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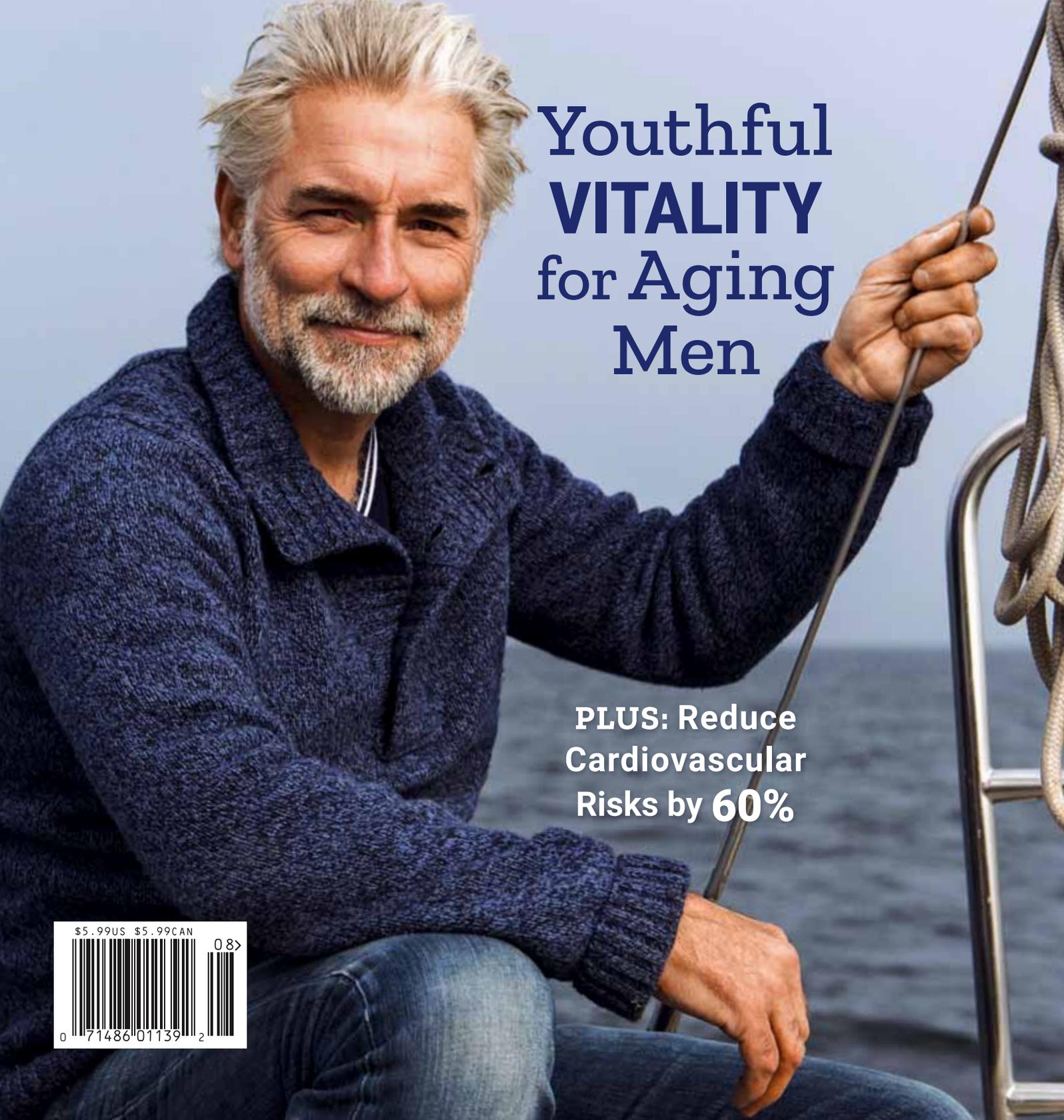
The Science of a Healthier Life®

LifeExtension.com

August 2023

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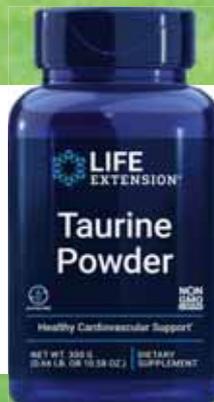
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* *Gerontology*. 1996;42(3):170-80.

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Confirming What Was Discovered Decades Ago



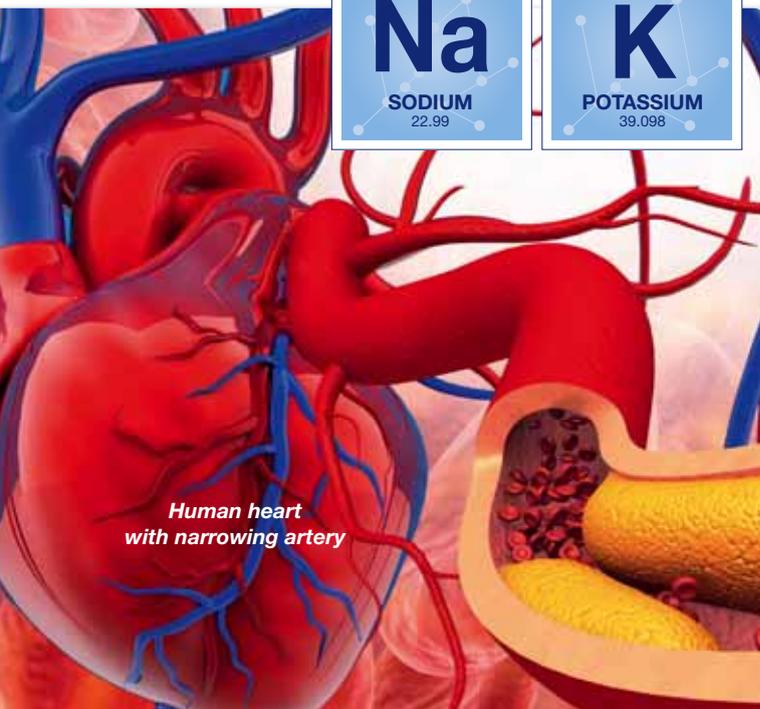
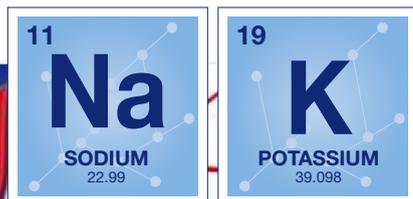
WILLIAM FALOON

It was not until **1912** that a cardiologist established that the narrowing of **coronary arteries** could cause chest pain (angina).¹

Doctors today continue to debate the triggers of **atherosclerosis** that cause most **heart attacks**.

Research dating back many decades associates diets high in **sodium** and low in **potassium** with increased cardiovascular risk.²⁻¹⁰

A study published in **2017** found that people with high **sodium** and low **potassium** dietary intake are **60% more** likely to suffer an ischemic **stroke**.¹¹



Human heart
with narrowing artery

This finding was supported in **2022** by a study published in the ***New England Journal of Medicine*** that assessed sodium and potassium **urinary excretion** as a biomarker for sodium-potassium ingestion.¹²

The ***New England Journal of Medicine*** study evaluated **10,709** people over an **8.8-year** period and found that:

- Compared to those with the *lowest* urinary level of **sodium** excretion, people with the *highest* level of urinary **sodium** excretion were **60% more** likely to suffer a **cardiovascular event**.
- Those with the *highest* **potassium** urinary excretion compared with the *lowest* potassium excretion were **31% less** likely to suffer a cardiovascular event defined as a fatal or nonfatal **heart attack** or **stroke**.
- Patients with the highest to lowest **sodium-to-potassium** urinary excretion ratio (more sodium, less potassium) were **62% more** likely to suffer a cardiovascular event.
- With each unit increase in the **sodium-to-potassium excretion ratio** (more sodium and less potassium), **cardiovascular risks increased 24%**.

These data on cardiovascular risks are based on meticulous research. This represents powerful evidence about the **deadly** impact of excess **sodium** intake and less-than-optimal ingestion of **potassium**.

Yet it was largely overlooked by the media, and I fear much of the public.

The take-home lesson is for most people to **reduce sodium** (salt) intake and ensure they are obtaining adequate **potassium**.

Stroke and **heart attack** remain leading causes of **disability** and **death** despite a wealth of accumulated knowledge.^{13,14}

The encouraging news is that many manageable cardiovascular risk factors have been identified. The disappointing aspect is most people **fail** to aggressively correct their vulnerabilities towards **atherosclerosis**.

We at **Life Extension**® advocate for people to have an **at-home blood pressure** monitor to ensure **24-hour** blood pressure control.

We also urge readers to have comprehensive **blood tests** to identify risk factors before they suffer a **heart attack** or **stroke**.



The **2022** study published in the **New England Journal of Medicine** strongly confirms what was identified **decades ago** about the lethal effects of **excess sodium** and **insufficient potassium**.

For longer life,

William Faloon,
Co-Founder of Life Extension®

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Highest in Potassium
TOP 10 FOODS

4,700 mg of Potassium = 100% of the Daily Value (%DV)

1

Beet greens

28% DV (1,309 mg) per cup
39 calories

2

Salmon

23% DV (1,068 mg) per 6 oz fillet
309 calories

3

Large White Beans

21% DV (1,004 mg) per cup
249 calories

4

Avocados

21% DV (975 mg) per avocado
322 calories

5

Potatoes

20% DV (926 mg) in a medium potato
161 calories

6

Acorn Squash

19% DV (896 mg) per cup cooked
115 calories

7

Milk

16% DV (732 mg) per 16 oz glass
205 calories

8

White Button Mushrooms

12% DV (555 mg) per cup cooked
44 calories

9

Bananas

11% DV (537 mg) per cup sliced
134 calories

10

Tomato

11% DV (523 mg) per cup cooked
43 calories



Highest in Sodium
TOP 10 FOODS

2,300 mg of Sodium = 100% of the Daily Value (%DV)

1

Table Salt

101% DV (2,325 mg) per tsp
0 calories

2

Cured Ham

91% DV (2,100 mg) per cup
249 calories

3

Ham and Egg Biscuit

86% DV (1,989 mg) per item
424 calories

4

Pickled Cucumber

81% DV (1,872 mg) per cup
17 calories

5

Sunflower Seeds (Dry Roasted)

74% DV (1,706 mg) per oz
155 calories

6

Clams

44% DV (1,022 mg) per 3 oz serving
126 calories

7

Canned Beans (with Added Salt)

