.

Clinical studies show that **arjuna bark** extract increases the **left ventricular ejection fraction**, a measure of the amount of blood the heart can pump out of the left ventricle with each heartbeat.

This ability to support healthy heart function was seen in individuals with mildly **reduced and healthy** left ventricular ejection fractions. Both groups also had a significant decrease in **fatigue** levels. ●



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Transcatheter aortic valve implant

Aortic Stenosis and Transcatheter Aortic Valve Replacement (TAVR)

Aortic stenosis is a common disorder seen in adults 65 years and older. It involves scarring and calcification of the **aortic valve**.¹⁵

When working normally, the **aortic valve** helps ensure that blood flows in only one direction, blocking backward flow into the heart's left ventricle.¹⁶

But with age, heart valves can become diseased. The pathology reflects cardiac valve dysfunction, where calcium and scar tissue build-up impedes valve functionality, such as in **aortic valve stenosis**, which can also be genetic in origin.¹⁵ This makes the valve stiff and difficult to open.

Stenosis of the aortic valve puts a large stress on the heart and impairs its ability to function. Because the main output pathway from the heart is partially blocked, the heart muscles must work harder to get adequate blood supply to the entire body.¹⁵

Over time, as aortic stenosis worsens, it can significantly impair the **cardiac output**, becoming symptomatic. Symptoms such as shortness of breath, chest pain, and fainting can occur with physical exertion. As the stenosis gets worse, the heart can eventually fail to generate enough blood flow and **heart failure** develops.

Traditionally, the only option to correct aortic stenosis has been open heart surgery to replace the valve.¹⁵ Although this procedure can reverse aortic stenosis and take stress off the heart, it cannot be tolerated by all patients, especially the elderly.

Open heart surgery typically has long hospitalization and recovery times. Patients with severe disease or other age-related conditions may be poor candidates for open heart surgery. The stress of these procedures and long anesthesia times increase the risk of complications and poor outcomes.

Fortunately for people suffering from aortic stenosis, there is now another option.

Transcatheter aortic valve replacement (TAVR) is an alternative treatment in many cases. It is an effective and less invasive endovascular procedure—meaning that it does not require the chest to be opened and it is done almost entirely through catheters in the blood vessels with x-ray guidance.¹⁷

The advantages of this technology are that it is much less traumatic than open heart surgery and the resulting hospitalization and recovery times are significantly reduced compared to open heart surgery.

TAVR may not be indicated for all patients, depending on various details of their condition and general health. Furthermore, while generally less traumatic than open heart surgery, **TAVR** is not without its own risks. As with surgical valve replacement, complications such as bleeding, stroke, and others can occur in some cases, as well as death.

However, a recent trial that randomized patients with aortic stenosis to **TAVR** versus surgery found that outcomes were largely comparable. Most notably, the occurrence of poor outcomes (death, stroke, rehospitalization related to the procedure, and heart failure) was not significantly different between the two options.¹⁸ Therefore, this **TAVR** may be an option for a growing subset of patients suffering from symptomatic **aortic stenosis** who wish to avoid surgery or for whom open heart surgery is too risky.



Aortic Valve Replacement Surgery

DIGESTIVE UPSETS?

RELIEF
from
**After-Meal
Bloating**

Bloat Relief helps relieve occasional discomfort, such as gas and **bloating** following a meal.

Scientists have combined four **plant extracts** that target **underlying causes** of gastrointestinal discomforts:

- **Ginger root**
- **Artichoke leaf**
- **Fennel seed oil**
- **Curcumin**

For maximum benefit, take **one** softgel **twice daily** before your heaviest meals.



