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June 2024

FEATURE ARTICLES

- 7 Can Lifestyles Offset Genetic Risks?
- 22 Cardiovascular Impact of Pomegranate
- 34 Safely Ease Persistent Back Pain
- 44 Restore Free Testosterone Levels
- 57 What is Bilberry?
- 67 Combat Venous Insufficiencies

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REPORTS



Page **34**
ON THE COVER
Ease Back Pain

A **clinical trial** showed that two plant extracts significantly **reduced** back pain for **79%** of patients in just **30 days**.



22 POMEGRANATE PROMOTES HEART HEALTH

Studies show that **pomegranate** promotes multiple aspects of **heart health**, from improved endothelial function to reduced platelet aggregation.



44 RESTORE YOUTHFUL FREE TESTOSTERONE

Reduced **free testosterone** increases health risks as well as feelings of fatigue. In a placebo-controlled **human trial**, a pomegranate-cacao blend **increased** critical **free testosterone** by **48%**.



57 WHAT IS BILBERRY?

Studies show that **bilberry** may protect against **eye** disorders like glaucoma and cataracts, as well as cardiovascular issues and type II diabetes.



67 SOLUTIONS: IMPROVE HEALTH AND APPEARANCE OF LEG VEINS

Two **flavonoids** derived from citrus were found to improve **vein** health including **varicose veins**, and chronic venous insufficiency.

DEPARTMENTS

7 DO HEALTHY LIFESTYLES OFFSET GENETIC HEART ATTACK RISK?

A study in the *New England Journal of Medicine* found that **four lifestyle choices** help protect against cardiovascular disease. Much **more** can be done to reduce the risk of heart attack and stroke, including preventive **blood testing**.

17 IN THE NEWS

Low brain levels of taurine in women linked to depression; low vitamin D underdiagnosed prior to wrist fractures; higher niacin intake

may lower ED risk; getting systolic blood pressure below **120 mmHg** reduces cardiovascular events.

61 ASK THE DOCTOR

Dr. Florencia Ziemke's unique program helps clients lose weight—and **keep** it off—by utilizing an app, telehealth, remote technology, and dietary changes.

71 WELLNESS PROFILE

International trainer Becca Tebon focuses on supplements, 17-minute functional workouts, and “resetting” after a setback.



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

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Do Healthy Lifestyles Offset Genetic Heart Attack Risk?



WILLIAM FALOON



Those with a high genetic risk of **coronary artery disease** are **91% more** likely to suffer an adverse **cardiac event** compared to people with low genetic risk.

A research team evaluated **cardiovascular disease** incidence among **55,685** participants in a study published in the *New England Journal of Medicine*.¹

The findings reveal that a **favorable lifestyle** is associated with a **46% lower** rate of **coronary artery disease** at *any* time point during the study period in people at high **genetic** risk.¹

This **46% lower** rate was based on a comparison to individuals at high genetic risk who did not adhere to **healthier lifestyles**.

What should perk your interest are the four **lifestyle** choices evaluated. To slash **cardiovascular disease** risk, all it took were:

- Healthy diet
- No current smoking
- Regular physical activity
- No obesity

Following just three of four of the above healthier **lifestyles** yielded benefits.

More aggressive management of vascular risks could have further lowered coronary disease incidence.

This study was not designed to measure **cardiovascular disease** risk factors in **blood** (like glucose, homocysteine, apolipoprotein B)² and blood pressure.

That might explain why there was *only* a **46%** reduction in the high genetic risk group who followed the favorable lifestyles.

This article describes what more can be done to reduce today's number one killer, i.e., **heart attack**, and also **ischemic stroke**.³



Genetic and **lifestyle** factors strongly influence one's risk of **coronary artery disease**.⁴

The purpose of a study published in the *New England Journal of Medicine* was to assess the effects of healthy lifestyles on **coronary artery disease** risk and the increase of coronary artery **calcification** in people with varying degrees of **family history** of cardiovascular issues.

DNA sequence was used to quantify genetic risk for coronary artery disease in this large group.

The primary study end point was a composite of events that included heart attack (myocardial infarction), coronary revascularization, and death from coronary causes.

One arm of the study also analyzed coronary **calcification** scores.

The relative risk of coronary events was **91% higher** among people at high **genetic** risk (top DNA quintile) compared to those at low genetic risk (bottom DNA quintile).

Effect of Favorable Lifestyles

Healthy diet, no current smoking, regular physical activity, and no obesity were associated with decreased rates of coronary artery disease in those with intermediate-to-high family history.

The riskiest behavior was **smoking**. Non-smokers were **44% less** likely to suffer a coronary event, despite **higher genetic risk**.

Lean individuals were **34% less** at risk compared to the **obese**.

Regular **physical activity** reduced coronary risk by **12%** and **healthy diet** reduced risk by **9%**.

Among participants in the **highest** genetic risk group, a **favorable lifestyle** was associated with a **46% lower** rate of coronary artery disease compared to high genetic risk individuals who were following unfavorable lifestyles.

A **favorable lifestyle** was also associated with significantly less coronary-artery **calcification** in each genetic risk category.

What is a “Healthy Diet”?

A **healthy diet** pattern was based on adherence to what was described as a heart-healthy diet as follows:

- Higher consumption of **fruits, nuts, vegetables, whole grains, fish, and dairy** products, and
- Reduced intake of **refined grains, processed meats, unprocessed red meats, sugar-sweetened beverages**, trans fats (one cohort only), and sodium (one cohort only).

The “healthy diet” patterns defined in this study resemble the **Mediterranean diet**, though vast **improvements** could be made to reduce coronary events further.



For instance, the majority of calories you consume should come from fruits, nuts, fish, whole grains, legumes, and other plant foods.

And limited amounts of your diet should be processed meats, unprocessed red meats, refined grains, and sugar-sweetened beverages. (Refer to box on page 10 to view a list of toxic foods to avoid.)

Diet patterns in this study were assessed by food-frequency questionnaires that can have high error rates. That's because people do not always have a strong recall of their real-world food and beverage intake.

These factors might explain why a “healthy diet” reduced the rate of coronary artery disease by *only 9%* whereas greater reductions occurred in high genetic risk people who avoided smoking and obesity and engaged in regular physical activity. (It's easy to identify smoking and obesity compared to data obtained from food questionnaires.)

Genetic Risk and Family History

The DNA genotype in this study was used in an attempt to correlate coronary artery disease with **family history**.

The authors found the **family history** of coronary artery disease an imperfect surrogate for genotype-defined risk.

They pointed out that the prevalence of **self-reported family history** tended to be *higher* among participants at high genetic risk than among those at low genetic risk.

This makes sense based on high family prevalence rates of **heart disease** being easier to recollect than low prevalence. In other words, it's easier to remember if your father suffered a heart attack than if he never did.

The **DNA phenotype** was able to demonstrate cardiac risk and its reduction in those following **healthier** lifestyle patterns.



The authors of this study concluded that:

“After quantifying both genetic and lifestyle risk among 55,685 participants in three prospective cohorts and one cross-sectional study, we found that adherence to a healthy lifestyle was associated with a substantially reduced risk of coronary artery disease within each category of genetic risk.”¹

More Should be Done!

We at **Life Extension** advocated decades ago for more aggressive interventions to prevent and treat **atherosclerosis**.

In addition to **heart attack** and **ischemic stroke**, arterial/vascular diseases also contribute to:

- Several types of dementia⁵⁻⁷
- Peripheral arterial disease⁸⁻¹⁰
- Heart failure¹⁰⁻¹²
- Renal artery stenosis^{8,13,14}
- Carotid artery stenosis and embolization¹⁵
- Kidney failure¹⁶
- Hypertension¹⁷
- Aortic calcification^{18,19}
- Mesenteric artery disease²⁰
- Erectile dysfunction²¹⁻²³
- Frailty^{24,25}
- Accelerated aging¹⁸

Family history of **cardiovascular disease** is a known risk factor. There are, however, specific **genetic influences**, such as **lipid** and **glucose** imbalances that can be reversed if caught in time.

Diagnostic Tests Enable Early Detection

Blood tests identify risk factors that are **correctable** before a catastrophic event strikes.

The panel on the next page evaluates common atherosclerotic biomarkers including **glucose, fasting insulin, homocysteine, C-reactive protein, and A1C**.