38% DV (880 mg) per cup
296 calories

8

French Bread

36% DV (837 mg) per slice
378 calories

9

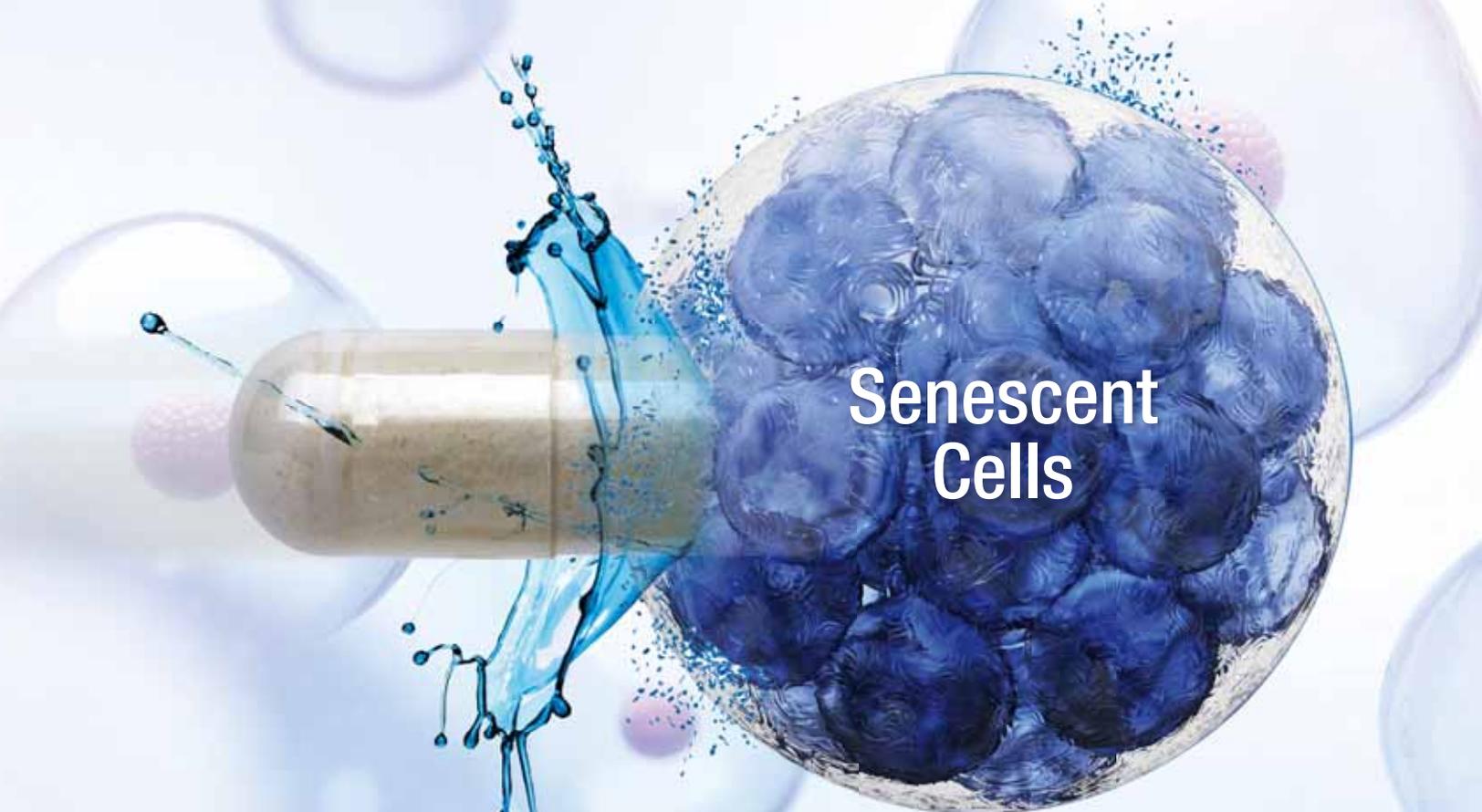
Teriyaki Sauce

28% DV (640 mg) per tbsp
32 calories

10

Grated Parmesan

22% DV (512 mg) per oz
119 calories



Senescent Cells

Senolytic

ACTIVATOR[®] with **BIO-FISETIN**



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

Larry

VERIFIED
CUSTOMER
REVIEW

Item #02301

36 vegetarian capsules

1 bottle **\$19.50** • 4 bottles \$18 each

(Each bottle lasts 3 months)

For full product description and to order **Senolytic Activator[®]**, call 1-800-544-4440 or visit www.LifeExtension.com

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

Senolytics are compounds that selectively remove senescent cells.

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.

The fisetin dose in **Senolytic Activator[®]** provides the potency of **7 capsules of Bio-Fisetin**. (Some people take Bio-Fisetin daily for its other health benefits.)

COMPREHENSIVE SENOLYTIC SUPPORT

The **Senolytic Activator[®]** formula provides the following nutrients:

- **THEAFLAVINS** (polyphenols from black tea)
- **BIO-QUERCETIN** (bioavailable 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.

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.

CONQUER BELLY FAT — WITH — AMPK

Studies show that *increasing AMPK* activity encourages cells to stop storing fat and start *burning* it for energy. So we've created AMPK Metabolic Activator to help trigger AMPK, causing your body to burn unwanted fat—particularly around your abdomen.



"Oh, I love this! I noticed my pants are looser and I can fit in my skinny jeans."

Adela

VERIFIED CUSTOMER REVIEW

Item #02207 • 30 vegetarian tablets

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

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

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

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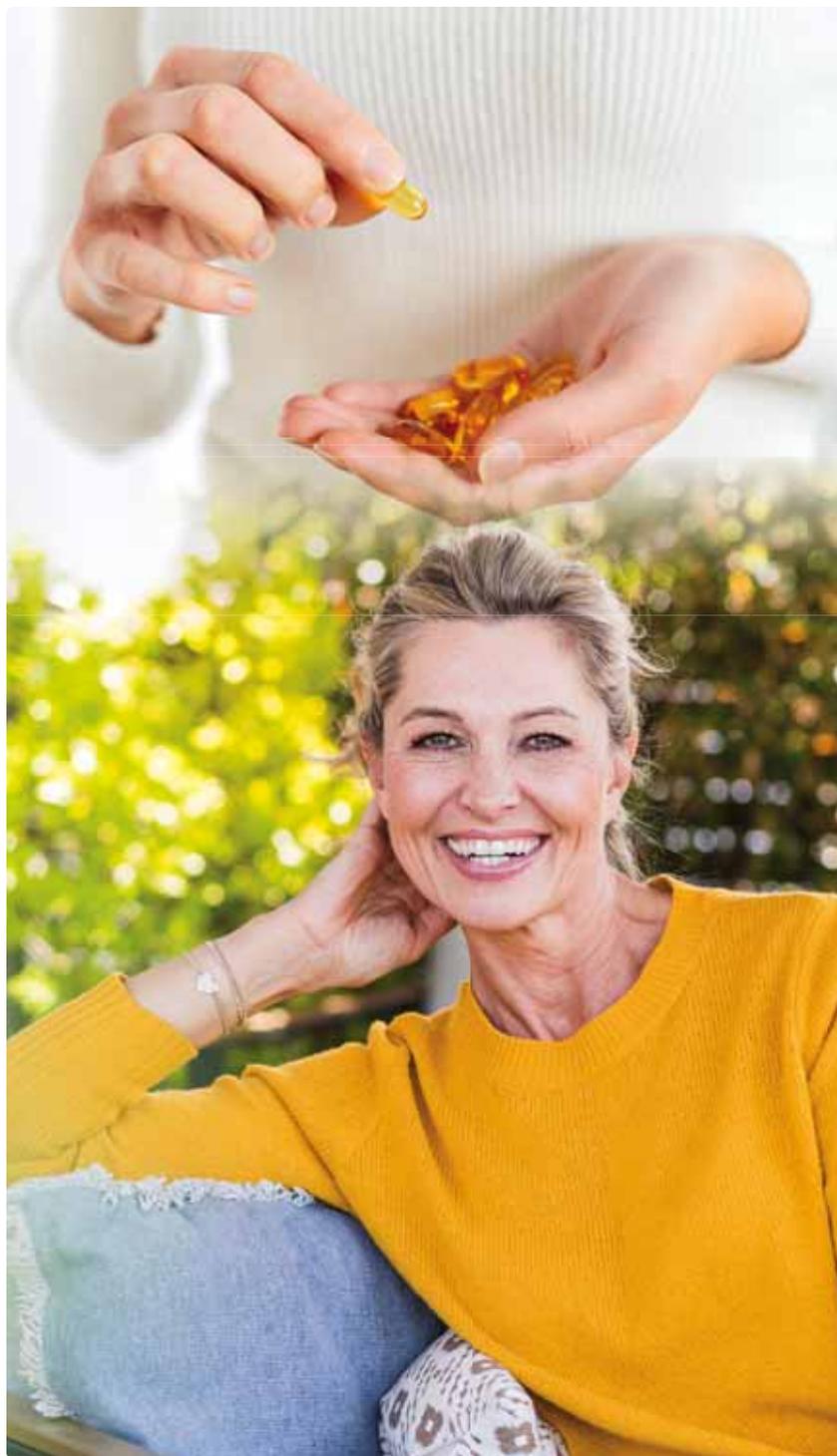
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In the News



Omega-3s May Have Antidepressant Effects

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

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

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

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

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

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

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

Vitamin E Reduces Rheumatoid Arthritis Symptoms

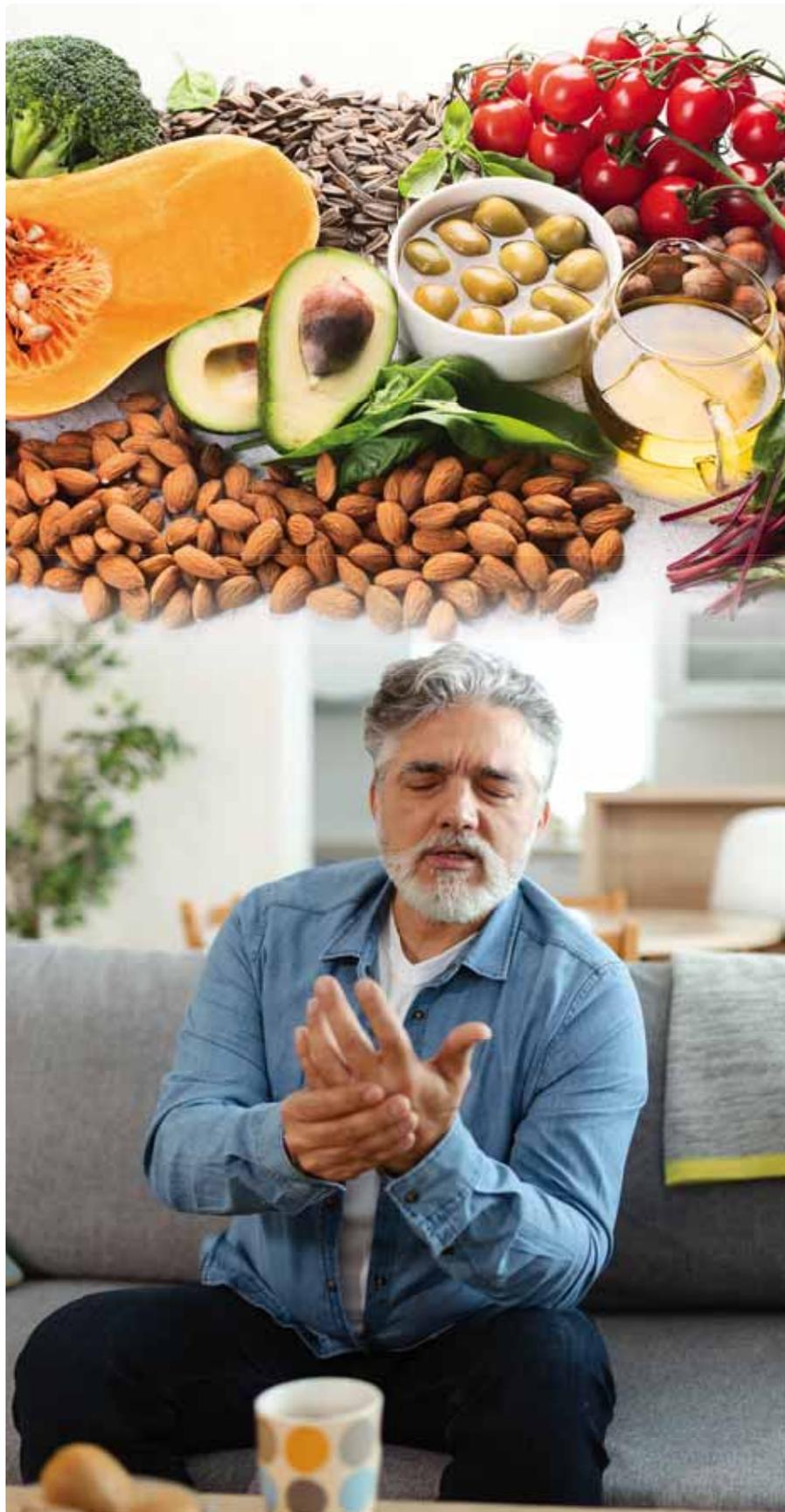
Supplementing with vitamin E helped reduce joint discomfort, water retention, and stiffness in people with rheumatoid arthritis, according to the findings of a systematic review and meta-analysis published in the *European Journal of Clinical Nutrition*.*