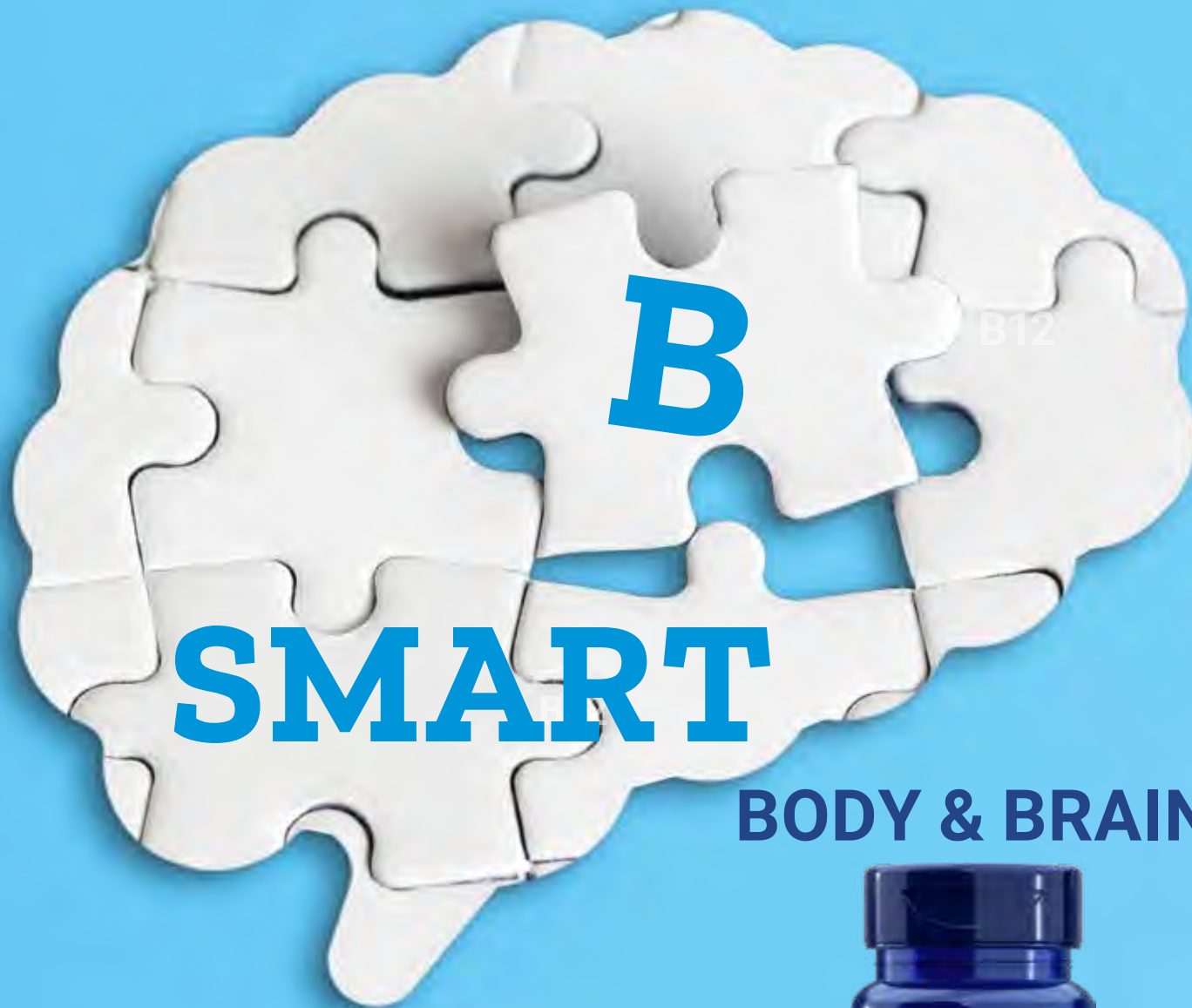
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Banish Bloat and INDIGESTION





BY GREGORY E. BIGFORD, PHD, MSBA

A large survey found that nearly one in seven Americans has experienced feelings of trapped gas in the gut, excessive fullness, abdominal pressure, and pain.¹

Bloating is often associated with other gut disorders such as **dyspepsia** (indigestion), celiac disease, and constipation.¹

Over-the-counter and prescription medications don't always help, and all too often provide only minor relief.

Four plant-based compounds have been shown to ease bloating and occasional digestive discomfort.

In a clinical trial, a combination of **fennel** and **curcumin** relieved symptoms of irritable bowel syndrome by **50%** compared to baseline and stopped *all* symptoms in **26%** of users after 30 days.²

In another trial, **63%** of those taking an **artichoke-ginger** blend had significant reductions in bloating, nausea, abdominal pain, and other symptoms of indigestion after four weeks.³



Fennel-Curcumin Relieves Bloating and Pain

Seeds of the **fennel** plant, known for its licorice flavor, have long been consumed after meals to promote digestion and prevent gas.⁴

Fennel seed oil has antimicrobial, antifungal, anti-inflammatory, and antispasmodic (relieving involuntary muscle spasm) properties.^{2,4,5} These actions may help get rid of bacteria that can cause gassiness and help encourage healthy gastrointestinal muscle activity to relieve bloating.

Curcumin, a compound found in the spice turmeric, promotes the gall bladder to release bile into the intestines to help in the management of bile flow and aid digestion.⁶⁻⁸ Curcumin's anti-inflammatory properties^{9,10} may further relieve digestive symptoms by lowering gut **inflammation**.^{11,12}

In a randomized controlled clinical trial, researchers treated adults with **irritable bowel syndrome** with a twice-daily combination of **25 mg of fennel seed oil** and a low **42 mg** dose of **curcumin**.²

After 30 days, those who took the fennel-curcumin blend had a **48%** average reduction in irritable bowel syndrome symptoms, including **bloating** and **abdominal pain**. That was nearly *double* the decrease seen in a placebo group.



Even more remarkable, **26%** of those taking fennel-curcumin were **completely symptom-free** after 30 days, compared to close to **7%** of placebo recipients.²

The treated group reported a significant enhancement in **quality of life**, and no adverse effects.