In people with *early*-stage insulin resistance, high **fasting insulin** can suppress **glucose** and **A1C**, thus masking a smoldering **type II diabetic** disorder. Serious tissue damage occurs during this **prediabetic** stage.

The time to reduce elevated **glucose + A1C + fasting insulin** is before full blown **type II diabetes** strikes.

And the period to control other damaging risk factors is before one suffers a **heart attack** or ischemic **stroke**.

No one interested in **healthy longevity** should tolerate **hypertension**. Effective medications are widely available to lower blood pressure.

The *New England Journal of Medicine* published study showed that those at **high genetic risk** for **cardiovascular disease** attain significant **protection** by following favorable lifestyles.

Even greater benefits can be achieved by controlling **risk factors** that are easily detectable with diagnostic testing.

Many of you purchased our comprehensive **Male or Female Blood Test Panel** earlier this year. If *any* vascular pathologies were detected, you should re-test your blood for these specific atherosclerotic factors after initiating corrective actions.

Be it lifestyle changes or new medications, you want to check and see if you are moving your **cardiovascular health** measures (like lipid and glycemic markers) into safer, cardio-protective ranges.

Please note that all **blood tests** are offered at **extra-discounted** prices until July 8, 2024.

For longer life,



William Faloon, Co-Founder
Life Extension

References may be found on page 12.



FOODS to REDUCE or AVOID²⁶

- Red Meat
- Overcooked Meats
- Butter
- Processed Red Meat (Hot Dogs, Bacon)
- Cured Ham (Nitrite/Nitrite-Preserved Meats)
- Most Frozen Meals
- Soda, Desserts, Candy
- Most Processed Foods
- Sugars
- Refined Grains (White Bread/White Grain Pasta)
- Excess Salt

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Triglycerides

MINERALS

Magnesium (serum)
Ferritin (measure of iron status)
Calcium
Potassium
Phosphorus
Sodium
Iron
Chloride

ORGAN FUNCTION

Kidney: creatinine, BUN, uric acid, BUN/creatinine ratio
Liver: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase

COMPLETE BLOOD COUNT (CBC)

Blood proteins: albumin, globulin, total protein, albumin/globulin ratio
Immune Cells including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
Red Blood Cells including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
Platelets

HORMONES

Free and Total Testosterone
DHEA-S
Estradiol (an estrogen)
TSH (thyroid function)
Vitamin D (25-hydroxyvitamin D)

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PSA (Prostate Specific Antigen)

After you order and receive our form, you can visit a blood-draw facility we suggest at your convenience in your area or the **Life Extension Nutrition Center** in Ft. Lauderdale.

FEMALE PANEL

GLUCOSE PROFILE

Insulin
Hemoglobin A1c
Glucose

CARDIAC MARKERS

C-Reactive Protein (high sensitivity)
Apolipoprotein B (ApoB)
Homocysteine
Total Cholesterol
LDL (low-density lipoprotein)
HDL (high-density lipoprotein)
Triglycerides

MINERALS

Magnesium (serum)
Ferritin (measure of iron status)
Calcium
Potassium
Phosphorus
Sodium
Iron
Chloride

ORGAN FUNCTION

Kidney: creatinine, BUN, uric acid, BUN/creatinine ratio
Liver: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase

COMPLETE BLOOD COUNT (CBC)

Blood proteins: albumin, globulin, total protein, albumin/globulin ratio
Immune Cells including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
Red Blood Cells including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
Platelets

HORMONES

Progesterone
Free and Total Testosterone
DHEA-S
Estradiol (an estrogen)
TSH (thyroid function)
Vitamin D (25-hydroxyvitamin D)

Lab tests are available in the continental United States and Anchorage, AK, only. Not available in Maryland.

Restrictions apply in MA, NY, NJ, and RI. Kits not available in PA. The Lab Test Sale expires on **July 8, 2024**.



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* BMC Complement Altern Med. 2019;19:97. Capros® is patent protected and a registered trademark of Natreon, Inc.

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REGULAR PRICE SALE PRICE

MALE AND FEMALE PANELS

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|---|---|------------------|-------|
| ○ | MALE PANEL (LC322582)
CBC/Chemistry/Lipids Panel • DHEA-S • PSA (prostate-specific antigen) • Homocysteine • C-Reactive Protein (high sensitivity) • ApoB • Free Testosterone • Total Testosterone • Estradiol • TSH for thyroid function • Vitamin D (25-hydroxyvitamin D) • Hemoglobin A1c • Insulin • Magnesium | \$299 | \$224 |
| ○ | FEMALE PANEL (LC322535)
CBC/Chemistry/Lipids Panel • DHEA-S • Estradiol • Homocysteine • ApoB • C-Reactive Protein (high sensitivity) • Progesterone • Free Testosterone • Total Testosterone • TSH for thyroid function • Vitamin D (25-hydroxyvitamin D) • Hemoglobin A1c • Insulin • Magnesium | \$299 | \$224 |

HEART HEALTH

- | | | | |
|---|--|------------------|----------|
| ○ | CARDIO CORE ESSENTIALS (LC100086)
Essential cardiovascular risk factors provide a low-cost analysis of your heart and vascular function. CBC • Chem/Metabolic Panel • Lipid/Cholesterol Profile • ApoB • C-Reactive Protein (high sensitivity) | \$89 | \$66.75 |
| ○ | NMR LIPOPROFILE® (LC123810)
The NMR Lipoprofile® directly measures LDL particle size and number as well as HDL particle number, total cholesterol, and triglycerides. It also provides a calculation of one's risk of insulin resistance by assessing abnormalities in lipoprotein markers. | \$99 | \$74.25 |
| ○ | NMR LIPOPROFILE PLUS* (LC100049)
In-depth analysis of cardiovascular risk markers including: NMR LipoProfile, C-Reactive Protein, Myeloperoxidase , and Oxidized LDL . | \$269 | \$201.75 |
| ○ | OXIDIZED LDL (LC123023)
Oxidized low-density lipoprotein (LDL) cholesterol is one of the main causes of the formation of atherosclerotic plaque in the arterial wall. This blood test measures levels of oxidized LDL. | \$75 | \$56.25 |
| ○ | MYELOPEROXIDASE (MPO)* (LC123006)
The myeloperoxidase (MPO) test measures levels of an enzyme that oxidizes low-density lipoprotein (LDL) cholesterol, which could lead to increased arterial plaque formation. | \$99 | \$74.25 |
| ○ | OMEGA-3 INDEX COMPLETE* (LC100066)
Beneficial for everyone! People not taking omega-3/fish oil should check their baseline Omega-3 Index to see if it is in the desirable or concerning range. Those taking Omega-3/fish oil supplements should take the test to see if they need to adjust their dosage. You want to target a range of 8%-12% for your Omega-3 Index score. | \$99 | \$74.25 |

CONDITION-SPECIFIC TESTS

- | | | | |
|---|---|------------------|----------|
| ○ | PERSONALIZED AMINO ACID HEALTH ASSESSMENT* (LC100090)
An in-depth analysis of amino acid metabolism provides insight into various health concerns, such as maldigestion, GI dysbiosis, neurological issues and more, with a personalized report of diet and supplementation suggestions. Provided as an at-home urine collection kit. | \$299 | \$224.25 |
| ○ | ENVIRONMENTAL POLLUTANTS PROFILE** (LC100089)
Toxic pollutants affect our bodies in several different ways. This test helps assess possible exposure to several common environmental pollutants by measuring their urinary metabolites. | \$149 | \$111.75 |