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

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

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

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



Supplementing with Vitamin D Lowers Risk of Suicide in Military Veterans

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

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

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

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

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



Green Tea May Improve Fat Tissue Dysfunction

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

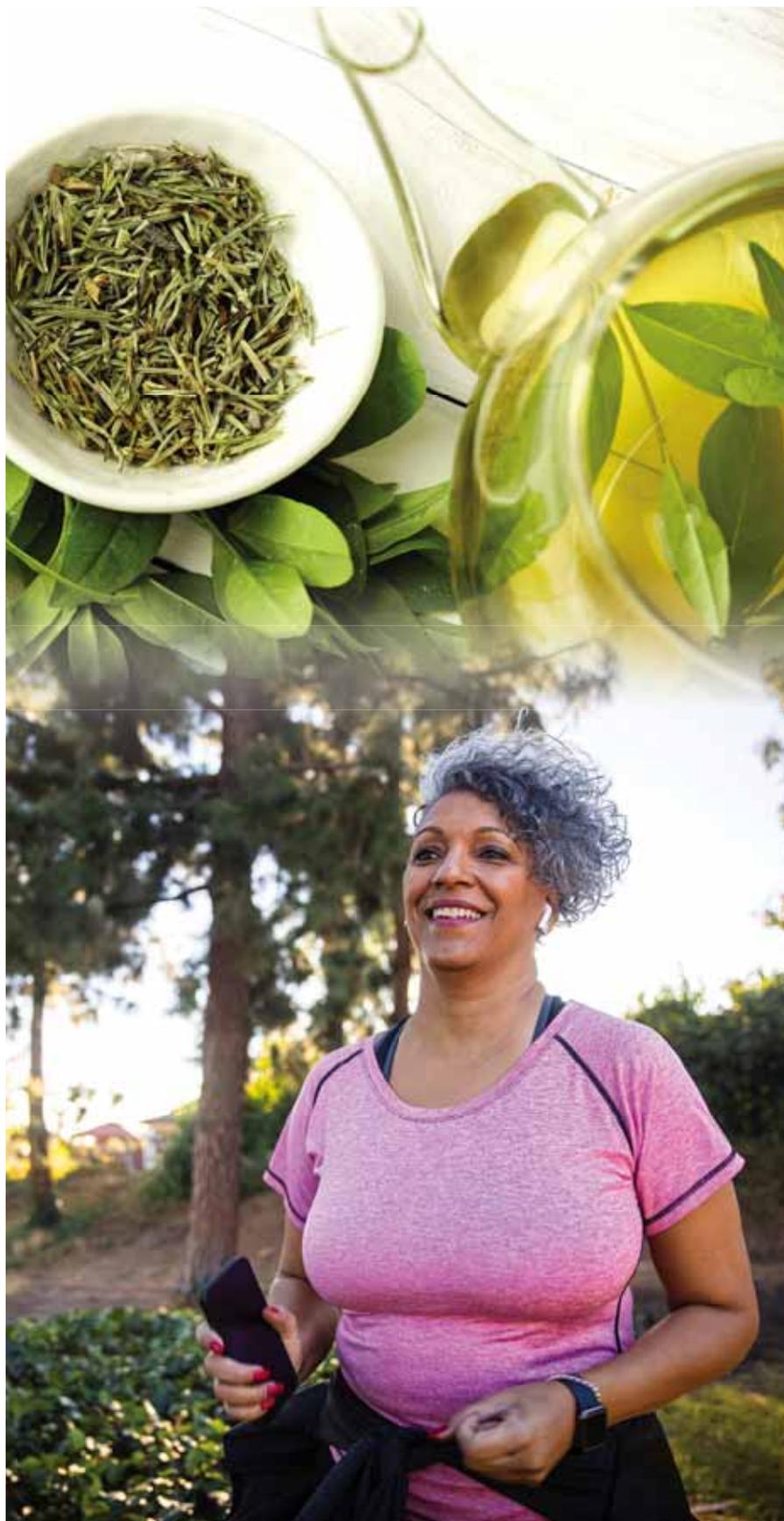
In a trial of 28 overweight or obese postmenopausal women, study subjects were randomized to receive **150 mg of green tea extract** or a placebo daily. The extract contained between **19% and 25%** catechins and at least **13%** EGCG (the major catechin in green tea).

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

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

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

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



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This includes the *pyridoxal 5'-phosphate* form of vitamin B6 shown to protect lipids and proteins against **glycation** and the most biologically active *form* of **folate** called *5-methyltetrahydrofolate (5-MTHF)*, which is up to **7 times more** bioavailable than folic acid.*

Item #01945 • 60 vegetarian capsules

1 bottle \$9 • 4 bottles \$8 each



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

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

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"Great product."

Jack

VERIFIED CUSTOMER REVIEW

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Item #01900

30 vegetarian capsules

1 bottle \$27

4 bottles \$24.75 each

Robuvit® is a registered trademark of Horphag Research and the use of this product is under international patent applications.

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

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**TASTY
AND
EASY TO
SWALLOW**

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Fish oil supports **brain** and **heart** health.¹⁻³

New **Omega-3 Fish Oil Gummy Bites** *melt* in your mouth to provide:

- **750 mg** fish oil concentrate with **300 mg** EPA and **225 mg** DHA per serving
- Delicious tropical flavor
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- Sugar free*

References

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2. *BMJ.* 2020;368:m456.
3. *Mar Drugs.* 2018 Nov 16;16(11).

Item #02508

36 gummy bites

1 box **\$18**

4 boxes \$16 each



* Not a low calorie food.

For full product description and to order **Omega-3 Fish Oil Gummy Bites**, call **1-800-544-4440** or visit www.LifeExtension.com



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DEFEND Against the Challenges of Male Aging

BY MICHAEL DOWNEY

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

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

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

In **human** studies, these ingredients:

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

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



Male Sexual Health

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

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

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

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

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

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

Kaempferia parviflora

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

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

Restoring Testosterone Levels

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

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

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

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

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





WHAT
YOU
NEED
TO
KNOW



Pomegranate

Cacao

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

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

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

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

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

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

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

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



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

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

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

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

Prostate Protection

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

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

Saw palmetto benefits the prostate by:²⁷⁻²⁹

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

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

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

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

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

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

Summary

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

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

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

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

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it comes to heart
health.



Go Green.

Your heart will love the benefits of Life Extension® **Mega Green Tea Extract**. Help maintain already-healthy blood cholesterol, LDL and triglyceride levels with our innovative formula.

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People often crave something tasty to chew on before **bedtime**.

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Clinical studies show that **melatonin** improves revitalizing **sleep** in five ways.¹⁻³

Each **gummy** provides **3 mg** of **melatonin**.

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1 jar \$16.50 • 4 jars \$15 each

Not a low calorie food.



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

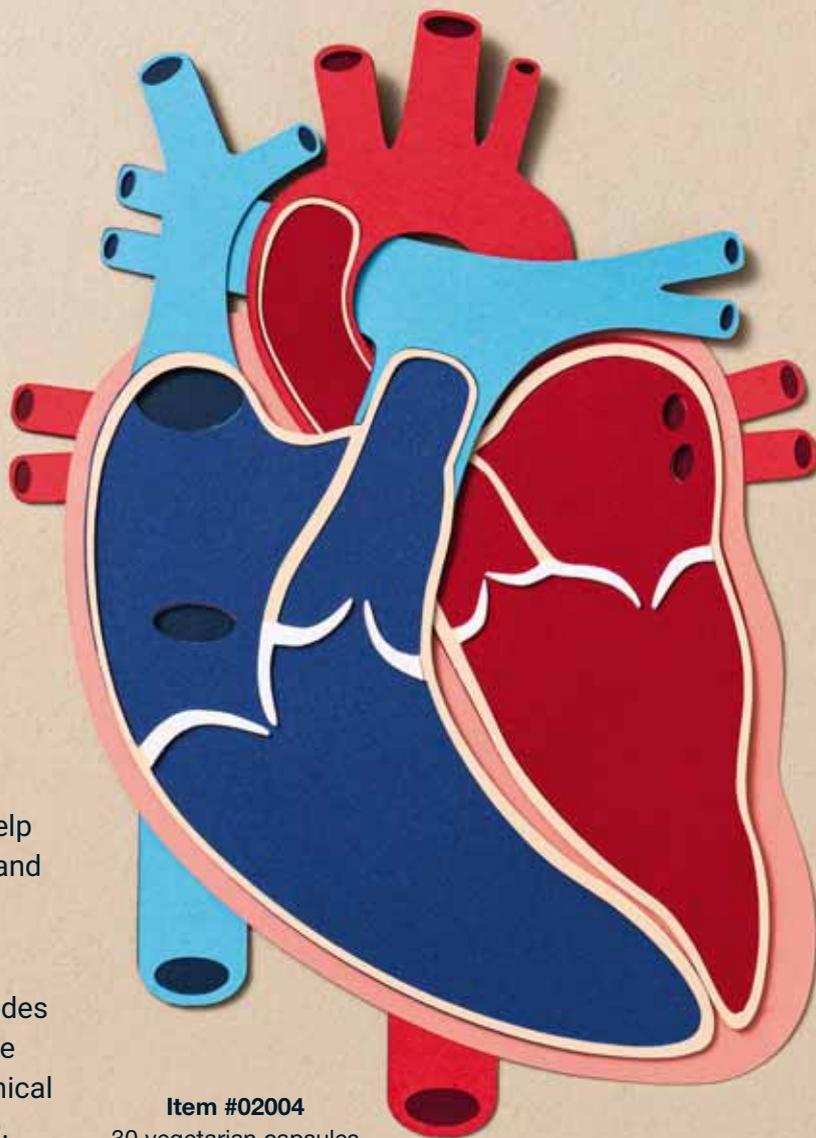
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Caution: Do not consume alcohol, drive or operate machinery after taking this product.

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

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



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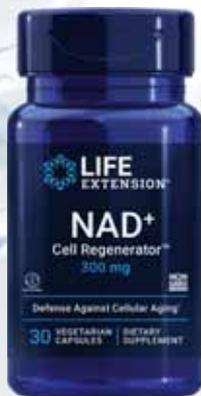
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Surprising Side Benefits of **BETA-BLOCKER DRUGS**

BY EDWARD R. ROSICK, DO, MPH, DABIHM

Beta-blocker drugs are commonly used in patients with hypertension, heart failure, previous heart attack, angina, abnormal heart rhythms, essential tremors,¹⁻³ and migraine headaches.⁴

These drugs get their name because they inhibit receptors on cells called **beta-adrenergic receptors**.

These receptors are activated by **epinephrine** and **norepinephrine**. When this happens, the heart beats faster and contracts with more force.

Blocking **beta-adrenergic receptors** causes the heart to beat more slowly and with less force, lowering blood pressure.³

Intriguing research has shown that this drug class may have other effects.

The benefits include inhibiting the promotion of **cancer** growth⁵ and slowing the formation of *beta-amyloid* plaques seen in **Alzheimer's**.^{6,7}



Anti-Cancer Actions

Beta-adrenergic receptors are found primarily in the heart, but they are present throughout the body.³

Research has shown that the hormones epinephrine and norepinephrine can exert stimulatory effects on **cancer**⁸ and **immune cells**.⁹⁻¹¹ Activation of beta-adrenergic signaling impairs anti-tumor immune responses.¹¹

These hormones (epinephrine and norepinephrine) can encourage **cancer progression** and **metastasis** by increasing tumor cell invasion, inflammation, and the formation of new blood and lymph vessels.¹⁰ By partially *blocking* beta-adrenergic receptors, **beta-blockers** may help slow the growth and spread of some cancers.⁵

In preclinical studies, beta-blockers have demonstrated anti-cancer activity by blocking the immune-disrupting effects of **stress**.^{12,13} Epinephrine and norepinephrine both *increase* during stress, which can escalate the proliferation of cancer cells.¹⁴

Studies in mouse models of **pancreatic cancer** have shown that blocking **beta-adrenergic** signaling can *reverse* the effects of chronic stress that promotes cancer progression.¹⁵

Human Studies on Beta-Blockers and Cancer

Beta-blockers are classified as either **selective** or **non-selective**.

Selective beta blockers block beta-adrenergic receptors found primarily in heart tissue.

Non-selective beta blockers block *all* types of beta-adrenergic receptors throughout the body.³

Observational studies suggest that both types of beta-blockers may have benefits in fighting cancers, though in some cases **non-selective beta-blockers** appear to have a more significant effect.