Artichoke-Ginger Eases Indigestion

Artichoke improves gut **motility** and increases **bile** production, which speeds up digestion and aids in fat breakdown and vitamin absorption.^{13,14}

In a clinical trial, artichoke extract significantly alleviated symptoms of **functional dyspepsia** (recurring and unexplained indigestion), including fullness, gassiness, and bloating.¹⁵

Ginger may help relieve gastrointestinal disorders by reducing oxidative stress and inflammation in the digestive tract.^{16,17} Ginger also enhances digestive function by promoting **gastric motility**.¹⁸

In another randomized controlled trial, scientists gave adults with functional dyspepsia a twice daily combination of **20 mg of ginger root extract** and **100 mg of artichoke leaf extract**. After four weeks, **63%** of those who received this combination had a marked reduction in digestive symptoms, including bloating, fullness, nausea, and upper abdominal pain, compared to just **25%** of those in the placebo group.³



WHAT
YOU
NEED
TO
KNOW

An additional study confirmed that an **artichoke-ginger** blend promotes **gastric emptying**, the movement of food from the stomach to the small intestine, which can relieve indigestion and nausea.¹⁹

Summary

Post-meal **bloating** can make people miserable and have a serious impact on quality of life.

The plant compounds **fennel**, **curcumin**, **artichoke**, and **ginger** have clinically demonstrated effectiveness in reducing symptoms like bloating, gas, nausea, and abdominal pain.

In clinical studies, a **fennel-curcumin** combination reduced **irritable bowel syndrome** symptoms by **50%** compared to baseline and stopped them entirely in **26%** of users at 30 days. An artichoke-ginger blend reduced digestive symptoms including bloating, nausea, and abdominal pain in **63%** of those taking it.

A combination of all four compounds may maximize relief for bloating and other gastrointestinal problems. •

Relief for Uncomfortable Bloating

- Post-meal **bloating**, the feeling of excessive fullness, abdominal pressure and pain, and gassiness, was found, in one large study, to have affected nearly **one in seven** Americans in the seven days before the survey.
- **Fennel**, **curcumin**, **artichoke**, and **ginger** help relieve bloating and digestive issues.
- In a clinical study, a **fennel seed oil-curcumin** combination led to a **50%** reduction in IBS symptoms compared to baseline, including bloating and abdominal pain, and a *complete* end to all symptoms in **26%** of users after 30 days.
- Another clinical study shows that a blend of **ginger root** and **artichoke leaf** extracts relieved symptoms of indigestion, including bloating, fullness, nausea, and upper abdominal pain in **63%** of those who received the extracts after four weeks.

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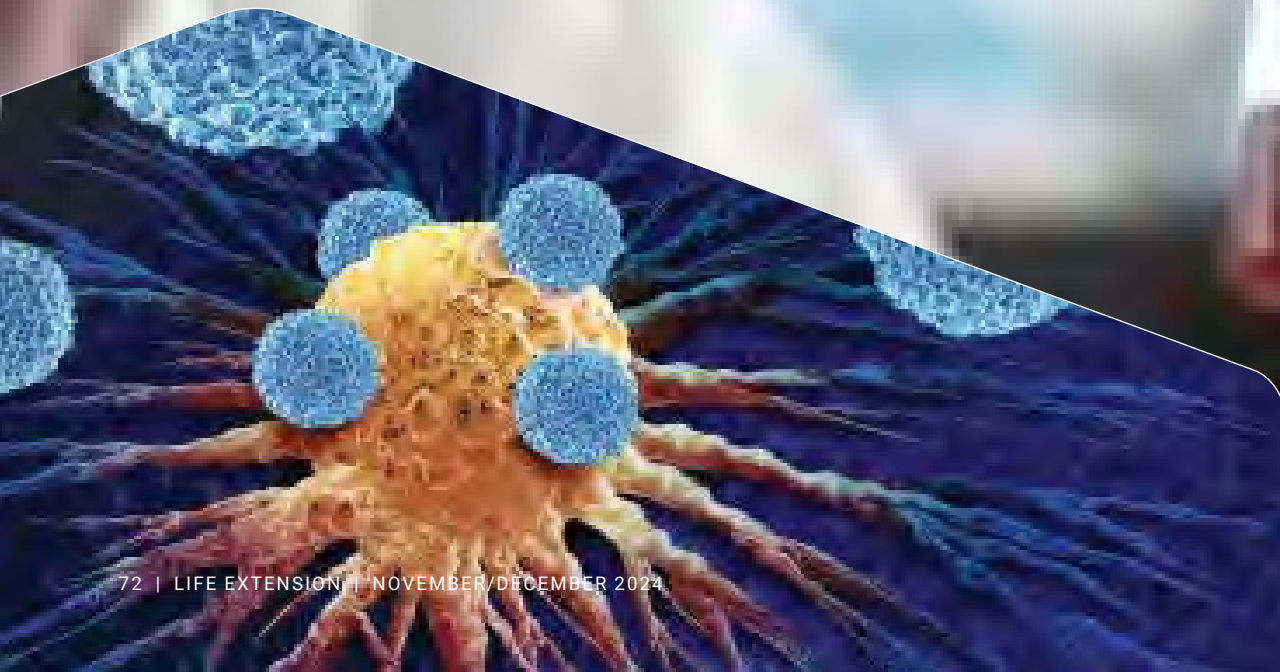


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MELATONIN:

Potential Anti-Cancer Effects





BY RANDALL THOMPSON

The hormone **melatonin** has long been used to help improve sleep.¹

But its effects go much further.