Know YOUR NUMBERS



- | | REGULAR PRICE | SALE PRICE |
|---|------------------|-----------------|
| ○ GI360™ ** STOOL ANALYSIS (LC100088)
Best and most advanced assessment of microbiome dysbiosis, diversity and digestive health, the GI360™ provides the most information about gut and microbiome health. Contains all the tests included in the CPP and CSAP along with cutting-edge markers of microbiome diversity and dysbiosis. | \$499 | \$379.25 |
| ○ TOXIC METALS PANEL (FECAL)*† (LC100076)
The results of fecal elemental analysis can help you identify and eliminate dietary exposure to toxic metals, while also assessing the body's natural excretion of metals. The panel tests Antimony, Arsenic, Beryllium, Bismuth, Cadmium, Copper, Lead, Mercury, Nickel, Platinum, Thallium, Tungsten, and Uranium. | \$170 | \$127.50 |
| ○ NEUROTRANSMITTER PANEL-COMP.**† (LC100085)
Serotonin, Dopamine, Epinephrine, Norepinephrine, GABA, Glutamate, Glycine, Histamine, PEA, DOPAC, 3-MT, Normetanephrine, Metanephrine, 5-HIAA, Tryptamine, Tyrosine, Tyramine, Taurine. Alterations in neurotransmitters play a significant role in contributing to symptoms such as cognitive disorders, depression, anxiety, diminished drive, fatigue and sleep difficulties, craving, addictions, pain, and more. | \$295 | \$221.25 |
| ○ PRO7 ADVANCED NUTRIGENOMIC PROFILE* (LC100097)
Analyzes genetics in 7 key areas of health (methylation, neurotransmitters, mitochondrial health, detoxification, inflammation, and more) and provides genetically targeted nutritional suggestions. | \$299 | \$224.25 |
| ○ APOE GENETIC TEST FOR ALZHEIMER'S AND CARDIAC RISK* (LC100059)
This simple at-home cheek swab reveals your ApoE genotype and association with risk of Alzheimer's and cardiovascular disease. | \$149 | \$111.75 |
| ○ FOOD SENSITIVITY PANEL-ELITE**† (LC100096)
This in-depth food sensitivity assessment measures both IgG and IgA response to 240 foods. | \$449 | \$336.75 |
| ○ GUT BARRIER PANEL** (LC900004)
Measure immune response (IgG/C3d & IgA) to three key GI markers associated with intestinal permeability and leaky gut: Candida, Zonulin, and Occludin. | \$105 | \$123.75 |

NEW TESTS

- | | | |
|--|------------------|-----------------|
| ○ HAIR LOSS PANEL (COMPREHENSIVE) (LC900005)
Deep dive into various factors underlying hair loss concerns, including hormones, thyroid, inflammation, and more! • E2 • Testosterone DHEA-s • DHT • TSH • fT4 • fT3 • rT3 • cortisol • insulin • ferritin • CRP | \$250 | \$187.50 |
| ○ HAIR LOSS PANEL (BASIC) (LC900006)
Check common factors associated with hair loss, like stress, thyroid concerns and inflammation. • DHT • TSH • Cortisol • Ferritin • CRP | \$99 | \$74.25 |
| ○ MOLD EXPOSURE MYCOTOXIN URINE TEST* (LC900007)
Concerned about mold exposure? This convenient at-home urine test detects exposure to 16 common mycotoxins (toxins produced by mold). | \$399 | \$299.25 |
| ○ ENVIRONMENTAL MOLD & MYCOTOXIN ANALYSIS* (LC900008)
Worried about mold in your home or office? Check for mold and mycotoxins by swabbing a dusty area in your home! | \$399 | \$299.25 |
| ○ BODY AND HOME MOLD & MYCOTOXIN COMBO TEST* (LC900009)
Combine the two tests above for additional savings to check if the mycotoxins in your body are the same as those in your home! | \$749 | \$561.75 |

WHOLE-BODY HEALTH

- | | REGULAR PRICE | SALE PRICE |
|--|------------------|-----------------|
| ○ MALE ELITE PANEL* (LC100016)
CBC/Chemistry/Lipids Panel • Free and Total Testosterone • Estradiol • Total Estrogens • DHEA-S • Progesterone • Pregnenolone • TSH • DHT • FSH • LH • Free T3 • Free T4 • Reverse T3 • IGF-1 • SHBG • Free and Total PSA • Vitamin D 25-OH • hs-CRP • Ferritin • TIBC • Homocysteine • Insulin • Hemoglobin A1c • Cortisol • ApoB • Magnesium | \$575 | \$431.25 |
| ○ MALE BASIC HORMONE PANEL (LC100012)
DHEA-S • Estradiol • Total and Free Testosterone • PSA | \$75 | \$56.25 |
| ○ FEMALE ELITE PANEL (LC100017)
CBC/Chemistry/Lipids Panel • Free and total Testosterone • Estradiol • Total Lipids • Estrone • DHEA-S • Progesterone • Pregnenolone • DHT • FSH • LH • TSH • Free T3 • Free T4 • Reverse T3 • IGF-1 • SHBG • Vitamin D 25-OH • hs-CRP • Ferritin • TIBC • Homocysteine • Insulin • Hemoglobin A1c • Cortisol • ApoB • Magnesium | \$575 | \$431.25 |
| ○ FEMALE BASIC HORMONE PANEL (LC100013)
DHEA-S • Estradiol • Total and Free Testosterone • Progesterone | \$75 | \$56.25 |
| ○ WEIGHT LOSS PANEL-COMPREHENSIVE (LC100028)
CBC/Chemistry/Lipids Panel • DHEA-S • Free and Total Testosterone • Estradiol • Progesterone • Cortisol • TSH • Free T3 • Free T4 • Reverse T3 • Insulin • Hemoglobin A1c • Vitamin D 25-hydroxy • Ferritin • C-reactive protein (high sensitivity) | \$275 | \$206.25 |
| ○ HEALTHY AGING PANEL-COMPREHENSIVE (LC100026)
CBC/Chemistry/Lipids Panel • C-reactive protein (high sensitivity) • Vitamin B12 • Folate • Homocysteine • Vitamin D 25-hydroxy • Hemoglobin A1c • TSH • Free T3 • Free T4 • Ferritin • Urinalysis • ApoB • Insulin | \$249 | \$186.75 |
| ○ COMPLETE HORMONE & METABOLITES PROFILE (HUMAP)**† (LC900001)
Comprehensive assessment of hormones and their metabolites. This urine test helps assess how your body metabolizes hormones, providing insight into endogenous hormone secretion, supplemental hormone utilization, enzyme activity, oxidative stress. | \$299 | \$224.25 |

CBC/CHEMISTRY/LIPIDS PANEL

These **CBC/Chemistry/Lipids Panel** tests are included in the popular **Male and Female Panels**, and other panels on this page so you don't have to order them separately.

CARDIOVASCULAR RISK

Total Cholesterol • HDL Cholesterol • LDL Cholesterol Triglycerides Cholesterol/HDL Ratio • Estimated CHD Risk • Glucose

LIVER FUNCTION

AST (SGOT) • ALT (SGPT) • LDH • Total Bilirubin • Alkaline phosphatase

KIDNEY FUNCTION

BUN • Creatinine • BUN/Creatinine Ratio • Uric Acid

BLOOD PROTEINS

Total Protein • Albumin • Globulin • Albumin/Globulin Ratio

BLOOD COUNTS

Red Blood Cell Count • White Blood Cell Count • Eosinophils Neutrophils (Absolute) • Lymphs (Absolute) • Eos (Absolute) Baso (Absolute) • RDW • Monocytes (Absolute) • Monocytes Lymphocytes • Platelet Count • Hemoglobin • Hematocrit MCV • MCH • MCHC • Neutrophils

BLOOD MINERALS

Calcium • Potassium • Sodium • Chloride • Iron

The sale price for the **CBC/Chemistry/Lipids Panel** alone is **\$26.25**. (LC381822)

This is NOT a complete listing of LE lab test services.
Call 1-800-208-3444 for additional information.

* This test is packaged as a kit.

† Not available in NY.