Studies suggest benefits for beta-blocker usage in:

► **LIVER CANCER.** In a study of 2,104 patients with liver cancer, followed for nearly 10 months, those taking the beta-blockers **propranolol**, **labetalol**, **metoprolol**, or **carvedilol** at the time of cancer diagnosis had a **lower** mortality rate than those **not** on beta-blockers.¹⁶ Another population study showed that patients suffering from metastatic liver cancer who had taken the non-selective beta blocker **propranolol** for greater than one year had a **22% lower** mortality risk than matched patients who were not taking it.¹⁷



► **BREAST CANCER.** A meta-analysis of 13 pre-clinical and clinical studies found that use of **selective or non-selective beta-blockers** was significantly associated with longer recurrence-free survival time in women treated for early-stage breast cancer.¹⁸ In one study, breast cancer patients taking **non-selective beta-blockers** had a **66% reduced** tumor proliferation rate compared to those not taking them.¹⁹

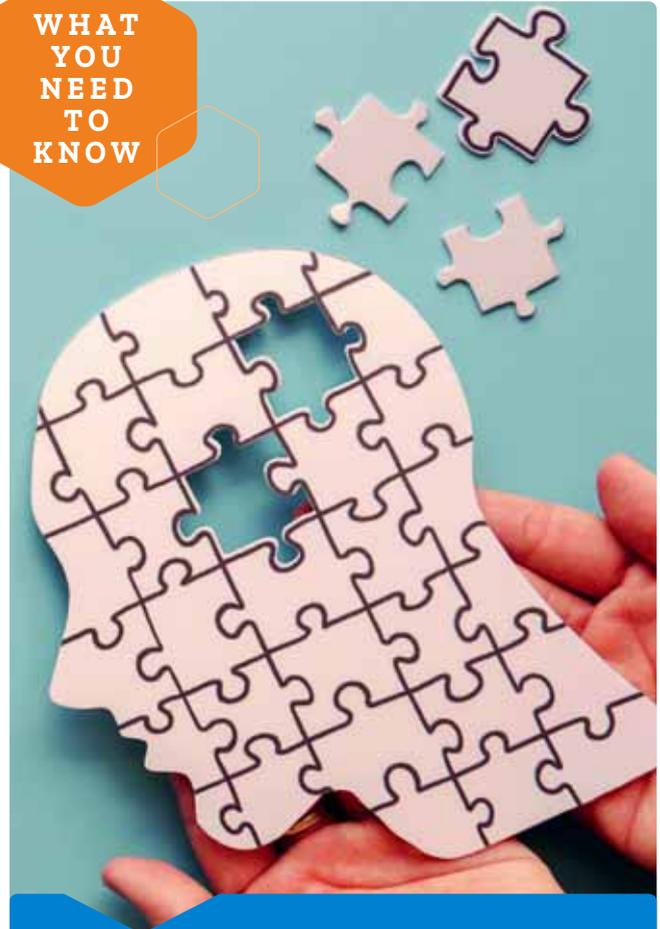
► **OVARIAN CANCER.** In one population study, some women with ovarian cancer who took **beta-blockers** had an **improved survival rate** compared to women who were not taking them. The benefit was seen in women 60 and over who'd used beta blockers for a year or longer.²⁰ Another study of older ovarian cancer patients found that those taking non-selective beta blockers had a **40% lower** risk of dying from their cancer than women not taking these medications.²¹

► **PANCREATIC CANCER.** In a large observational study, **non-selective beta-blocker** use for over 2 years was associated with *reduced pancreatic cancer risk*.²² Another study of 2,394 patients with pancreatic cancer showed that those taking **metoprolol, atenolol, propranolol, or bisoprolol** during the 90 day period before their cancer diagnosis had an improved survival rate compared to patients not on beta-blockers.²³ Neural beta-adrenergic signaling strongly impacts pancreatic cancer progression. Hence, beta-blockade may complement existing therapies for pancreatic cancer.¹⁵

► **COLON CANCER.** In a study of adults with colorectal cancer who were being treated with the monoclonal antibody *bevacizumab* at a university medical hospital, the patients who were also using **beta-blockers** had improvements in **progression-free survival** time and **overall survival** time compared to patients who were not taking beta-blockers.²⁴

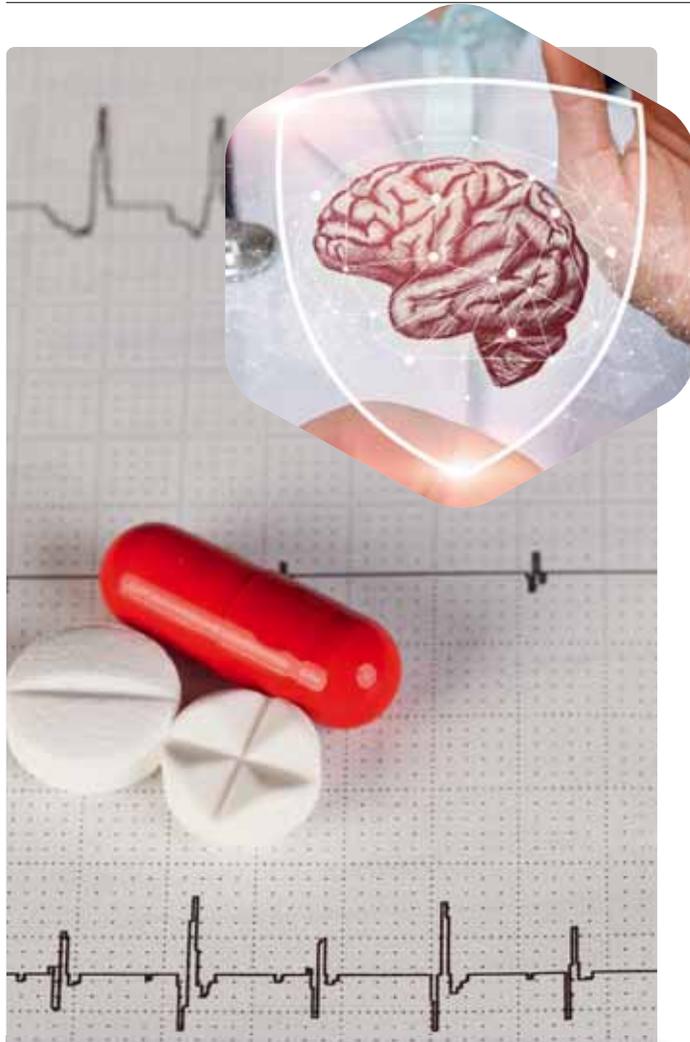
► **MELANOMA.** One study found that adults with melanoma who were taking beta-blockers *before* their diagnosis had a *lower* chance of **disease progression** and melanoma-related **death**.²⁵ And in a population study of 4,179 patients diagnosed with **malignant melanoma**, those given **metoprolol, propranolol, or atenolol** within 90 days of diagnosis had an **increased survival rate** compared to patients not taking beta-blockers.²⁶

WHAT
YOU
NEED
TO
KNOW



Hypertension Drugs May Help Fight Dementia and Cancer

- **Beta-blockers** are used to manage a range of cardiovascular diseases as well as other conditions.
- Observational studies associate beta-blocker use with improved **cognitive function**.
- Preclinical studies show that beta-blockers can reduce the growth and spread of some **cancers**. In population studies, they have reduced risk or slowed spread of liver, breast, ovarian, pancreatic, colon, and skin cancer.



Two Types of Beta-Blockers³⁵

SELECTIVE BETA-BLOCKERS:

- Acebutolol (Sectral[®])
- Atenolol (Tenormin[®])
- Bisoprolol (Cardicor[®])
- Metoprolol (Lopressor[®], Toprol XL[®])

NON-SELECTIVE BETA-BLOCKERS:

- Carvedilol (Coreg[®])
- Labetalol (Trandate[®], Normodyne[®])
- Propranolol (Inderal[®])

Protecting the Brain

Hypertension in midlife is known to *increase* the risk of **mild cognitive impairment** and **Alzheimer’s disease**.²⁷⁻²⁹ By *lowering* blood pressure, **beta-blockers** could help *prevent* this kind of cognitive decline.

Brain inflammation is another hallmark of Alzheimer’s disease.³⁰ Beta-blockers *reduce* inflammatory cytokines in the brain,^{31,32} which may exert additional protective effects against Alzheimer’s.

Observational **human studies** have shown a clear link between use of beta-blockers and lower risk of cognitive impairment and Alzheimer’s disease:

In an observational study, hypertension and cognitive impairment were measured based on confusion or memory loss, problems making decisions, or supervision for participant’s safety. Researchers found **18%** improvement in cognitive impairment between groups of individuals who used beta-blockers, or other antihypertensive medications, compared to those who did not use antihypertensive medications.³³

In another observational study in elderly men and women over 75 with normal cognition, participants were taking different classes of antihypertensive medications. Researchers found that among the other antihypertensive drugs, **beta blockers** were associated with **42% reduced** risk of Alzheimer’s dementia.⁷

In a meta-analysis of six studies on dementia-free individuals, use of beta-blockers was associated with **25%** reduced risk of dementia.

The Honolulu-Asia Aging Study is a prospective, community-based cohort study of Japanese-American men in Honolulu, Hawaii. In 2,197 men, who entered the study at an average age of 77, and had hypertension but not dementia, beta-blocker use as a sole hypertension-lowering drug was associated with a **31% lower** risk of developing **cognitive impairment**. This was compared to men who didn’t take anti-hypertensive medication. The clearest benefit was observed in men over age 75, those with diabetes, and those with a large difference between systolic and diastolic blood pressures.³⁴

A study published in 2023 examined data from **69,081** elderly men and women with hypertension. It found that the use of two beta-blockers that cross the blood-brain barrier, **carvedilol** and **propranolol**, was linked to lower risk of **Alzheimer’s disease**, though not of other forms of dementia.⁶

If you are currently taking **beta-blockers** or feel they may be of use, please discuss the information in this article with your physician.

Summary

Medications called **beta-blockers** have been found in large observational studies to be significantly associated with a lower risk of **Alzheimer's disease**, and inhibit processes that promote **cancer** growth.

In observational studies, people taking beta-blockers have reduced rates of **cognitive impairment**, **Alzheimer's disease**, and some **cancers**, and improved survival times for many forms of cancer. •

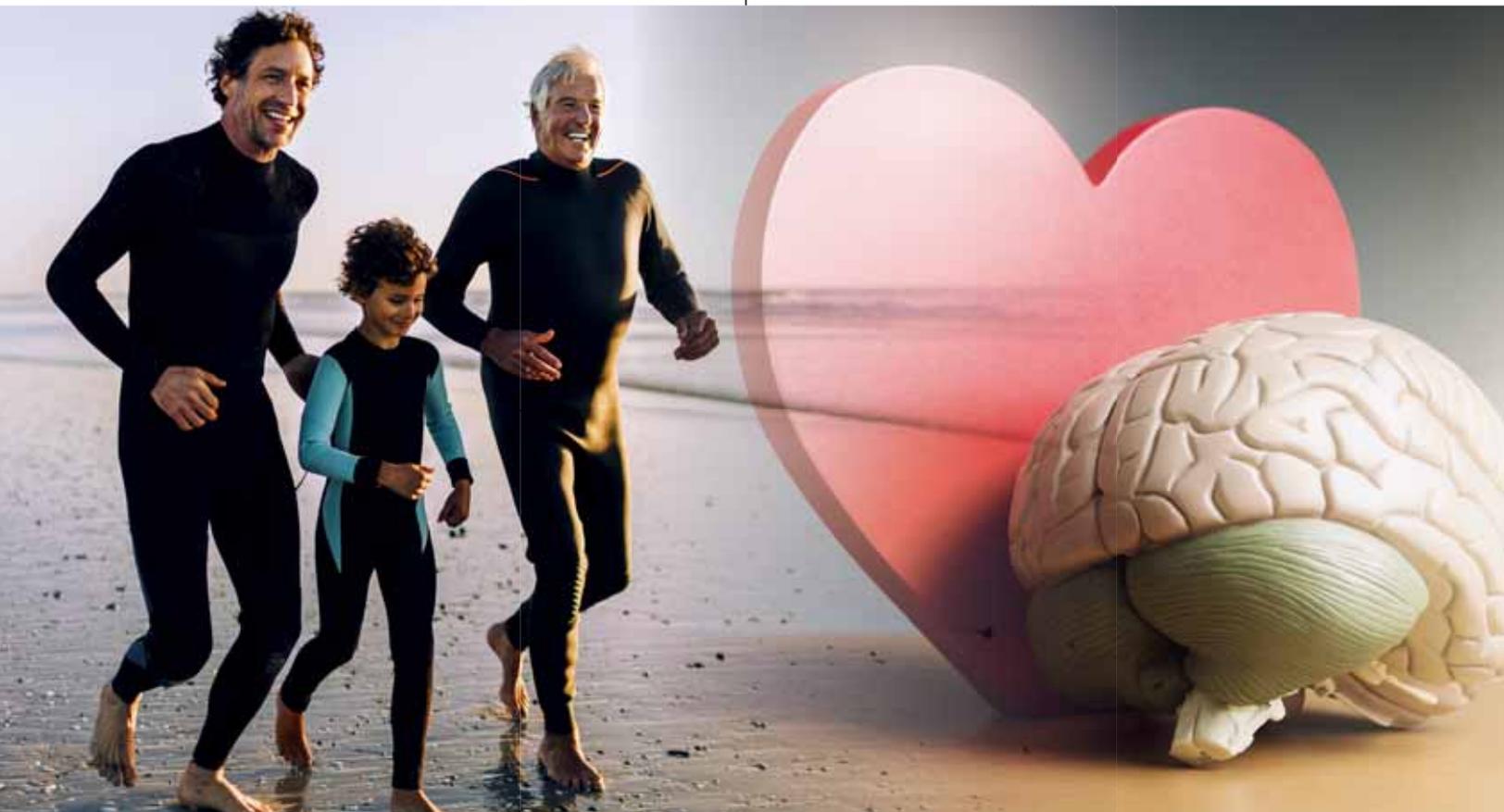
If you have any questions on the scientific content of this article, please call a **Life Extension Wellness Specialist** at 1-866-864-3027.