Scientists have found that taking **oral melatonin** may influence many physiological processes that could potentially provide **anti-cancer** benefits.²⁻⁵

Oral melatonin has been shown in clinical studies to reduce side effect severity when taken along with conventional cancer treatments.^{2,5-7}

Even more impressively, in multiple studies of **cancer** patients, adding melatonin to standard treatment improved **tumor regression** and **survival** rates.

Too Much Light!

When we are exposed to regular light and dark cycles, our bodies produce and release the hormone **melatonin** mostly at night in the dark.^{2,4}

Melatonin helps induce and control **sleep**. But it determines much more than just sleep/wake cycles: It affects hormone levels, immune function, inflammation, reproduction, and cell protection^{4,8} One of its important roles is DNA protection and repair.^{3,9}

These days, many people get too much **artificial light** exposure in the evenings, whether from overnight work shifts, late night television watching, or staying up looking at phones, tablets, or computer screens.

This *disrupts* the natural light and dark cycle and can cause **melatonin** levels to plunge.¹⁰ To make matters worse, melatonin secretion also tends to diminish with **older age**.¹¹

Disruption of this natural cycle and of melatonin secretion has negative effects throughout the body. Research has shown that taking **oral melatonin** at night may help mitigate these problems, aiding sleep and activating the hormone's other vital functions.



Anti-Cancer Actions

Preclinical data have shown that melatonin can regulate different physiological pathways in the body that can help protect against **cancer**. These include inhibition of **tumor cell growth**, promotion of **immune cell response**, and enhanced **apoptosis** (normal cell death).¹²

Three pathways involved in these effects include:

1. **Signaling Pathways.** In preclinical studies melatonin has been shown to inhibit malignant transformation of healthy cells by downregulating growth factors, suppressing tumor progression, and initiating apoptosis.² Studies on breast cancer cells and animals have reported melatonin combined with chemotherapy treatment showed improved **apoptotic** effects compared to melatonin alone.⁸

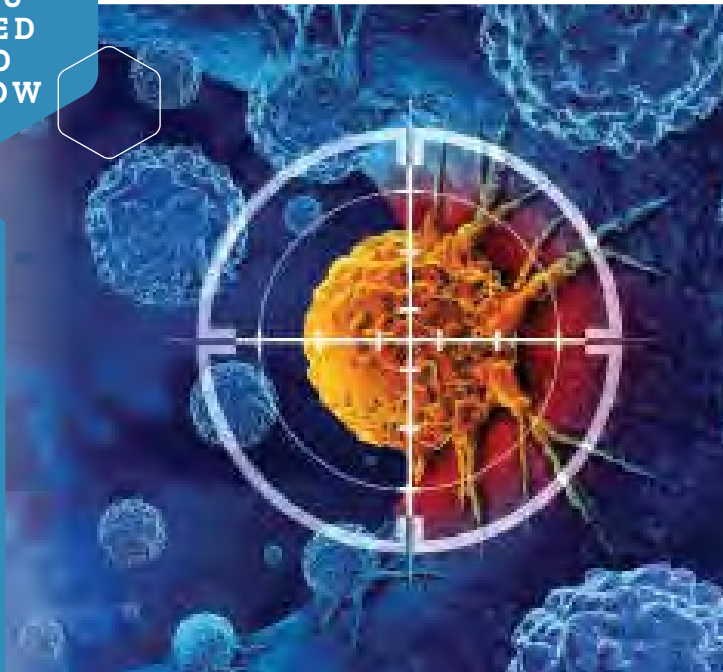
2. **Supporting healthy immune function.** Preclinical studies have shown that melatonin plays an instrumental role in modulating immunity, which suggests potential as an adjuvant against certain viral and bacterial infections.¹³⁻¹⁵ Modulation of immune response has potential to enhance the effectiveness of anti-tumor therapy and ease normal tissue toxicity.¹⁶ This immune-modulating property of melatonin may also help the immune system identify and target cancerous and precancerous cells, meaning it might be able to impede the growth of cancerous cells and reduce tumor size.^{8,16}

3. **Oxidative stress.** Oxidative stress can cause DNA damage, increasing the risk of cancer. The antioxidant activity of melatonin is a protective mechanism that might reduce cancer risk and progression.^{2,9}

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NEED
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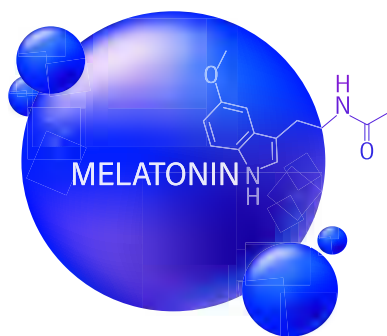
Help Fighting Cancer

- Best known for helping to promote quality sleep, the hormone melatonin has wide-ranging effects on cells throughout the body. In preclinical settings it has also shown **anti-cancer** activity.
- In observational studies, lower levels of urinary melatonin metabolites are linked with higher risks of some **cancers**.
- Human trials have shown that taking oral melatonin, alone or with other treatments, has improved outcomes for cancer patients, increasing **survival rates** and **tumor regression**.
- Melatonin may also ease and protect against many harmful **side effects** of chemotherapy and radiation.