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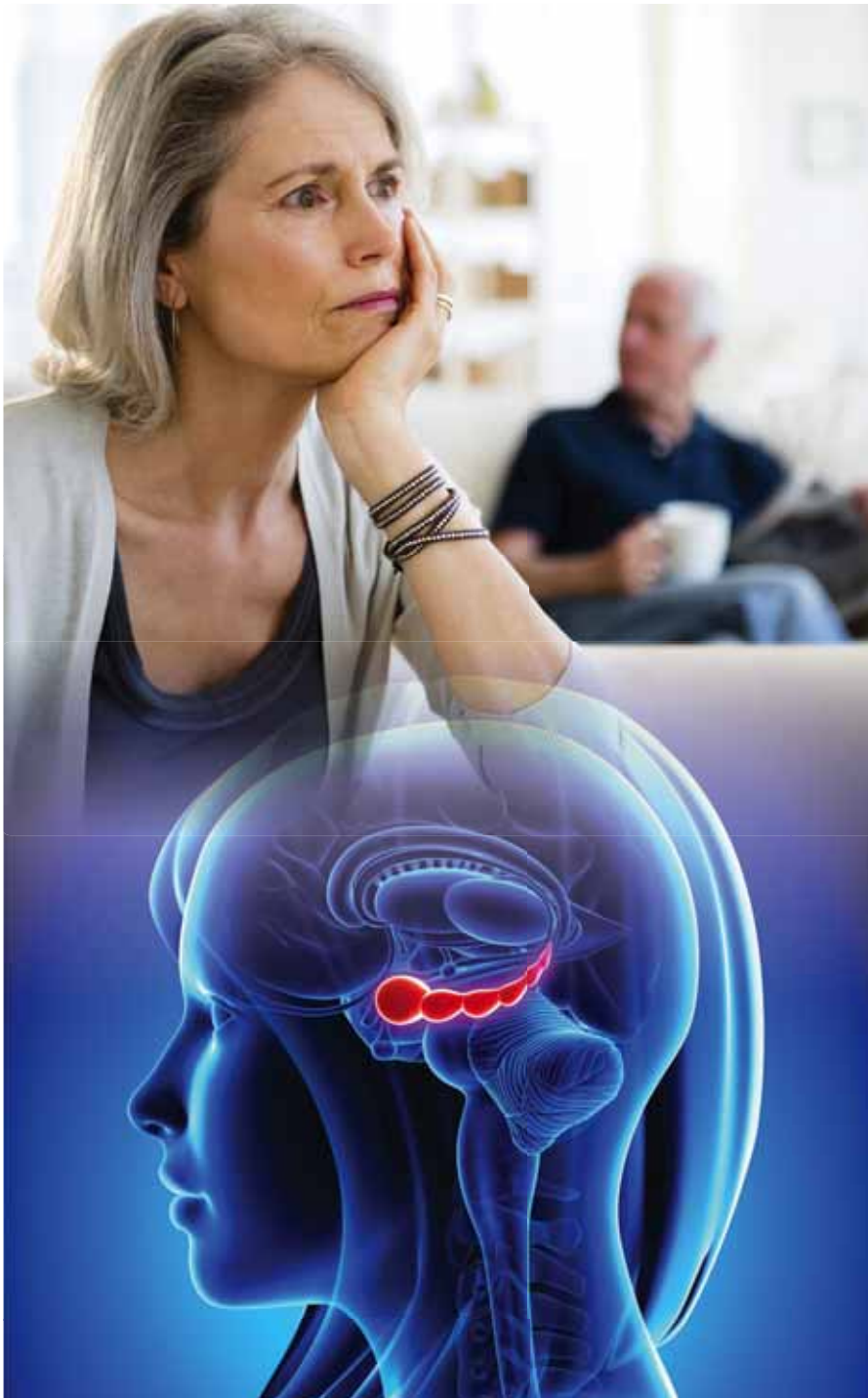
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In the News



Low Taurine Levels Linked to Depression in Women

Low levels of **taurine** within the hippocampus are associated with major depressive disorder in young women, according to a study published in *Biological Psychiatry*.*

The hippocampus is part of the brain that plays a major role in memory and emotion.

The study included 41 unmedicated women, 18-29 years old, with major depressive disorder, and 43 healthy controls.

To measure taurine levels in the hippocampus the researchers used proton magnetic resonance spectroscopy at 7T which is an enhanced version of a tool that shows metabolic changes occurring in the body.

“The key finding of this study is that the concentration of taurine in the hippocampus of young women with major **depressive** disorder was lower by **19%** compared with that of young women in the healthy controls group,” the researchers stated.

Editor’s Note: Taurine supplementation may help relieve some symptoms of major depressive disorder, the researchers asserted.

* *Biol Psychiatry*. 2023 Sep 9:S0006-3223(23)01558-5.

Vitamin D Insufficiency Under-Detected Prior to Wrist Fractures

A significant number of patients with distal radius (wrist) fractures had shown signs of having osteoporosis prior to their fractures, but they did not receive this diagnosis or treatment for it, a recent study revealed.*

The study evaluated 102 people, 46-91 years of age, who underwent surgery for distal radius fracture.

Blood levels of vitamin D were used to help determine whether there was an indication for prior osteoporosis diagnosis. In addition, a questionnaire was completed for a guideline-based osteoporosis diagnosis. Fracture risk was assessed separately by the Fracture Risk Assessment Tool®, which includes factors such as age, sex, weight, height, medical history, and bone mineral density.

The results showed monthly levels of **vitamin D** over the course of a year averaged only **23 ng/mL**, which are significantly below recommend levels. Despite indications for an osteoporosis diagnosis prior to the fracture in three-quarters of the patients, less than half received one. The fracture risk assessment tool showed that **57%** of the patients had indications for receiving specific osteoporosis treatment before the fracture incident.

Editor's Note: These study results highlight the importance of evaluating osteoporosis and fracture risk in aging people, which should include routine monitoring of vitamin D levels. **Life Extension®** suggests that optimal levels of vitamin D are between **50-80 ng/mL**.

* *Arch Orthop Trauma Surg* (2024).
<https://doi.org/10.1007/s00402-024-05199-4>.





Erectile Dysfunction Risk Reduced with Greater Intake of B Vitamin Niacin

An association was seen between increased intake of the B vitamin niacin and a lower risk of erectile dysfunction (ED), a recent study found.*

Participants included 3,184 men who enrolled in the 2001–2004 National Health and Nutrition Examination Survey (NHANES), 863 of whom had ED. The men responded to questionnaires concerning food intake for two 24-hour periods, which were analyzed to determine niacin content.

As niacin intake increased, a decrease was observed in ED risk.

After adjusting for factors that might influence ED risk (such as age, body mass index, smoking, drinking status, cardiovascular disease, high cholesterol, hypertension, diabetes and testosterone levels) men whose niacin intake was among the top **one-third** of participants had a risk of ED that was **56%** less than those who had the lowest intake of the vitamin.

* *Asian J Androl.*:202378, January 30, 2024.

Reducing Systolic Blood Pressure to Below 120 mmHg Lowers Cardiovascular Events

Findings from a clinical trial presented at the American Heart Association’s Scientific Sessions 2023 support the recommendation of achieving a systolic blood pressure of less than 120 mmHg to help protect against cardiovascular events.*

The ESPRIT trial randomized **11,255** hypertensive adults with established cardiovascular disease or at least two major risk factors for cardiovascular disease, to receive either intensive blood pressure therapy that targeted systolic blood pressure below **120 mmHg** or standard treatment that targeted systolic pressure to only less than **140 mmHg** for a period of three years.

After two years, compared with standard treatment, intensive treatment prevented **12%** of heart attacks, stroke, revascularization procedures, death from cardiovascular causes, or hospitalization or emergency department visits for heart failure.

Intensive treatment was associated with a **39% reduction** of mortality from cardiovascular causes and **21% decrease** in all-cause **mortality**.

Editor’s Note: Those in the intensive treatment group were prescribed several classes of drugs and received higher doses than the standard treatment group.

* <https://newsroom.heart.org/news/reducing-systolic-blood-pressure-to-less-than-120-mm-hg-reduced-cardiovascular-event-risk>





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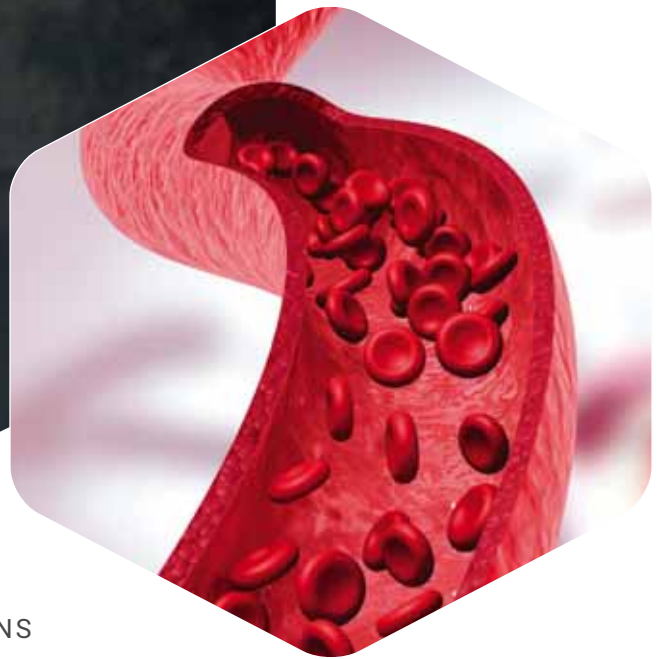
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POMEGRANATE