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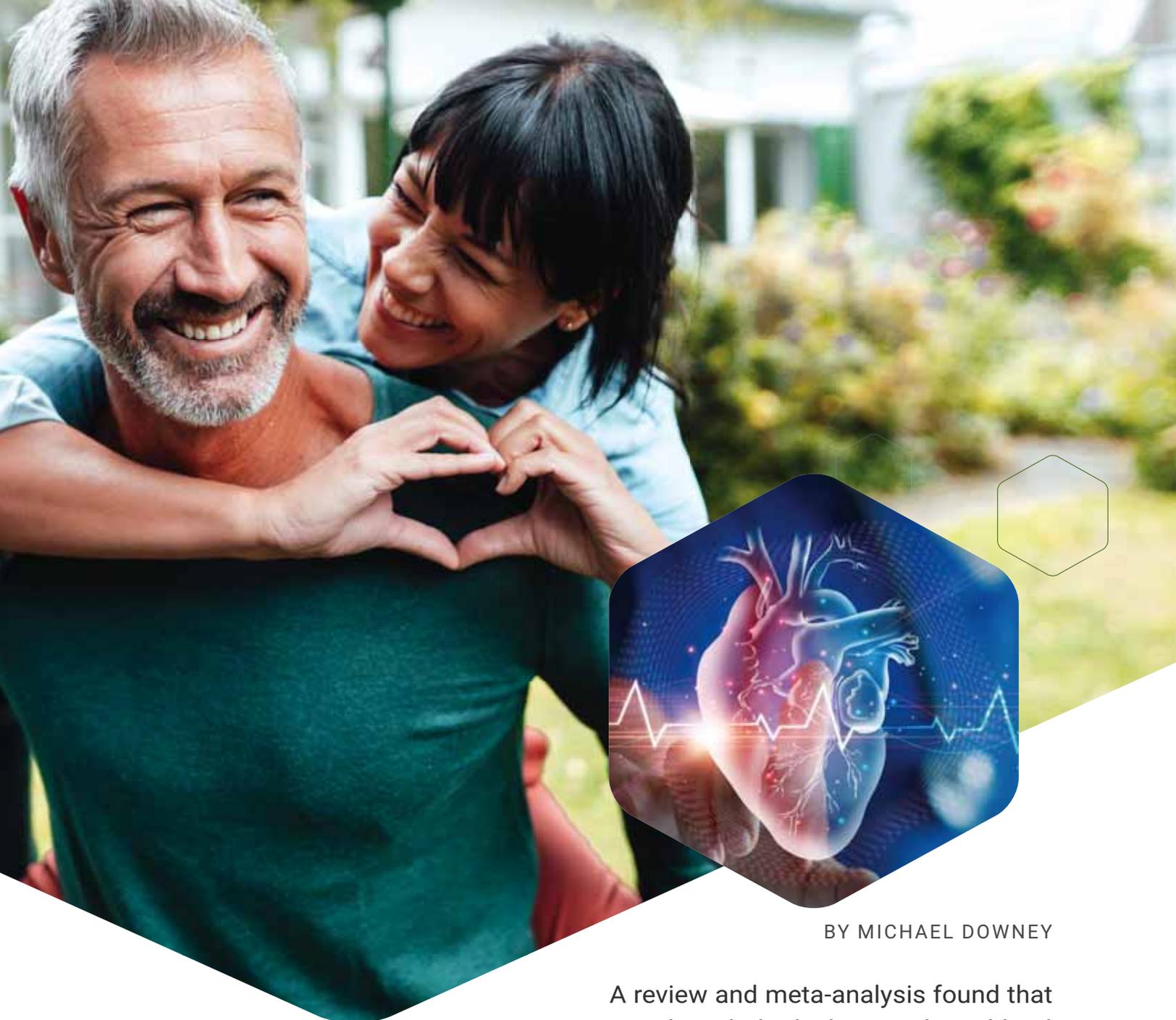
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How **LYCOPENE** Protects the Heart



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

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

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

BY MICHAEL DOWNEY

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

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

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

Lycopene and Heart Disease

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

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

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

Lycopene's Vascular Protective Properties

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

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

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

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

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

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

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

Suppressing Inflammation

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

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

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

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



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

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

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

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

What Human Studies Show

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

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

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

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

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

WHAT
YOU
NEED
TO
KNOW

Cardioprotective Benefits of Lycopene

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

How Much Should You Take?

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

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

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



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

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

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

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

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

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

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

Summary

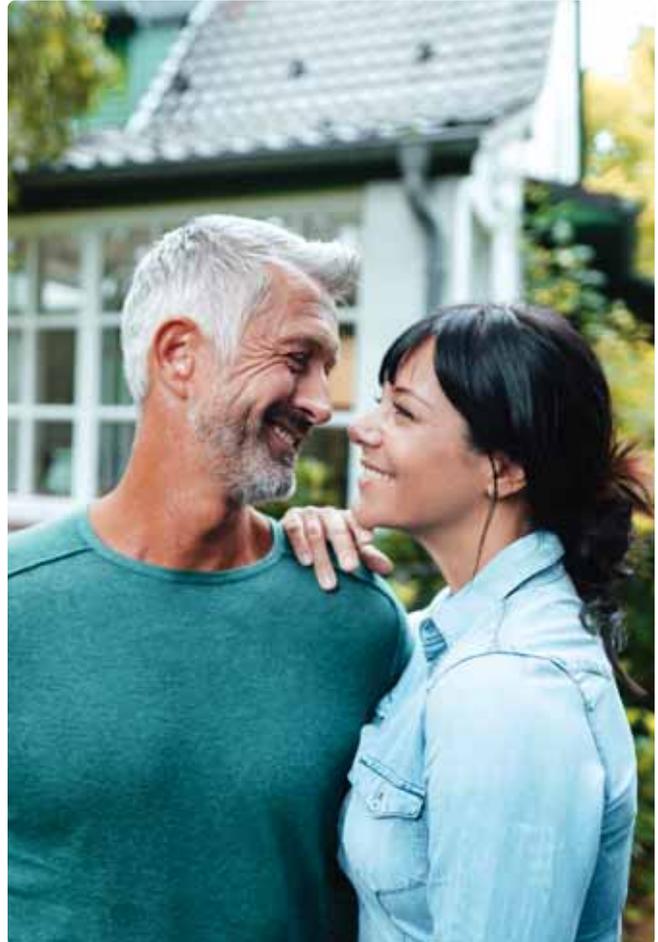
Research shows that **lycopene** may inhibit many different cardiovascular disease risk factors, including atherosclerosis, endothelial dysfunction, and oxidation of cholesterol.

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

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

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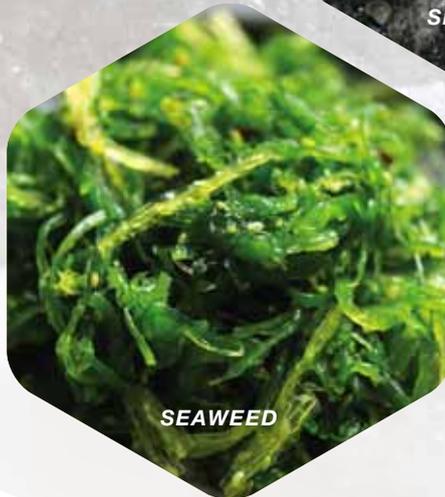
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SEAWEED

BY ERIN DAVIS, MS, RDN, CDCES

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

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

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

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

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

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

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

Promote Healthy Glucose Levels

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

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

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

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

They include:

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



Cinnamon Reduces Glucose

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

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

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

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

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

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

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

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

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

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

Chromium Fights High Glucose

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

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

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

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

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

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

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

Shilajit's Properties

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

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

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

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



WHAT
YOU
NEED
TO
KNOW

Promote Healthy Glucose Levels

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

Amla's Benefits for Diabetes

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

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

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

Seaweed Aids Glucose Control

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

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

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

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

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

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

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

Summary

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

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

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

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

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Molybdenum (amino acid chelate)	100 mcg
Inositol	50 mg
Alpha lipoic acid	25 mg
Bio-Quercetin® phytosome (providing 5 mg quercetin in an absorption-enhancing phosphatidylcholine complex)	15 mg
Marigold extract [std. to 5 mg <i>trans</i> -lutein, 155 mcg <i>trans</i> -zeaxanthin]	11.12 mg
Apigenin	5 mg
Boron (amino acid chelate)	3 mg
Lycopene [Lycobeads® natural tomato extract (fruit)]	1 mg
Selenium [as sodium selenite, SelenoExcell® high selenium yeast, Se-methyl L-selenocysteine]	200 mcg

For complete list of ingredients and dosages, visit www.LifeExtension.com

Good Things Come in Pairs

- **THE CHALLENGE:** How to fit meaningful potencies into one easy-to-swallow capsule?
- **THE SOLUTION:** **Two-Per-Day...** a diverse array of bioactive nutrients.

Two-Per-Day Multivitamin Tablets

Item #02315 | 120 tablets
1 bottle **\$18.38**
4 bottles \$16.25 each

Two-Per-Day Multivitamin Capsules

Item #02314 | 120 capsules
1 bottle **\$19.13**
4 bottles \$17 each

Each bottle provides a two-month supply.

For full product description and to order **Two-Per-Day Multivitamin**, call **1-800-544-4440** or visit www.LifeExtension.com

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. Vitamin D supplementation is not recommended for individuals with high blood calcium levels.

† Ratings based on results of the 2023 ConsumerLab.com Survey of Supplement Users. More information at www.consumerlab.com/survey.

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ONLY
1 GRAM OF
SUGAR

Scrumptious Snacking Bar

Life Extension®'s **Wellness Bar—Chocolate Brownie Flavor** takes the guessing out of picking a healthy snack—it's packed with protein and fiber!

The **Wellness Bar** combines great tasting, delicious, chocolate brownie with **12 grams of protein**, **8 grams of fiber**, along with other nutrients.



Item #02186 • 43 g (1.52 oz)

1 six-bar pack \$12.75

For full product description and to order **Wellness Bar-Chocolate Brownie Flavor**, call 1-800-544-4440 or visit www.LifeExtension.com

CONTAINS TREE NUTS (ALMONDS, COCONUT), MILK.
MAY CONTAIN TRACES OF PEANUTS, EGG, SOY, SESAME, AND OTHER TREE NUTS.
MAY CONTAIN SHELL AND/OR PIT FRAGMENTS.



"A great part of my daily wellness routine."

Michael

VERIFIED CUSTOMER REVIEW

RESTORE YOUTHFUL CELL ENERGY WITH **R-LIPOIC ACID**



Powerful **energizing** support to help reduce oxidative stress.

R-Lipoic Acid achieves **10-30 times** higher peak blood levels.

For full product description and to order **SUPER R-LIPOIC ACID**, call **1-800-544-4440** or visit www.LifeExtension.com

Item #01208

60 vegetarian capsules

1 bottle **\$36**

4 bottles \$32.50 each



Suggested dose is one to two capsules daily.

CAUTION: If you are taking glucose-lowering medication, consult your healthcare provider before taking this product.
Bio-Enhanced® is a registered trademark of GeroNova Research, Inc.

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ULTIMATE eye HYDRATION

Moisturize Your Aging Eyes



Brite Eyes III provides a well-established lubricant in every drop, soothing eye discomfort without irritation.

Antioxidant, **N-acetyl-carnosine** is added to promote overall eye health.

Item #00893 • 2 containers
(5 mL each)

1 box **\$27**

4 boxes \$25 each

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

"Best eye drops
I have found."