Through these and other actions, melatonin has been shown to have **anti-cancer** effects on cancer cell lines, including:

- Prostate,^{8,17}
- Breast,^{8,17}
- Stomach,^{2,17}
- Lung,^{5,18}
- Ovarian,^{5,8}
- Colorectal,^{5,17}
- Oral,^{2,5}
- Liver,^{8,12} and
- Kidney.⁵



Improving Response to Human Standard Treatment

Observational studies have shown that exposure to light at night is associated with increased risk of breast cancer. And suppression of melatonin is believed to play an important role in this association.¹⁹⁻²¹

Human studies have reported that lower levels of urinary melatonin metabolites are associated with increased risk of advanced prostate²² and breast cancer.²³

One study evaluated women with estrogen receptor negative ER (-) **metastatic breast cancer**. These women had late-stage advanced disease and could not tolerate further chemotherapy (due to age, low performance status) and/or had previously received chemotherapy.²⁴

They were randomized to receive **20 mg of melatonin** or a **placebo** nightly, in addition to the cancer medication tamoxifen. For such aggressive cancer, the outcomes were remarkable:²⁴

- The **tumor response rate**, the percentage of patients who had improvement in their cancer, was significantly better in those receiving melatonin and tamoxifen.
- The one-year survival rate more than **doubled** in those taking melatonin.

A Note About Melatonin Dosing

To improve sleep, it's generally suggested to take **1 to 3 mg** of melatonin before bedtime.¹ However, human studies evaluating melatonin's effects on **cancer** often use higher doses, typically around **20 mg** per night.^{6,18,31}

Several other studies in cancer patients have shown benefits of melatonin added to treatments such as immunotherapy or chemotherapy.^{2,6,7,18,25-28}

In one of these studies, patients with **metastatic solid tumors** of various types were randomized to receive chemotherapy alone, or **20 mg of melatonin** daily in addition to their chemotherapy. The one-year **survival rate** and rate of **tumor regression** was *higher* with melatonin, with positive outcomes approximately **doubled**.²⁸

Another study of patients with cancer that had metastasized to the **brain** showed that taking melatonin improved one-year survival rates and mean survival times.²⁶

Meta-analyses of human trials have shown that cancer patients taking melatonin along with conventional treatment had better **survival rates** and **tumor response rates** than patients who don't receive melatonin.^{6,7,25}

These studies show that melatonin, when taken with standard cancer treatment, may enhance the efficacy of chemotherapy and mitigate side effects.

Easing Side Effects

Melatonin may also help minimize the negative effects of cancer treatments.²⁹

A review of human studies showed that melatonin may improve sleep quality and insomnia in patients with cancer.³⁰

In one trial of women with breast cancer, the treatment group received **18 mg** of melatonin daily, beginning one week prior to the treatment until two years after completion. After two years researchers concluded that long-term use of melatonin decreased the level of fatigue, which is common in cancer patients undergoing cancer treatment.³¹

Impaired cognitive function is a common side effect of chemotherapy. In a randomized controlled trial in women undergoing **chemotherapy** for breast cancer, **20 mg** of daily melatonin was taken before and during their first cycle of chemotherapy. Those who received melatonin experienced improvement in several markers of **cognitive function** as compared to placebo. In addition, there was improvement in sleep quality and reduction in symptoms of depression, compared to placebo.³²

Many chemotherapy and radiation treatments also cause potentially **lethal side effects**. Studies have found that melatonin protects against many of these, including low platelet counts, neurotoxicity and cardiotoxicity, weakness, and more.^{6,7,31,32}

Melatonin has been shown to augment some cancer therapies and protect against harmful side effects of treatment.



Summary

The hormone **melatonin** exhibits **anti-cancer** properties.

Human observational studies have shown lower levels of urinary melatonin are associated with increased risk of advanced prostate and breast cancer.

Studies of patients with existing cancer show that taking **oral melatonin** may increase **survival rate**, improve **tumor response**, and protect against **side effects** of other cancer treatments. •

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Adverse Impact of Early-Onset **MENOPAUSE** or Symptom Severity

BY WILLIAM FALOON

The average age of menopause in the United States is **51 years**.

Premature menopause describes a woman who enters **menopause** under age **40**.

Early-onset menopause is typically diagnosed when women enter menopause at age **40-45 years**.

Late-onset menopause occurs when women enter menopause after **55 years** of age.

A menopausal woman is no longer ovulating, her sex hormone levels have plummeted, and she may struggle for years with menopausal miseries such as sleep deprivation, memory loss, and unwanted weight gain.

Over the decades, we've published many articles about how maturing women can offset the miseries and health risks inflicted by **menopause**.

We were among the first to identify the potential cancer and cardiovascular risks posed by some types of oral **synthetic progestogens** (also called *progestins*) that were often combined with various forms of **conjugated equine estrogen** (i.e., estrogen derived from horses).