Promotes
Heart Health



BY RICHARD STEVENS

Heart disease is the world's leading cause of death.^{1,2} Yet many of the risk factors associated with it are largely preventable or controllable through changes in diet or nutrition.³

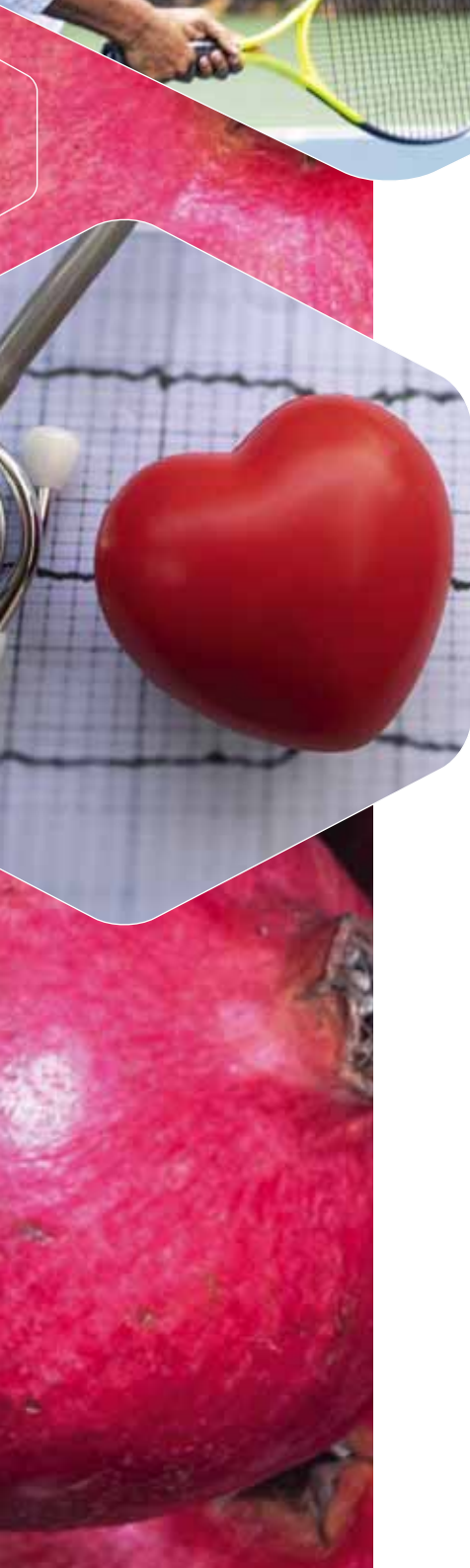
Pomegranate is a nutrient-dense superfood that has been consumed for millennia and has become popular all over the world.⁴ It is packed with compounds that have been shown in preclinical models to possess antioxidant and anti-inflammatory effects.^{4,5}

One of its most impressive properties demonstrated in preclinical settings is its ability to protect the **heart** in multiple ways, including by preventing and even reversing **endothelial dysfunction**⁶—a major contributor to **atherosclerosis**, the buildup of plaque in the arteries.⁷

Its benefits for the **heart** are enormous. Across many different kinds of studies, pomegranate extracts have been found to reduce blood clots in animals,⁸ reduce cholesterol and triglycerides in animals,⁹ improve blood flow in young healthy adults,¹⁰ and lower blood pressure in humans.^{11,12}

In a **clinical trial**, pomegranate has been shown to *reverse* atherosclerotic changes in patients with carotid artery stenosis.¹¹

These benefits may reduce risks for **cardiovascular diseases**.



A Nutritional Powerhouse

Pomegranate has been recognized as one of the oldest known edible fruits.⁴

All parts of the pomegranate plant, including the fruit, leaves, peel, seeds, and flowers, are packed with beneficial compounds. These include anthocyanins, organic acids, flavonoids, and tannins.⁴

These potent bioactive compounds, found in **pomegranate fruit, juice, and extracts**, have been shown to have health-promoting properties, with the potential to help improve or control inflammation, diabetes, blood lipid levels, and more. A number of clinical trials have confirmed the benefits, especially for blood pressure.⁴

By preventing and reversing **endothelial dysfunction**, pomegranate may help protect the cardiovascular system against the life-threatening processes that lead to high blood pressure, atherosclerosis, and eventually heart attacks and strokes.^{4,6}

Endothelial dysfunction affects the delicate tissue (**endothelium**) lining the inside of blood vessels. It is a major contributor to **atherosclerosis**, the buildup of plaque in the arteries. Atherosclerosis, in turn, is the leading cause of **heart disease, heart attacks, and strokes**.^{7,13}



Improving Lipid Health

Atherosclerosis is a complex process that involves **inflammation, endothelial dysfunction**, and active **lipid accumulation**. There is convincing evidence that cholesterol-lowering drugs, targeting low density lipoprotein (LDL) and related particles, can reduce progression of plaque and prevent cardiovascular events.¹⁴

Animal models have shown that **pomegranate** can reduce blood levels of total cholesterol, **LDL cholesterol** (the “bad” kind that contributes to atherosclerosis), and **triglycerides** (another type of fat linked to risk for heart disease).¹⁵⁻¹⁸

Oxidation of LDL cholesterol makes it even more dangerous than normal LDL. Oxidized LDL accumulates in blood vessel walls more easily and accelerates the progression of atherosclerosis. Pomegranate decreases the oxidation of lipids.^{19,20}

In **human** studies, consuming pomegranate juice has significantly reduced blood levels of **oxidized LDL**.^{19,21}

Restoring Blood Vessel Function

Perhaps the most important sign of **endothelial dysfunction** is an impaired ability of blood vessels to **dilate** (widen) when necessary.²²

Both preclinical and clinical evidence demonstrate that pomegranate extract improves **endothelial function** and promotes arterial relaxation and dilation.^{23,24}

How Endothelial Dysfunction Leads to Heart Disease

Many people think of **blood vessels** as the body’s pipes, passively carrying blood through them. Nothing could be further from the truth.

Blood vessels are **active** structures that play as big a role in blood supply as the heart itself. The blood vessels pulse and move with each heartbeat and actively change their diameter in response to the body’s demands. This helps maintain normal **blood pressure** and adequate **blood flow**.

The endothelium is a single layer of cells that lines the inner wall of every blood vessel. It produces signaling compounds and responds to chemical and physical signals, helping to control **vascular reactivity** (the vessel’s response to a stimulus).¹³

When functioning optimally, the endothelium helps regulate blood vessels’ tone, size, and function.

Vascular health depends on a balance between signals that cause blood vessels to **dilate** (widen) and other signals that cause them to **constrict** (narrow).¹³

This is particularly true in the **arteries**, the blood vessels that carry blood away from the heart to most tissues of the body.

Unfortunately, the **endothelium** can become damaged with advancing age. Other factors, including oxidative stress, inflammation, high blood pressure, and elevated blood glucose, can also harm the endothelium, impairing its ability to **dilate**. Narrowed and inflexible arteries can reduce vital blood flow.^{6,22}

This **endothelial dysfunction** is a direct contributor to high blood pressure and the development of **atherosclerosis**, the cause of most heart diseases.²²

WHAT
YOU
NEED
TO
KNOW

Pomegranate accomplishes this by targeting several compounds, including:

- **Nitric oxide.** This is one of the most important **vasodilators**, which means it induces the dilation of arteries. In preclinical studies, scientists have found that pomegranate is supportive of vascular/endothelial health through a **dual action** of **increasing** the enzymes that support nitric oxide production^{22,25-27} but also **neutralizing** compounds such as **peroxynitrate**, an enzyme that can be damaging to nitric oxide production.²⁸
- **Thromboxane A2.** This **vasoconstrictor** causes the *narrowing* of arteries.²⁹ Pomegranate extract *inhibits* an enzyme required to produce thromboxane A2,³⁰ lowering its levels and reducing constriction of arteries.

Preventing Blood Clots

Endothelial dysfunction and atherosclerosis increase the risk of abnormal **blood clots**. Most heart attacks and strokes are caused by clots forming in diseased arteries, which reduces blood flow to the heart or brain.^{14,31}

Fortunately, the same thromboxane that is *blocked* by pomegranate also influences the function of **platelets**, the tiny cells in our blood that form clots.