David

VERIFIED CUSTOMER
REVIEW

Optimize Healthy Blood-Sugar Levels

This formula combines **cinnamon** and **seaweed** extracts with a unique **chromium** stabilized with standardized **amla** and **shilajit** to promote healthy blood-sugar levels already in normal range.



Item #01503

90 vegetarian capsules

1 bottle **\$28.50**

4 bottles \$25.50 each

"This product is fabulous!"

Shirley

VERIFIED CUSTOMER REVIEW

For full product description and to order **CinSulin® with InSea2® and Crominex® 3+**, call 1-800-544-4440 or visit www.LifeExtension.com



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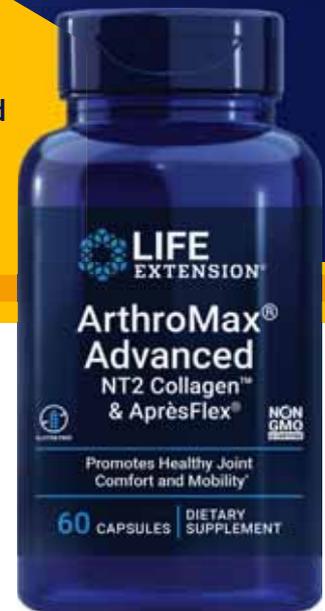
InSea2® is a registered trademark of InnoVactiv™.

Caution: If you are taking blood glucose lowering medication, consult your healthcare provider before taking this product.

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Multi-Action Support for Aging Joints!

Clinically validated ingredients help maintain cartilage and inhibit inflammatory factors to support joint health.



JUST TWO CAPSULES A DAY PROVIDE:

Glucosamine sulfate 2KCl (derived from non-GMO corn)	1,500 mg
AprèsFlex® Indian frankincense (<i>Boswellia serrata</i>) extract (gum resin) [std. to 20% AKBA [‡]]	100 mg
NT2 Collagen™ standardized cartilage providing Total Collagen	40 mg
Boron (calcium fructoborate as patented FruiteX-B® OsteoBoron®)	1.5 mg

NT2 Collagen™ is manufactured by Bioibérica. AprèsFlex® is a registered trademark of Laila Nutraceuticals exclusively licensed to PL Thomas - Laila NUTRA LLC. FruiteX-B® and OsteoBoron® are registered trademarks of VDF FutureCeuticals, Inc. U.S. Patent No. 5,962,049.

[‡] 3-O-acetyl-11-ketoB-boswellic acid.

Item #02238 • 60 capsules
1 bottle **\$25.50**
4 bottles \$22 each



For full product description and to order **ArthroMax®**
Advanced with NT2 Collagen™ & AprèsFlex®
call 1-800-544-4440 or visit www.LifeExtension.com

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Body-Wide Benefits of TART CHERRY

BY PATRICIA WEISER, PHARMD



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

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

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

Reducing Inflammation

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

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

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

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

Protecting Bone Health

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

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

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

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

Improved Cognition

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

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

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

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

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

Promoting Longevity

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

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





Summary

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

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

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

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

Ingrid

VERIFIED CUSTOMER REVIEW

FLORASSIST® GI

for a Healthy Digestion

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

FLORASSIST® 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
1 bottle **\$24.75** • 4 bottles \$22.50 each

Note: Color of inner capsule may vary but does not affect ingredients.

For full product description and to order **FLORASSIST® GI with Phage Technology**, call **1-800-544-4440** or visit **www.LifeExtension.com**

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

Bay Leaves

BY LAURIE MATHENA



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In ancient Greece, **laurel leaves** were woven into crowns and worn as a symbol of triumph.

In time, cultures also came to recognize the *health benefits* of the laurel leaf—better known today as the **bay leaf**. As a rich source of flavonoids, anthocyanins, and flavones, bay leaves were used traditionally to treat conditions ranging from skin rashes to rheumatoid arthritis to ear infections.¹

Today, modern research has confirmed many of the medicinal benefits of bay leaves.

For example, studies reveal that bay leaves have surprising **antibacterial** properties.

In lab studies, they have been shown to inhibit the growth of 10 different bacteria, including *Staphylococcus aureus* that causes Staph infections, *E. coli*, and *P. mirabilis* (a bacterium that contributes to urinary infections).²

Bay leaves could also be beneficial for anyone with metabolic concerns.

In a study of patients with type II diabetes, taking **1 to 3 grams** of bay leaves per day for 30 days produced the following beneficial results:³

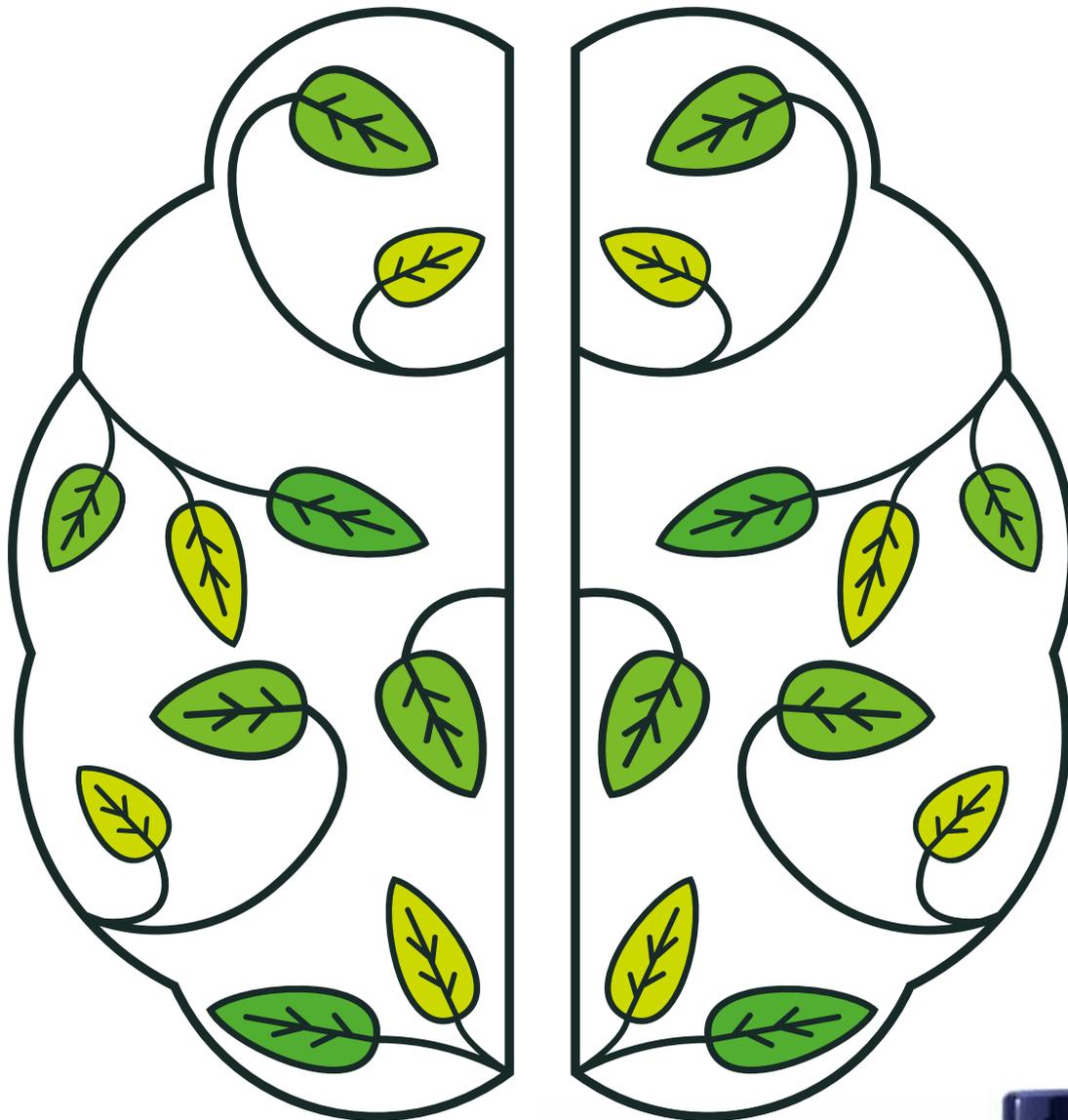
- Serum glucose decreased by **21%-26%**
- Total cholesterol decreased by **20%-24%**
- LDL cholesterol decreased by **32%-40%**
- HDL (“good”) cholesterol increased by **20%-29%**
- Triglycerides decreased by **25%-34%**

In another study, consuming cookies containing bay leaf powder resulted in significantly lower postprandial (after-meal) blood glucose concentrations in type II diabetics.⁴

To obtain the most benefit from bay leaves, it's important to eat the leaf itself, as opposed to simply steeping it in broth and then discarding it.

Try seasoning foods with crushed bay leaves. Use it to flavor soups, sprinkle it on salads, or use it in a rub for your favorite fish.

MANAGE STRESS



Optimized Ashwagandha EXTRACT

Ashwagandha has been shown to:

- Support a healthy response to everyday stress
- Promote emotional well-being
- Encourage already-healthy levels of cortisol, the stress hormone

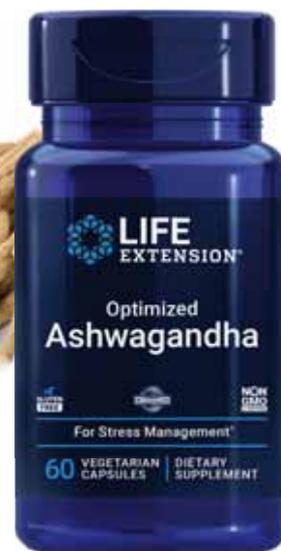
Optimized Ashwagandha provides **standardized** leaf and root **extracts** at a low cost.



Item #00888 • 60 vegetarian capsules

1 bottle **\$7.50** • 4 bottles **\$6.75** each

Sensoril® is protected under US Patent No. 7,318,938 and is a registered trademark of Natreon, Inc.



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



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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 (<i>trans</i> 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

1 bottle **\$22.50**

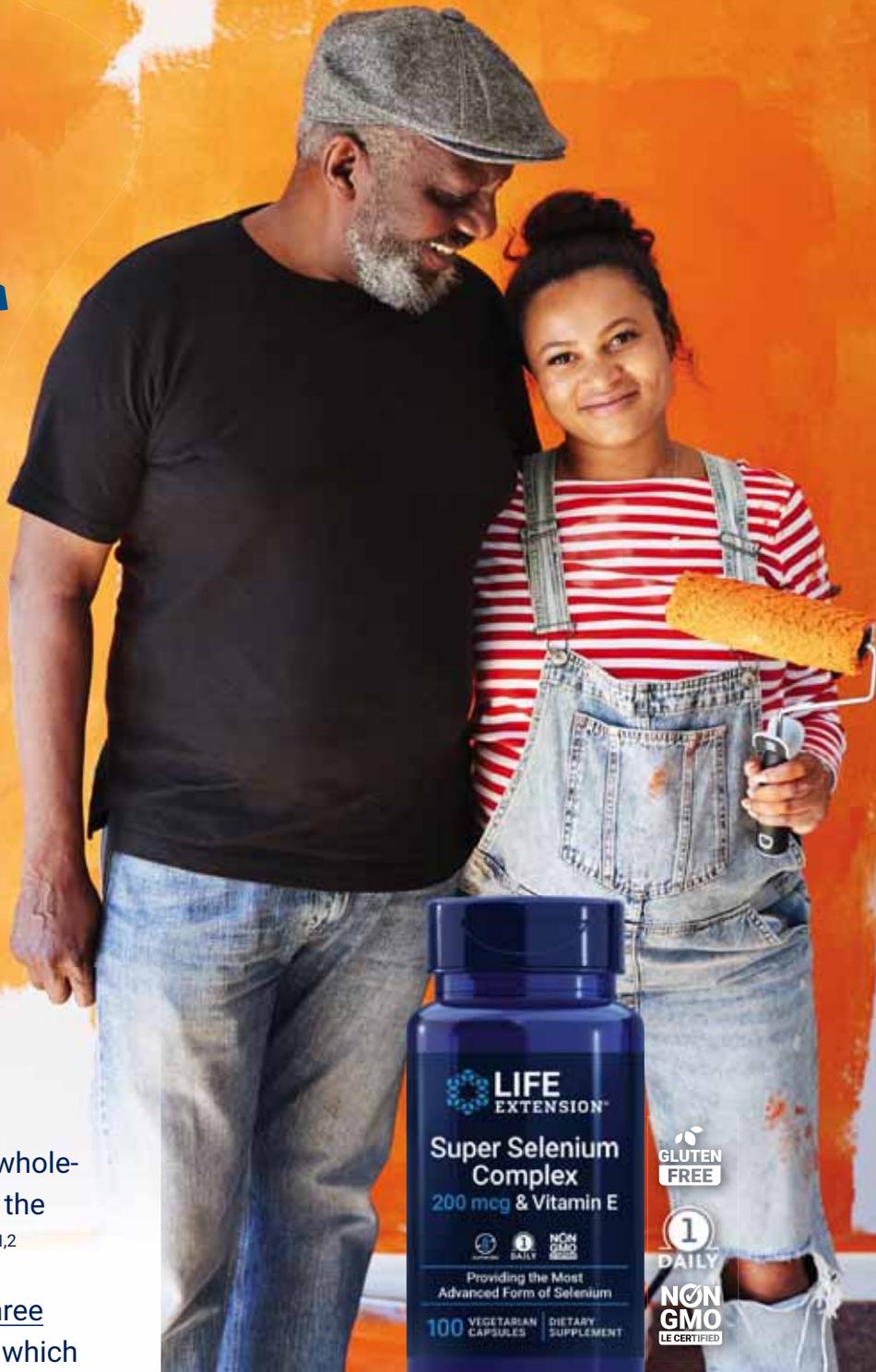
4 bottles \$20.25 each

Each bottle lasts for
three months.