A potentially better option for most women and their treating physicians contemplating hormone replacement therapy is the use of transdermal bioidentical **estrogen** and oral micro-nized **progesterone** that are available at most pharmacies today.



Dangers of Severe Menopause Symptoms

In a huge observational cohort of around 80,000 postmenopausal women from the famous **Women's Health Initiative** study, the **severity of menopausal symptoms** correlated with increased risk of **cardiovascular disease** and shorter **lifespans**.¹

The women in this study had no known cardiovascular disease at baseline.

The severity and medical outcomes were assessed during a median of **8.2 years** of follow-up.

Greater **cardiovascular disease** risk was observed with increased **severity** of the following **menopausal symptoms**:

- night sweats,
- waking up several times at night,
- joint pain or stiffness,
- heart racing or skipping beats,
- dizziness,
- feeling tired,
- forgetfulness,
- mood swings,
- being restless or fidgety, and
- difficulty concentrating.

Each of these **menopausal miseries** was significantly associated with **cardiovascular disease** events.

The largest risk was for “*moderate or severe heart racing or skipping beats*.” This **menopausal** symptom increased **cardiovascular** events by **55%**.

Increased **all-cause mortality** was associated with individual **severities** of:

- heart racing or skipping beats,
- dizziness,
- tremors,
- feeling tired,
- forgetfulness,
- mood swings,
- being restless or fidgety, and
- difficulty concentrating.

These data sets garnered some publicity in **2023**, but little has been done to improve **standard of care** as it relates to use of more preventative cardiovascular interventions in women with a history of severe **menopausal symptoms**.

Alleviating **severe** symptoms with replacing the hormones (estrogen, progesterone, others) lost to **menopause** might reduce the adverse health outcomes.

Hormone Balance



Dangers of Early Menopause

Data from 12 independent studies were extracted to assess if the length of **reproductive lifespan** is associated with future risk of **cardiovascular disease**.²

Reproductive lifespan can be defined as the years between the age of first menstrual bleeding (menarche) to the onset of **menopause** (or perimenopause in some cases).

This pooled analysis consisted of over 307,000 participants and found that women with short reproductive lifespan (under 30 years) were at a **71% higher** risk of **heart attack**, **stroke**, or nonfatal **coronary** event compared to those with *longer* reproductive lifespans of 36-38 years.

Said differently, a female who enters **menarche** at **age 10** and menopause at **age 40** has a short reproductive lifespan (30 years) and in this study, greater cardiovascular disease hazards.



Younger age at menarche remained a significant uncontrolled factor, but **delayed menopause** was found to reduce **cardiovascular** risks.

Health Consequences of Premature Menopause

A data review from the **Mayo Clinic Cohort Study of Oophorectomy and Aging** further identified the adverse impact of **premature menopause**, be it naturally occurring or caused by a medical procedure.³

The researchers found that women who experience **premature menopause** (before age 40 years) or early-onset menopause (between ages 40 and 45 years) experience increased risks of:

- overall mortality,
- cardiovascular diseases,
- psychiatric disorders,
- osteoporosis, and
- other health issues.

The researchers found the risk of adverse health outcomes increases with *earlier* age of **menopause onset**.

These researchers noted that some of the adverse outcomes may be prevented by **estrogen treatment** initiated after the onset of menopause. They cautioned that estrogen alone does not prevent all long-term consequences and other hormonal mechanisms are likely involved.

The authors of this study concluded:³

“... women who experience hormonal menopause and estrogen deficiency before reaching the median age of natural menopause are at increased risk for morbidity and mortality.”

Early Menopause Associated with Type II Diabetes and Reduced Life Expectancy

Researchers conducted a population-based prospective cohort study of 3,650 postmenopausal women over age 45 years to compare the association of age of natural **menopause onset** with total **life expectancy** and the number of years alive with and without **type II diabetes**.⁴

The study found that women with *early-onset menopause* (defined as under 44 years old) have a shorter overall **life expectancy** and are at increased risk of developing **type II diabetes** earlier in life.

Compared with *late-onset* menopause (defined as ≥55 years old), *early-onset* menopause was associated with a **42%** increased risk of death in women without diabetes.

Women with **type II diabetes** and **early-onset menopause** were at a **64%** associated increased risk of **death** compared with those with *late-onset* menopause. This high mortality rate was not found in women who undergo menopause at typical ages.

These researchers found that **total life expectancy** at age 50 years was shorter in women who had *early* menopause and significantly longer in those with *late* menopause.

Early Menopause = Heart Attack and Early Death

A study conducted in The Netherlands found that women who enter menopause before **age 45** are more likely to have **cardiovascular** problems and to **die younger** than women who enter menopause later in life.⁵

Comparing women who had their last period before age 45 to those who entered menopause at age 45 or older, women with **earlier menopause** had a **50%** higher risk of **coronary heart disease**.

Women who entered menopause before **age 45** were about **20%** more likely to die from cardiovascular disease (including heart attack and stroke) than women with later-onset menopause.

Women who entered menopause *early* were also **12%** more likely to die of any cause.