Pomegranate Improves Endothelial Health

- **Heart disease** is the most common cause of death worldwide.
- **Endothelial dysfunction**, damage to the layer of cells lining the inside of arteries, is a major contributor to atherosclerosis and risk for cardiovascular disease.
- **Pomegranate** and its extracts contain many antioxidant and anti-inflammatory nutrients that can shield against a wide range of chronic age-related diseases.
- Many of the health benefits of pomegranate apply specifically to blood vessel health, protecting against **endothelial dysfunction** and **atherosclerosis** in animal and human studies. This reduces the risk of developing cardiovascular disease.
- Even in subjects already experiencing signs of **heart disease**, pomegranate intake has been shown to reduce symptoms.

Thromboxane A2 activates platelets and causes their aggregation. Pomegranate *reduces* thromboxane A2.^{29,30}

In animal studies, pomegranate juice and extract *reduce* the **clotting** of human platelets, even when exposed to stimuli that would normally cause their aggregation.^{8,30}

Improving Blood Pressure

High blood pressure is a contributor to initiation and development of atherosclerosis.³²

One of the most common classes of drugs used to lower blood pressure are **ACE inhibitors**, which block an enzyme involved in blood pressure.

Preclinical and clinical research discovered that, like these medications, pomegranate *inhibits* ACE activity.^{33,34} Through this and other mechanisms, it is able to help reduce elevated blood pressure, thereby protecting blood vessel health and lowering the risk of **heart disease**.¹²



In people with **high blood pressure**, two weeks of pomegranate intake *decreased* blood ACE activity by **36%**.³³ In this and other human studies, pomegranate led to a significant reduction in both **systolic** (top number) and **diastolic** (bottom number) blood pressure.^{12,35}

In one study of subjects with **atherosclerosis** in the carotid artery, which delivers blood to the brain, head, and neck, pomegranate juice intake reduced **systolic blood pressure** up to **12%**.¹¹

Those with high blood pressure should use an **at-home** blood pressure monitor to target **blood pressure** below **120/80** throughout the day and night.

With aging, **anti-hypertension** drugs are often required in addition to lifestyle changes to achieve optimal blood pressure readings.

Controlling Blood Glucose

Poor control of **blood glucose** levels is another powerful contributor to endothelial dysfunction and atherosclerosis.^{6,13}

In animal studies, **pomegranate seed-oil extract** improved **insulin sensitivity** and reduced **fasting blood glucose** levels.^{36,37} In studies of patients with **type II diabetes** or impaired glucose control, pomegranate juice improved pancreas function, insulin sensitivity, and blood glucose control.^{38,39}

Pomegranate extract has been shown to *suppress* the glycation of proteins and prevent their accumulation, even in a high-sugar diet.⁴⁰ Glycation is a chemical reaction whereby sugars permanently attach themselves to proteins, fats, or nucleic acids. This is a highly destructive process that damages tissues, including those in the arteries.⁴¹

Reducing Atherosclerotic Plaques

Through all these actions, pomegranate use has a profound impact on blood vessel health.

In studies of rodents and pigs, **pomegranate extract** is capable of reversing **endothelial dysfunction**.^{42,43}

Animal models of accelerated **atherosclerosis** also show that pomegranate prevents and reverses the progression of atherosclerotic plaque.

For example, rodent studies showed that **pomegranate juice** or extract helped maintain healthy arteries and significantly slowed the progression of **atherosclerosis**.^{44,45} In a mouse study, pomegranate reduced the size of atherosclerotic plaques by **44%**.²¹

Human trials have also found striking effects on **cardiovascular disease** outcomes.

One clinical study that evaluated patients with **atherosclerosis** in the **carotid arteries** found that pomegranate juice consumption *decreased* the extent of atherosclerotic plaque by up to **35%** after a year. Those who did not receive pomegranate had a **9% worsening** of atherosclerosis.¹¹

In adults hospitalized with unstable angina (chest pain at rest due to inadequate blood flow) or heart attack, one glass of pomegranate juice per day for five days, as an add-on to standard treatment, significantly reduced the frequency, intensity, and duration of **angina** (chest pain) episodes. It also reduced levels of a marker of oxidative stress.⁴⁶

Another study in patients with **heart disease** found that while exercise-induced **ischemia** (reduced blood flow) of the heart increased in a control group over three months, patients receiving pomegranate had a significant *decrease*.⁴⁷

These studies show how pomegranate may help reduce risk for atherosclerosis and cardiovascular disease *and* help people with existing heart disease.

Summary

Pomegranate is a rich natural source of antioxidant and anti-inflammatory nutrients. Extracts of pomegranate have been found to help reduce risk factors for **atherosclerosis** and **cardiovascular disease**.

Pomegranate and its extracts may be capable of preventing and *reversing* signs of **endothelial dysfunction**, blood vessel damage that contributes to atherosclerosis and cardiovascular events like **heart attack** and **stroke**.

Pomegranate also improves other risk factors that contribute to cardiovascular disease, including blood pressure, blood glucose, and oxidation of lipids.

Through all of these actions, pomegranate and its extracts could reduce the risk of cardiovascular disorders and relieve symptoms in people already diagnosed with heart disease. ●

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



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

Taurine

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

Lithium

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

Spermidine

In epidemiological studies, higher intake correlates with longer healthspan.⁹⁻¹¹ A clinical study showed **spermidine** supplementation *improved* memory scores.¹²

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

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- **Taurine** 5,000 mg
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These nutrients may promote **healthy aging** by supporting cardiovascular health, exercise performance, and cognitive function.



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

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Ginger



Safely BANISH BACK PAIN



Chinese Chaste Tree

BY MICHAEL DOWNEY

According to national survey data, **8.2%** of American adults have chronic, severe back pain, and about **75%** of those have difficulties with mobility.¹

Many pain medications are associated with side effects, prompting people to seek alternative treatments.²⁻⁶

Scientists identified **two plant-derived extracts** that they believed could potentially **reduce back pain** without adverse effects.

When these extracts were *combined*, **79%** of patients in a **clinical study** reported a *significant reduction* in back pain in just 30 days.⁷

These results suggest that taking these plant-derived ingredients *together* may deliver a drug-free improvement in **back pain**.

Back Pain is Widespread

Back pain can severely limit mobility and daily activities. It is the leading cause of work limitations worldwide.⁸

About **50%-80%** of adults will experience at least one episode of **back pain** during their lifetime. **Low back pain** is most prevalent in those aged **75 years** and older.⁸

Many people turn to **non-steroidal anti-inflammatory drugs (NSAIDs)** like ibuprofen (Advil®, Motrin®), naproxen (Aleve®), acetaminophen (Tylenol®) or high-dose aspirin to treat it.

But these medications can come with side effects, including increased risk of heart attack, stroke, kidney damage, and liver failure.⁹

Others turn to **cortisone injections** into their back that may work temporarily, but long term usage can contribute to progression of arthritis,¹⁰ osteoporosis,¹⁰ and cartilage damage.¹¹

Searching for a safer option, scientists evaluated several **plant-derived** compounds. Two extracts emerged as promising candidates for safe resolutions of back pain.

Chinese Chaste Tree and Ginger

Chinese chaste tree, also known as **Five-leaf chaste tree**, is a flowering shrub that grows in parts of Asia and the Middle East. Its scientific name is *Vitex negundo*.¹²

It is rich in **phytoactives** (plant-based compounds) and has long been used in traditional medicine to treat a range of ailments.

In ayurveda (Indian traditional medicine) it is known for its anti-inflammatory, antimicrobial, hepatoprotective, analgesic, and anti-rheumatic activity. Researchers noted that in ayurvedic medicine, Chinese chaste tree is called “the remedy for all diseases.”^{13,14}

Ginger is a flowering plant that originated in Southern Asia. Its root has been used in Eastern cuisine and traditional medicine for centuries.¹⁵

Ginger root contains the potent compound **gingerol**, known for its ability to reduce pro-inflammatory proteins. This may explain why ginger has shown promise in treating various forms of pain.¹⁵

To study the *combined* effect of these plants on **back pain**, investigators blended extracts of **chaste tree leaves and ginger root**. This blend was then evaluated in a **human trial**.