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

share a longer life



Linked to Longevity

Selenium has been shown to confer whole-body protection including supporting the heart, brain, and healthy cell division.^{1,2}

Super Selenium Complex provides three different forms of selenium—each of which uniquely acts along a different pathway.

1. **Sodium selenite**
2. **L-selenomethionine**
3. **Selenium-Methyl L-Selenocysteine**

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Item #01778 • 100 vegetarian capsules

1 bottle **\$10.50** • 4 bottles \$9 each

Each bottle provides a supply that lasts more than three months.

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

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STRONG SUPPORT FOR SORE MUSCLES

After Exercise and Everyday Exertion

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.⁶⁻⁸

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

Life Extension® offers **100% natural Tart Cherry with CherryPURE**®.

Item #02023 • 60 vegetarian capsules

1 bottle \$21 • 4 bottles \$19 each



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

For full product description and to order **Tart Cherry Extract with CherryPURE**®, call **1-800-544-4440** or visit www.LifeExtension.com

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

LOCAL DIRT: *Seasonal Recipes for Eating Close to Home* By Andrea Bemis

Farmer and author Andrea Bemis asks three key questions when choosing what to eat:

Is it good for my body?

Is it good for the planet?

Is it good for other people (community)?

Bemis realized she couldn't fully answer those questions if she didn't know where her food was coming from, so she challenged herself to eat locally—within a 200-mile radius—for 30 days.

She captured her experience—and the recipes that grew out of it—in her latest book, *Local Dirt: Seasonal Recipes for Eating Close to Home*.

All the recipes in *Local Dirt* use ingredients from Bemis's home in the Pacific Northwest. You can follow the recipes exactly as they are, or make substitutions suitable to what's available to you locally.

Local Dirt also provides practical guidance for learning how to locate your own local food resources, as well as suggestions for how to localize each recipe.

Here, **Life Extension**[®] highlights three recipes from *Local Dirt* that can be prepared at various times throughout the year.

—LAURIE MATHENA



Grilled Bread and Marinated Tomato Salad

SERVES 6 AS A SIDE

- 2 cloves of garlic, minced
- 5 ripe tomatoes, cored, seeded, and cut into quarters
- 1 pint cherry tomatoes, sliced in half
- 1 small red onion, minced
- 1/3 cup extra-virgin olive oil, plus additional for brushing
- 2 tablespoons balsamic vinegar
- Salt and freshly ground black pepper
- 8 ounces day-old sourdough bread, cut into 3/4-inch-thick slices
- 1/4 cup chopped fresh basil

Oil your grill racks and preheat the grill to high.

In a large bowl, toss the garlic, tomatoes, onion, olive oil, and vinegar together. Season with a bit of salt and pepper and set aside for 20 minutes.

Brush the bread slices with olive oil. Place them on the grill, close the lid, and cook, turning them once, until they are well marked, about 4 minutes—but check the bread after 2 minutes, as this could happen faster, depending on your grill. Remove the bread to a cutting board, and when it is cool enough to handle, cut or tear it into 3/4-inch cubes.



Add the bread to the bowl with the tomatoes and toss in the basil. Mix well until the bread cubes are evenly coated and serve.

LOCALIZE IT

I wouldn't change much here, as the ingredients should be easy enough to find in high summer in most places.

However, you can swap out the balsamic vinegar for red wine vinegar, basil for parsley or dill, and scallions for the red onion.

Fall Harvest Sheet Pan Salmon and Veggies with Kale Pesto

SERVES 4

FOR THE KALE PESTO

- 2 to 3 cloves of garlic
- 3 cups packed kale leaves (about 1 small bunch)
- $\frac{3}{4}$ cup toasted walnuts (or any lightly toasted nut or seed)
- 2 tablespoons red wine vinegar
- $\frac{3}{4}$ teaspoon fine-grain sea salt
- $\frac{1}{4}$ teaspoon freshly ground black pepper
- Pinch of crushed red pepper flakes (optional)
- $\frac{1}{2}$ cup walnut oil or extra-virgin olive oil, plus more if desired

FOR THE ROASTING PAN

- 1 large onion, peeled, cut into $\frac{1}{2}$ -inch wedges
- 3 small beets, halved (no need to peel)
- 2 carrots, chopped into 1-inch pieces (no need to peel)
- 1 small to medium sweet potato, cut into 1-inch pieces (no need to peel)
- 8 broccolini stalks
- 2 tablespoons extra-virgin olive oil
- Salt and freshly ground black pepper
- $\frac{1}{4}$ teaspoon crushed red pepper flakes
- 4 (5- to 6-ounce) salmon fillets

Preheat the oven to 425°F.

Make the pesto: In a food processor, mince the garlic cloves. Add the kale, walnuts, vinegar, salt, black pepper, and red pepper flakes. With the motor running, drizzle in the oil. Process until the pesto reaches your desired consistency, stopping to scrape down the sides as necessary. Taste and adjust seasonings as needed.

To begin roasting, on a rimmed baking sheet, toss the veggies with olive oil and season them with red pepper flakes and salt and black pepper to taste. Roast them for about 20 minutes, or until they are slightly tender.

Remove the pan from the oven and wedge the salmon fillets between the veggies, skin side down.

Return the pan to the oven and roast for 10 to 15 minutes more, until the salmon reaches desired doneness and the veggies are tender.

Serve salmon and veggies family-style, with kale pesto for drizzling.

LOCALIZE IT

You could use trout, cod, or even a tuna loin. Keep in mind that cooking times will vary. Swap out the veggies with what you've got on hand. Cauliflower, turnips, and butternut squash would all be great additions. No kale? Substitute another pesto or chimichurri sauce.



Winter Squash Wedges with Gorgonzola Butter and Hazelnuts

SERVES 4

FOR THE GORGONZOLA BUTTER

- 1 clove of garlic, minced
- Sea salt
- 3 tablespoons unsalted butter, room temperature
- 3 tablespoons Gorgonzola or any blue cheese

FOR THE WINTER SQUASH

- 1½ pounds winter squash, cut into ½-inch-thick wedges
- 2 to 3 tablespoons melted butter
- Sea salt
- Minced parsley for serving
- 2 tablespoons toasted and crushed hazelnuts
- Freshly ground black pepper

Make the Gorgonzola butter: In a medium-sized bowl, pound the garlic and a hefty pinch of salt with the back of a spoon until a paste forms. Add the butter and cheese and mix until well incorporated. Set aside.

Make the squash: Heat a cast-iron skillet over medium-high heat and brush the squash wedges with a little melted butter. Add the squash to the skillet and cook, undisturbed, for a few minutes. Once the squash begins to brown up a bit, turn the wedges and continue to cook, turning them every few minutes, until they are tender, about 25 minutes.



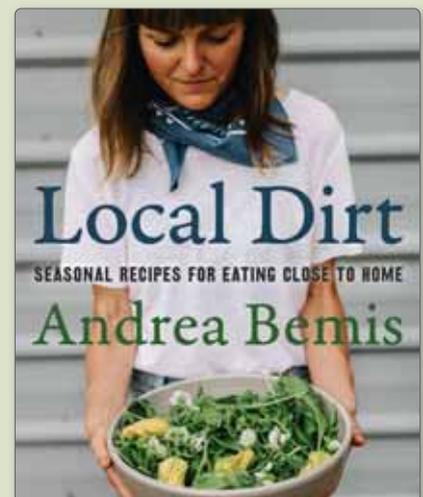
Season with a pinch of salt.

Spoon a thin layer of the Gorgonzola butter onto a platter and top it with the squash. Sprinkle with the minced parsley, hazelnuts, and freshly ground black pepper.

LOCALIZE IT

You could sub in roasted carrots or roasted beets for the winter squash. Try using any local nut or seed in place of the hazelnuts. And a nice local blue cheese is a great substitute for the Gorgonzola.

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



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To order a copy of *Local Dirt*, call 1-800-544-4440 or visit www.LifeExtension.com

Item #34187
Price: \$24.74

ACTIVE LIFESTYLE & FITNESS

- 01529 Creatine Capsules
- 02020 Super Carnosine
- 02023 Tart Cherry with CherryPURE®
- 02186 Wellness Bar - Chocolate Brownie
- 02246 Wellness Code® Advanced Whey Protein Isolate Vanilla
- 02221 Wellness Code® Muscle Strength & Restore Formula
- 02127 Wellness Code® Plant Protein Complete & Amino Acid Complex
- 02261 Wellness Code® Whey Protein Concentrate Chocolate
- 02260 Wellness Code® Whey Protein Concentrate Vanilla
- 02243 Wellness Code® Whey Protein Isolate Chocolate
- 02242 Wellness Code® Whey Protein Isolate Vanilla

AMINO ACIDS

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

BLOOD PRESSURE & VASCULAR SUPPORT

- 01824 Advanced Olive Leaf Vascular Support
- 02004 Arterial Protect
- 02497 Endothelial Defense™ Pomegranate Plus
- 56885 Natto Activ Cardiovascular & Respiratory Support
- 02320 NitroVasc™ Boost
- 01953 Pomegranate Complete
- 00956 Pomegranate Fruit Extract
- 02024 Triple Action Blood Pressure AM/PM
- 02102 Venoflow™

BONE HEALTH

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

BRAIN HEALTH

- 01524 Acetyl-L-Carnitine
- 01974 Acetyl-L-Carnitine Arginate
- 02419 B12 Elite
- 02510 Brain Fog Relief
- 01659 CDP Choline
- 02321 Cognitex® Basics
- 02396 Cognitex® Elite
- 02397 Cognitex® Elite Pregnenolone

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

CHOLESTEROL MANAGEMENT

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

DIGESTION SUPPORT

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

ENERGY MANAGEMENT

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

EYE HEALTH

- 01923 Astaxanthin with Phospholipids
- 00893 Brite Eyes III
- 02323 Digital Eye Support
- 01514 Eye Pressure Support with Mirtogenol®
- 01992 MacuGuard® Ocular Support with Saffron
- 01993 MacuGuard® Ocular Support with Saffron & Astaxanthin
- 01873 Standardized European Bilberry Extract
- 01918 Tear Support with MaquiBright®

FISH OIL & OMEGAS

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

FOOD

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

GLUCOSE MANAGEMENT

- 01503 CinSulin® with InSea²® and Crominex® 3+
- 01620 CoffeeGenic® Green Coffee Extract
- 02122 Glycemic Guard™
- 00925 Mega Benfotiamine
- 01803 Tri Sugar Shield®