These European findings corroborate other studies described in this article showing that **age** at **menopause** may help predict women's risk for future health issues. In an interview, the lead researcher stated:⁶

“Our results indicate that menopause might be a critical period to evaluate women’s risk for future cardiovascular events and that it may be an appropriate time to introduce interventions to reduce the risk... Women who enter menopause early may want to work on controlling their blood pressure, cholesterol, blood sugar and other factors affecting their heart health.”

Estrogen-Progestosterone Replacement Options

The data conveyed in this editorial should alter medical practice in ways that encourage recognition of **early-menopause** onset or **severe menopausal symptoms** as indicators of increased disease risk.

Compared to prior decades when **synthetic progestogens** and **conjugated equine estrogens** in oral form were widely used, women have many options including

transdermal application of bioidentical **estrogen** and **progesterone** drugs prescribed by a physician.

Page 30 describes a **plant-derived** estrogen that boosted estradiol blood levels and reduced **menopausal** symptoms in a placebo-controlled **clinical trial**. ●

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Risks of Early Menopause from Hysterectomy

Studies show that women age faster if they have a hysterectomy (surgical removal of uterus) before menopause.

A hysterectomy, especially when it involves removal of both ovaries, can lead to immediate menopause, known as surgical menopause. Regardless of a woman's age, this abrupt loss of hormones, primarily estrogen, can accelerate menopause and natural aging. Sudden cessation of menstruation and a lack of estrogen will cause symptoms of menopause including hot flashes, vaginal dryness, and night sweats.^{7,8}

Potential Impacts of Early Hysterectomy on Aging

Bone Density Loss: Estrogen is crucial to bone health. Typical menopause leads to bone loss and ultimately osteoporosis. The sudden drop in estrogen levels after a hysterectomy, especially if the ovaries are removed, can lead to faster bone density loss (osteopenia) and ultimately osteoporosis, similar to typical menopause but at an earlier age.⁹

Cardiovascular Health: Estrogen has protective effects against heart disease. Women who undergo early menopause, whether due to surgery or naturally occurring, are at a higher risk of developing cardiovascular diseases (including heart attack and stroke) sooner than those who experience menopause at the typical age.^{5,9,10}

Psychological Effects: Early menopause can also have psychological effects, such as increased risks of depression and anxiety, which can affect overall well-being and perceived quality of life.^{9,12}

Skin and Tissue Health: Estrogen affects skin health and the integrity of connective tissues. Early reduction in estrogen levels could lead to signs of skin aging and changes in tissue health.¹³

Mitigation Strategies

Women may undergo a hysterectomy for a variety of reasons including fibroids, endometriosis, and ovarian cysts. Young women are often recommended hormone replacement therapy (HRT), at least until they begin menopause.

Hormone replacement therapy can reduce some of the rapid changes associated with surgical menopause, helping to manage symptoms and potentially reduce the risks of osteoporosis and cardiovascular disease.⁷

Each woman's experience of these symptoms is different and is based on her health, age and treatment plan. It's important for women who have undergone early hysterectomy to have a management plan that includes monitoring, and preventing or potentially treating these risks in consultation with their healthcare provider.



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Discover a European Secret for Beautiful Legs

Youthful Legs helps your legs look and feel great by:¹⁻⁴

- Supporting healthy blood flow.
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Whey Protein

BY LAURIE MATHENA



Whey protein is often associated with athletes who want to boost muscle mass and performance.

In reality, whey is *especially* beneficial for seniors. Research has shown that whey reduces muscle wasting in the elderly, inhibits weight gain, may help prevent cardiovascular disease, and more.¹⁻³

Older adults require *more* protein per kilogram of body weight than when they were younger because bodies don't utilize protein as well with age.⁴ Unfortunately, as many as one-third of older adults don't consume enough protein.⁵

Lack of protein intake can contribute to loss of muscle mass, decreased bone mass, cognitive impairment, decreased immune function, poorer healing, and longer recuperation from illness.⁶

When reduced protein intake is combined with an increasingly sedentary lifestyle and the natural decline in muscle mass with age, this can set the stage for deteriorating muscles, frailty, loss of independence, slower recovery from illness, and more.

The Benefits of Whey

Whey protein powder represents a simple, effective way to significantly boost protein intake.

Whey is made from the liquid part of milk that separates during cheese production. In addition to being a complete source of protein, whey also contains nutrients like branched-chain amino acids (BCAAs), immunoglobulins, and lactoferrin.

BCAAs are essential nutrients that reduce muscle breakdown and stimulate the building of protein in muscle.⁷

But more than preventing muscle *loss*, whey can increase muscle mass.

In one study, healthy women from 65-80 years old who took whey protein supplements and exercised experienced a higher increase in muscle mass than those who exercised without taking whey.⁸

In another study, giving whey to hospitalized elderly individuals improved their nutritional status and rehabilitation outcomes.⁹

When combined with benefits like inhibiting weight gain and helping prevent cardiovascular disease, it's clear that whey may help support healthy aging.

Here, we share four delicious smoothie recipes that include whey protein powder for a simple way to get more protein in your daily diet.

A scoop of whey protein can add about **17 grams** of protein or more to a smoothie.