Robust Pain Relief

Scientists enlisted 72 men and women, aged 18-60, who had experienced occasional **back pain** for under a year, with a most recent episode of back pain that lasted 7–12 weeks.⁷

In this **clinical trial**, participants were randomized to receive either a **placebo** or **200 mg** of the **chaste tree-ginger** extract blend twice daily.



Ground and Sliced Ginger



Chinese Chaste Tree
Leaf and Fruit



WHAT
YOU
NEED
TO
KNOW

Lasting Relief for Back Pain

- **Back pain** can make life miserable, but pain-relieving drugs come with serious health risks.
- **Two** plant-derived extracts have demonstrated safe and significant relief of **back pain**.
- In a clinical study, a blend of **Chinese chaste tree** and **ginger** extracts significantly reduced back pain in **79%** of patients while improving functional activity and bending flexibility.
- Together, these two extracts may reduce **back pain**.

After **30 days**, among those taking the **plant extract** combination:⁷

- **79%** reported clinically meaningful improvement in lower back **pain intensity** versus **6%** receiving **placebo**,
- **76.5%** reported clinically meaningful improvement in **functional activity** versus **30%** receiving **placebo**, and
- Subjects had a **40%** improvement in **bending flexibility** versus **17%** in the **placebo** group.

How They Work

Pre-clinical research shows that extracts of **Chinese chaste tree** and **ginger** reduce factors in the body like **NF-kB (nuclear factor-kappa B)** and **xanthin oxidase** that drive persistent **inflammation**.¹⁶⁻²⁰

For many pain sufferers, suppressing **pro-inflammatory** factors resolves chronic back discomforts.

Summary

Back pain can severely harm quality of life.

Chronic use of drugs commonly used to treat it are linked to serious side effects.

Seeking safer, long-term options, scientists identified **two plant-derived** extracts with anti-inflammatory and analgesic effects.

In a clinical trial, a blend of **Chinese chaste tree** and **ginger** extracts reduced **pain** intensity, and increased functional activity and bending flexibility. •

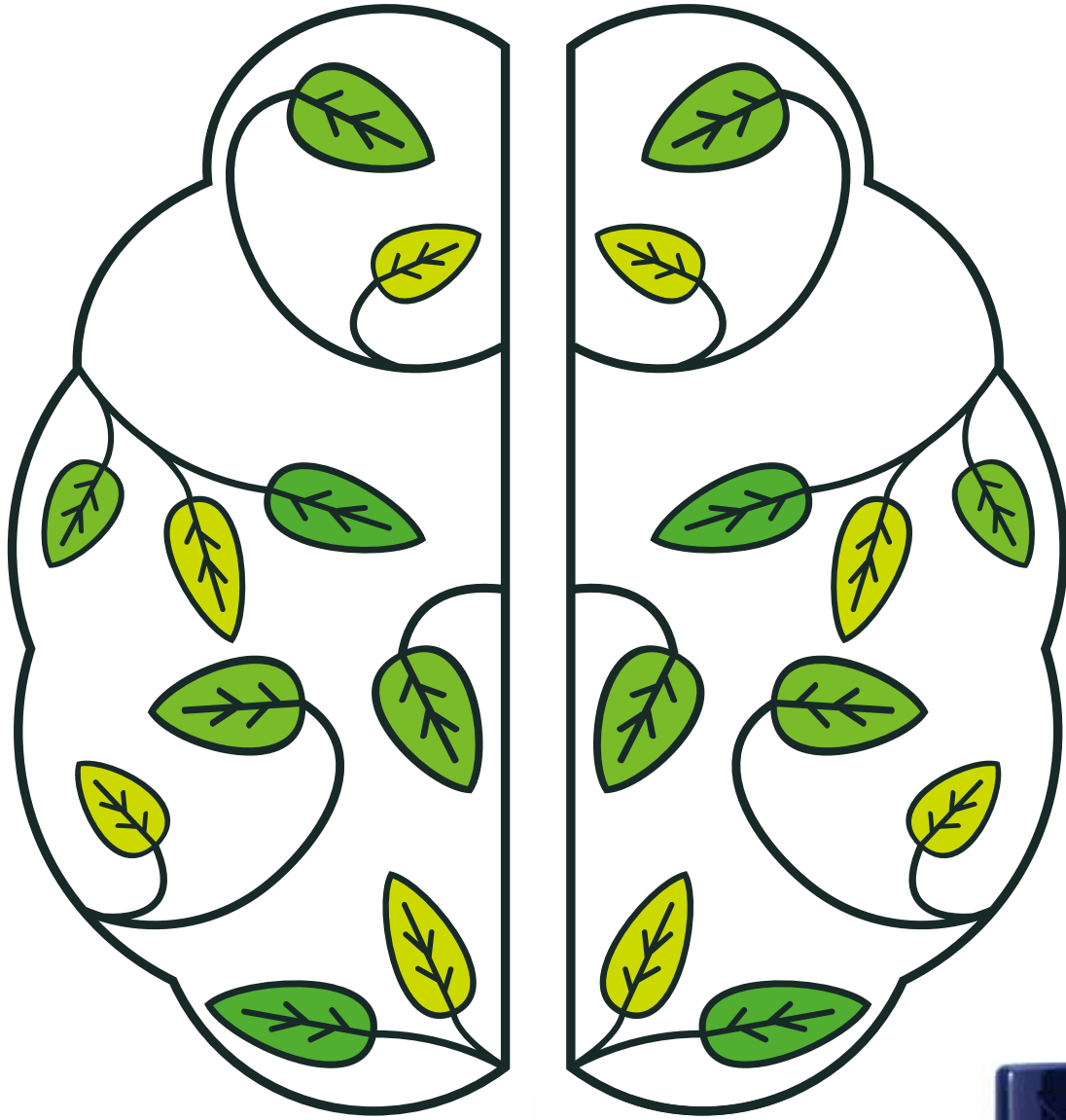
If you have any questions on the scientific content of this article, please call a **Life Extension** Wellness Specialist at 1-866-864-3027.

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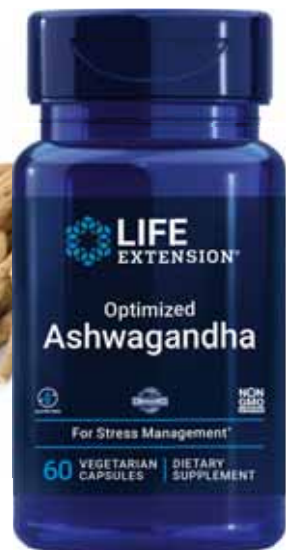
- Support a healthy response to everyday stress
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Optimized Ashwagandha provides **standardized** leaf and root **extracts** at a low cost.



Item #00888 • 60 vegetarian capsules

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- Encourages cellular health and a healthy immune response
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Vegan Vitamin D3

Item #02422 • 125 mcg (5000 IU)
60 vegan capsules

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- Helps maintain a healthy immune response
- Derived from algae (not animals!)

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Vegetarian DHA

Item #01640 • 30 vegetarian softgels

- Supports healthy cognitive function at any age
- May support healthy mood in adults
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Individuals consuming more than 50 mcg (2,000 IU)/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. Do not exceed 10,000 IU per day unless recommended by your doctor. Vitamin D supplementation is not recommended.

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Magnesium is a sweet way to prioritize whole-body health—especially the heart and bones.

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VERIFIED CUSTOMER
REVIEW

Item #02107
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CAUTION: If taken in high doses, magnesium may have a laxative effect. If this occurs, divide dosing, reduce intake, or discontinue product.