HEART HEALTH

- 01066 Aspirin (Enteric Coated)
- 01842 BioActive Folate & Vitamin B12 Caps
- 01700 Cardio Peak™
- 02121 Homocysteine Resist
- 02508 Omega-3 Fish Oil Gummy Bites
- 02018 Optimized Carnitine
- 01949 Super-Absorbable CoQ10 Ubiquinone with *d*-Limonene • 50 mg, 60 softgels
- 01951 Super-Absorbable CoQ10 Ubiquinone with *d*-Limonene • 100 mg, 60 softgels
- 01929 Super Ubiquinol CoQ10
- 01427 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 30 softgels
- 01425 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 100 softgels
- 01437 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 30 softgels
- 01426 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 60 softgels
- 01431 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 200 mg, 30 softgels
- 01733 Super Ubiquinol CoQ10 with PQQ
- 01859 TMG Liquid Capsules
- 00349 TMG Powder

HORMONE BALANCE

- 00454 DHEA • 15 mg, 100 capsules
- 00335 DHEA • 25 mg, 100 capsules
- 00882 DHEA • 50 mg, 60 capsules

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

IMMUNE SUPPORT

- 02411 Day Elderberry Immune
- 02302 Bio-Quercetin
- 02410 Black Elderberry + Vitamin C
- 02433 Echinacea Elite
- 01961 Enhanced Zinc Lozenges
- 01704 Immune Modulator with Tinofend®
- 02425 Immune Packs with Vitamin C & D, Zinc and Probiotic
- 02005 Immune Senescence Protection Formula™
- 01681 Lactoferrin (Apolactoferrin) Caps
- 02426 Mushroom Immune with Beta Glucans
- 01903 NK Cell Activator™
- 01394 Optimized Garlic
- 01309 Optimized Quercetin
- 01811 Peony Immune
- 01708 Reishi Extract Mushroom Complex
- 01906 Standardized Cistanche
- 01097 Ultra Soy Extract
- 01561 Zinc Lozenges

INFLAMMATION MANAGEMENT

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

JOINT SUPPORT

- 02404 Arthro-Immune Joint Support
- 02238 ArthroMax® Advanced NT2 Collagen™ & AprèsFlex®
- 01617 ArthroMax® with Theaflavins & AprèsFlex®
- 02138 ArthroMax® Elite
- 00965 Fast-Acting Joint Formula
- 02430 Fast Acting Relief
- 00522 Glucosamine/Chondroitin Capsules
- 02420 Glucosamine Sulfate
- 02424 Joint Mobility
- 01600 Krill Healthy Joint Formula
- 00451 MSM (Methylsulfonylmethane)
- 02231 NT2 Collagen™

KIDNEY & BLADDER SUPPORT

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

LIVER HEALTH & DETOXIFICATION

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

LONGEVITY & WELLNESS

- 00457 Alpha-Lipoic Acid
- 01625 AppleWise
- 02414 Bio-Fisetin
- 01214 Blueberry Extract
- 01438 Blueberry Extract and Pomegranate
- 02270 DNA Protection Formula
- 02431 Essential Youth - L-Ergothioneine
- 02119 GEROPROTECT® Ageless Cell™
- 02415 GEROPROTECT® Autophagy Renew
- 02401 GEROPROTECT® Stem Cell
- 02211 Grapeseed Extract
- 00954 Mega Green Tea Extract (decaffeinated)
- 00953 Mega Green Tea Extract (lightly caffeinated)
- 01513 Optimized Fucoidan with Maritech® 926
- 02230 Optimized Resveratrol Elite™
- 01637 Pycnogenol® French Maritime Pine Bark Extract
- 02210 Resveratrol Elite™
- 02301 Senolytic Activator®
- 01208 Super R-Lipoic Acid
- 01919 X-R Shield

LUNG HEALTH

- 02512 Healthy Lungs

MEN'S HEALTH

- 02209 Male Vascular Sexual Support
- 00455 Mega Lycopene Extract
- 02306 Men's Bladder Control
- 02515 Men's Vitality Packs
- 01789 PalmettoGuard® Saw Palmetto and Beta-Sitosterol
- 01790 PalmettoGuard® Saw Palmetto/Nettle Root Formula and Beta-Sitosterol
- 01837 Pomi-T®
- 01373 Prelox® Enhanced Sex for Men
- 01940 Super MiraForte with Standardized Lignans
- 02500 Testosterone Elite
- 01909 Triple Strength ProstaPollen™
- 02029 Ultra Prostate Formula

MINERALS

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

MISCELLANEOUS

- 00577 Potassium Iodide
- 00657 Solarshield® Sunglasses

MOOD & STRESS MANAGEMENT

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

MULTIVITAMINS

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

NERVE & COMFORT SUPPORT

- 02202 ComfortMAX™
- 02303 Discomfort Relief

PERSONAL CARE

- 02322 Hair, Skin & Nails Collagen Plus Formula
- 01278 Life Extension Toothpaste
- 00408 Venotone
- 02304C Youthful Collagen
- 02252 Youthful Legs

PET CARE

- 01932 Cat Mix
- 01931 Dog Mix

PROBIOTICS

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

SKIN CARE

- 02423 Daily Skin Defense
- 01938 Shade Factor™
- 02129 Skin Care Collection Anti-Aging Serum
- 02130 Skin Care Collection Day Cream
- 02131 Skin Care Collection Night Cream
- 02096 Skin Restoring Ceramides

SLEEP

- 01512 Bioactive Milk Peptides
- 02300 Circadian Sleep
- 01551 Enhanced Sleep with Melatonin
- 01511 Enhanced Sleep without Melatonin
- 02234 Fast-Acting Liquid Melatonin
- 01669 Glycine
- 02308 Herbal Sleep PM
- 01722 L-Tryptophan
- 01668 Melatonin • 300 mcg, 100 veg capsules
- 01083 Melatonin • 500 mcg, 200 veg capsules
- 00329 Melatonin • 1 mg, 60 capsules
- 02503 Melatonin • 3 mg, 60 gummies
- 00330 Melatonin • 3 mg, 60 veg capsules
- 00331 Melatonin • 10 mg, 60 veg capsules
- 00332 Melatonin • 3 mg, 60 veg lozenges
- 02201 Melatonin IR/XR
- 01787 Melatonin 6 Hour Timed Release
300 mcg, 100 veg tablets
- 01788 Melatonin 6 Hour Timed Release
750 mcg, 60 veg tablets
- 01721 Optimized Tryptophan Plus
- 01445 Quiet Sleep Melatonin • 5 mg, 60 veg capsules
- 02502 Rest & Renew

VITAMINS

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

- 01913 High Potency Optimized Folate
- 01674 Inositol Caps
- 02244 Liquid Vitamin D3 • 50 mcg (2000 IU)
- 02232 Liquid Vitamin D3 (Mint) • 50 mcg (2000 IU)
- 01936 Low-Dose Vitamin K2
- 00373 No Flush Niacin
- 01939 Optimized Folate (L-Methylfolate)
- 01217 Pyridoxal 5'-Phosphate Caps
- 01400 Super Absorbable Tocotrienols
- 02334 Super K
- 01863 Super Vitamin E
- 02422 Vegan Vitamin D3
- 02028 Vitamin B5 (Pantothenic Acid)
- 01535 Vitamin B6
- 00361 Vitamin B12 Methylcobalamin
- 01536 Vitamin B12 Methylcobalamin
1 mg, 60 veg lozenges
- 01537 Vitamin B12 Methylcobalamin
5 mg, 60 veg lozenges
- 02228 Vitamin C and Bio-Quercetin Phytosome
60 veg tablets
- 02227 Vitamin C and Bio-Quercetin Phytosome
250 veg tablets
- 01753 Vitamin D3 • 25 mcg (1000 IU), 90 softgels
- 01751 Vitamin D3 • 25 mcg (1000 IU), 250 softgels
- 01713 Vitamin D3 • 125 mcg (5000 IU), 60 softgels
- 01718 Vitamin D3 • 175 mcg (7000 IU), 60 softgels
- 01758 Vitamin D3 with Sea-Iodine™
- 02040 Vitamins D and K with Sea-Iodine™

WEIGHT MANAGEMENT & BODY COMPOSITION

- 02479 7-Keto® DHEA Metabolite
100 mg, 60 veg capsules
- 02207 AMPK Metabolic Activator
- 02504 Body Trim and Appetite Control
- 02478 DHEA Complete
- 01738 Garcinia HCA
- 02506 Mediterranean Weight Management
- 01432 Optimized Saffron
- 00818 Super CLA Blend with Sesame Lignans
- 02511 Thermo Weight Control
- 02509 Waistline Control™

WOMEN'S HEALTH

- 01942 Breast Health Formula
- 01626 Enhanced Sex for Women 50+
- 01894 Estrogen for Women
- 02204 Menopause 731™
- 02319 Prenatal Advantage
- 01649 Soy Isoflavones
- 02513 Women's Bladder Support

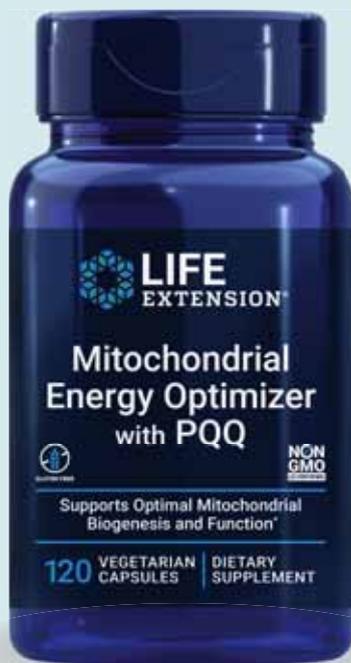
PROTECT & ENERGIZE

Your Aging Cells

1,000 mg
CARNOSINE

800 mg
TAURINE

150 mg
BENFOTIAMINE



150 mg
R-LIPOIC ACID

100 mg
VITAMIN B6
(as pyridoxal 5'-
phosphate)

10 mg
PQQ
Pyrroloquinoline
quinone

Mitochondrial Energy Optimizer with PQQ

Item #01868 | 120 vegetarian capsules
1 bottle \$51 | 4 bottles \$45 each

When **sugar** binds to **proteins** in your body, **glycation** reactions may affect healthy cell structures.

Carnosine, **benfotiamine**, and **pyridoxal-5-phosphate** are powerful nutrients that help inhibit cellular glycation.

PQQ and **R-lipoic acid** promote healthy cell energizing **mitochondria** function.

Mitochondrial Energy Optimizer provides a spectrum of nutrients at a fraction of the cost of buying them individually.

For full product description and to order **Mitochondrial Energy Optimizer with PQQ**, call 1-800-544-4440 or visit www.LifeExtension.com

Bio-Enhanced® is a registered trademark of Geronova Research, Inc.



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.

Re-Energize Heart and Brain Cells

Three Choices of
Superior
Ubiquinol CoQ10
Mitochondrial
Delivery System

"My gift to my
heart."

Donna

VERIFIED CUSTOMER
REVIEW



100 mg CoQ10

Item #01426 • 100 mg, 60 softgels

1 bottle **\$47.25**

4 bottles \$40 each



200 mg CoQ10

Item #01431 • 200 mg, 30 softgels

1 bottle **\$45**

4 bottles \$38.50 each



100 mg CoQ10 + 10 mg PQQ

Item #01733 • 100 mg, 30 softgels

1 bottle **\$38.25**

4 bottles \$31 each

#1 Rated CoQ10 Products - 5 Time Winner!*



For full product description and to order **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™**, or **Super Ubiquinol CoQ10 with PQQ**, call 1-800-544-4440 or visit www.LifeExtension.com

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The Science of a Healthier Life®

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IN THIS EDITION OF *LIFE EXTENSION* MAGAZINE®

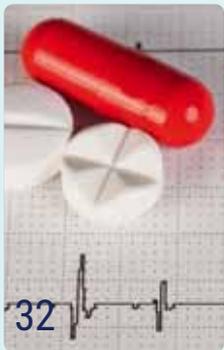


7 CONFIRMING WHAT WAS DISCOVERED DECADES AGO

A major study shows that excess sodium increases **cardiovascular** risk by **60%**.

20 CHALLENGES OF MALE AGING

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



32 ANTI-CANCER EFFECTS OF BETA-BLOCKER DRUGS

Beta-blocker drugs have been found to *inhibit* **cancer growth** and **cognitive impairment**.

40 HOW LYCOPENE PROTECTS THE HEART

Studies show that **lycopene** intake is associated with **26%** lower **stroke** risk and **37%** lower **mortality**.



50 SAFELY MANAGE BLOOD SUGAR LEVELS

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

63 BODY-WIDE EFFECTS OF TART CHERRY

Along with exercise endurance and muscle recovery, **tart cherry** helps reduce inflammation, preserve bone density, and boost cognition.

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