Chocolate Peanut Butter Bliss Smoothie

- 1 cup unsweetened almond milk (or any milk of choice)
- 1 scoop chocolate whey protein powder
- ½ frozen banana, cut into chunks
- 2 tablespoons almond butter
- ½ teaspoon vanilla extract
- 1 handful of ice cubes

Directions

1. Add all ingredients to blender.
2. Blend until smooth.
3. Serve immediately.



Pineapple Coconut Smoothie

- 1 cup unsweetened almond milk (or any milk of choice)
- 1 scoop vanilla whey protein powder
- 1 cup frozen pineapple
- ¼ cup unsweetened coconut flakes
- 1 handful of ice cubes

Directions

1. Add almond milk and coconut to blender and blend until the coconut is smooth.
2. Add remaining ingredients to blender.
3. Blend until smooth.
4. Serve immediately.





Green Machine Smoothie

- 1 cup unsweetened almond milk
- 1 scoop vanilla whey protein powder
- ½ frozen banana, cut into chunks
- 1 large handful spinach
- ¼ cup frozen avocado
- 1 handful of ice cubes

Directions

1. Add all ingredients to blender.
2. Blend until smooth.
3. Serve immediately.

Chocolate Strawberry Smoothie

- 1 cup unsweetened almond milk
- 1 scoop chocolate whey protein powder
- 1 cup frozen strawberries
- 1 tablespoon hemp hearts
- 1 handful of ice cubes

Directions

1. Add all ingredients to blender.
2. Blend until smooth.
3. Serve immediately.



Create Your Own Smoothie

Customize your own smoothie by choosing from the following:

1. **Liquid**, such as almond milk, coconut milk, water
2. **Protein**, such as whey protein powder, yogurt, or chickpeas
3. **Healthy fat**, such as any nut butter, chia seeds, flax seeds, hemp hearts, or avocado
4. **Fruit**, 1 cup of any frozen fruit
5. **Veggies**, such as spinach or kale
6. **Flavor booster**, such as cinnamon, ginger, coconut, or vanilla extract
7. **Ice**

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Many creatine products are sold on the American market, but the most absorbable form is creatine monohydrate. **Life Extension** offers a creatine supplement that provides energy-boosting effects to cells throughout the body.

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Each **Creatine Capsule** supplies **500 mg** of easily absorbed creatine monohydrate.



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Crunch Digest Your Lunch
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Uncomfortable after eating?

Digestive enzymes are specialized proteins that help you break down the foods you eat.

Enhanced Super Digestive Enzymes combines 10 vegetarian-friendly enzymes to help you break down hard-to-digest foods and encourage a healthy gastrointestinal balance...so you can feel good after you eat!

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60 vegetarian capsules

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"This product is very good,
and I will continue with it."

Eric

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Estrogen plays a key role in a woman's quality of life. **Estrogen Balance Elite** is a hormone-free botanical formula that promotes estradiol production, the form of estrogen made in the ovaries, with a scientifically

studied fenugreek extract. Fenugreek also helps relieve hormone-related discomforts, including hot flashes, night sweats, vaginal dryness and mood swings.



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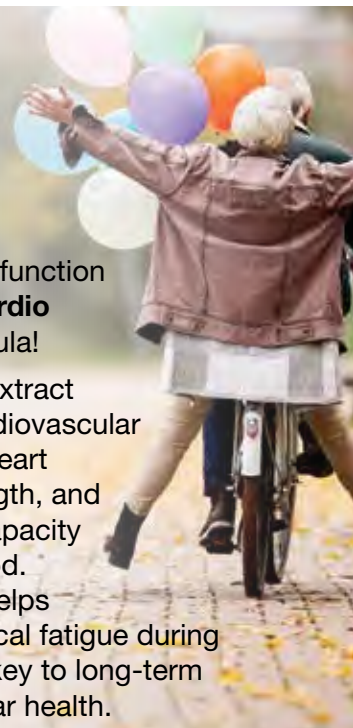
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Dry eyes are annoying and can lead to permanent eye damage. A berry extract boosts the body's production of real tears by a clinically documented **89%**.



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38 RESTORE HORMONAL BALANCE

In a **clinical trial** of postmenopausal women, **plant-derived** compounds *boosted estradiol* blood levels and *reduced menopausal symptoms*.



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48 WHAT ARE TOCOTRIENOLS?

This form of **vitamin E** helps protect against **DNA damage**, and improves heart and bone health markers, while enhancing immune response and blood sugar control.



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54 HELP YOUR HEART PUMP BETTER

In a **clinical trial**, a plant extract *improved* the heart's **pumping ability**, *increased ejection fraction* and *reduced* physical **fatigue** by **23%**.



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64 COMBAT BLOAT AND INDIGESTION

Two **plant compounds** relieved various symptoms of **bloating** and **indigestion** in **63%** of participants.



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82 PROTECT AGAINST EFFECTS OF EARLY MENOPAUSE

Early menopause is associated with an increase of psychiatric disorders, osteoporosis, and overall mortality. Preventive steps can help reduce these risks.