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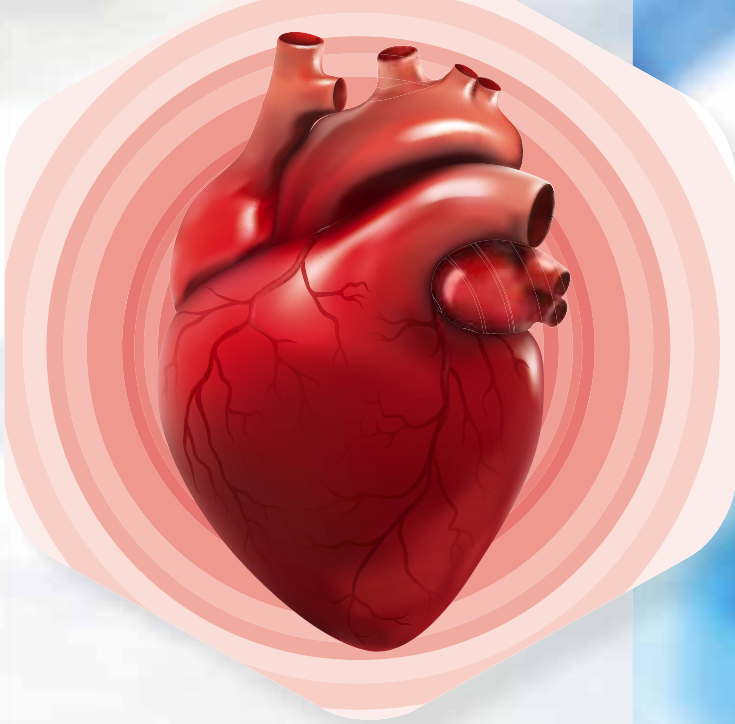
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Restore Youthful
FREE
Testosterone





BY MICHAEL DOWNEY

As men age, they frequently experience symptoms including low libido, erectile dysfunction, reduced strength/muscle mass, fatigue, and even depression.¹⁻³

Many of these issues are associated with **low testosterone**.

With age, testosterone levels fall at an average rate of about **1%-2%** each year.²

But the *real problem* is lack of testosterone in its **free, biologically active** form.

In a **clinical study**, aging men who received a blend of plant-based nutrients increased their **free testosterone** levels by **48%**.⁴

The benefits included a nearly **25% increase** in a measure of strength and a **19% improvement** in symptoms like low libido, exhaustion, anxiety, and feeling burned out.⁴

Dangers of Low Testosterone

Testosterone is a hormone crucial for development of the male reproductive system and impacts many different functions throughout the body. Common **low testosterone** symptoms include diminished sexual desire, erectile dysfunction, fatigue, reduced muscle mass and strength, and overall loss of youthful well-being.

Testosterone deficiency in men has been correlated with a greater risk of:⁵⁻¹²

- Cardiovascular disease,
- Osteoporosis,
- Chronic inflammation,
- Neurodegeneration, including cognitive decline and Alzheimer's disease,
- Metabolic syndrome and type II diabetes,
- Prostate cancer,
- Depression, and
- All-cause mortality.

Importance of Free Testosterone

Raising free **testosterone levels** in aging men is critical.

Testosterone circulates in the blood in two forms, bound to sex hormone-binding globulin (SHBG), albumin, and other proteins; and as unbound **free testosterone**.¹³

The most biologically active form is **free testosterone**, and people are often surprised to learn that only up to **3%** of their testosterone is in this bioactive “free” form.¹⁴

This leaves about **97%** of **total testosterone** that is not available for the body to use. It is not available to the cells because it is bound to proteins in the blood.

With age, critical **free testosterone** levels tend to decline.¹³

Overweight men are at an even higher risk for low testosterone.¹³ Being overweight or obese is associated with increased levels of the enzyme **aromatase**, which converts testosterone into **estrogen**.^{15,16}

Pomegranate and Cacao Boost Testosterone

Seeking a safe and drug-free way to raise **testosterone** levels, scientists took note of a study presented at an endocrinology conference over a decade ago.

The study found that in healthy adults, intake of **pomegranate** juice for just **two weeks** increased salivary testosterone levels by **23%-27%**. Measures of mood and well-being also improved.¹⁷

These findings inspired researchers to screen hundreds of **plant extracts** and nutrients for their ability to raise **testosterone** levels.



Pomegranate

Cacao



WHAT
YOU
NEED
TO
KNOW

Boost Testosterone for Better Health

- Around age 30, testosterone levels in men begin to drop steadily, especially biologically active **free testosterone**.
- **Low testosterone** is associated with erectile dysfunction, virility loss, fatigue, low strength, and serious health issues including heart disease, diabetes, cognitive decline, and all-cause mortality.
- In a human trial, a blend of **pomegranate** and **cacao seed** extracts increased **free testosterone** by **48%** and led to increased strength, reduced stress, and improvements in symptoms like low libido, exhaustion, and depression.
- Preclinical studies show that the flavonoid **luteolin** may also support **testosterone** production and prevent its conversion into estrogen.
- Combining luteolin with pomegranate and cacao extracts may help men maintain healthy, youthful free testosterone levels at any age.

In a study using testes cells from mice, researchers confirmed that **pomegranate extract** raised testosterone production.¹⁸

In the same study, they discovered that an extract of **cacao seed**, from the beans used to make cocoa and chocolate, *also* significantly increased testosterone production.¹⁸

Researchers then combined **pomegranate** and **cacao seed** extracts and found that *together*, they boosted **total testosterone** levels in rats by over **72%** in just **six weeks**.^{19,20}

Human Trials

To evaluate pomegranate and cacao extracts in **humans**, researchers gave men aged 36 to 55 either a blend of these extracts or a placebo.

After eight weeks, levels of **free testosterone** in men receiving **400 mg** of the **pomegranate-cacao blend** were elevated by over **48%** compared to baseline.⁴

In addition, in men taking the **pomegranate-cacao blend**:⁴

- Overall well-being improved,
- Measures of stress dropped by **26%**, and
- Hand grip strength increased by almost **25%**.

The **pomegranate-cacao** group also reduced their symptoms on the **Aging Males' Symptoms** scale by **19%**.⁴ These symptoms include:²¹

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

Raising testosterone in younger men is more challenging, because their levels have not yet dropped as much.

Surprisingly, even in men aged **21 to 35**, in a separate trial, a **pomegranate-cacao** blend increased **free testosterone** by **25%**. After four weeks of supplementation, hand grip strength and the circumference of the upper arm significantly increased as well.¹⁹

Luteolin Supports Testosterone Production

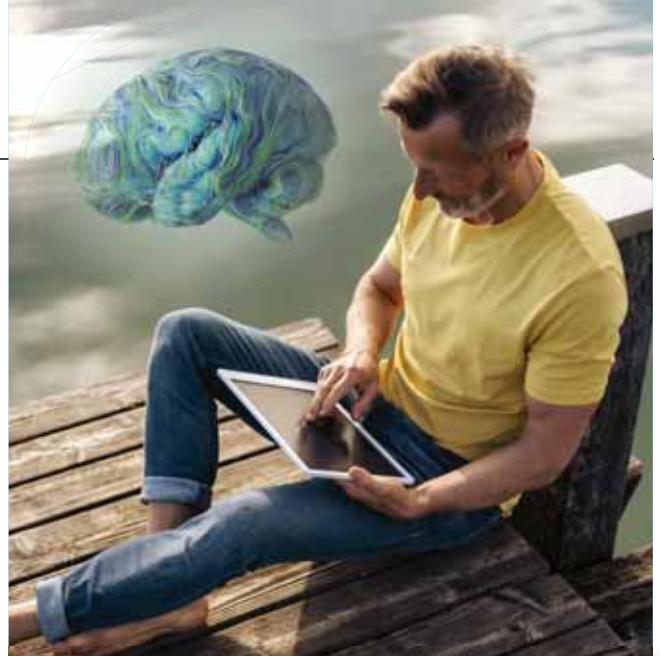
Preclinical studies have shown that a *third* ingredient can support healthy **testosterone** levels.

Luteolin is a flavonoid found in certain plants, including celery, broccoli, parsley, and thyme.

Cell and animal studies show that **luteolin** may support healthy testosterone levels by:

- Increasing **steroidogenic acute regulatory (StAR) protein**, an *enzyme* required for testosterone production,²² and
- Inhibiting **aromatase**, the enzyme that converts testosterone into estrogen.²³⁻²⁵

A *combination* of **pomegranate**, **cacao**, and **luteolin** may maximize support for healthy **free testosterone** levels in men.



Optimum Testosterone Levels

The best way to check **free** and **total testosterone** levels is with simple **blood tests**.

In men, the optimal ranges for testosterone in the blood are:

- Free testosterone: **15-25 pg/mL**.
- Total testosterone: **600-900 ng/dL**.

Summary

Around age **30**, **testosterone** levels in men begin to decline. Critical **free testosterone** levels drop.

Low testosterone is associated with loss of energy and strength, low libido, erectile dysfunction, increased risk for heart disease, diabetes, cognitive decline, and death from any cause.

In a clinical study, **pomegranate** and **cacao seed** extracts increased **free testosterone** by **48%**, reduced stress, boosted strength, and improved symptoms like low libido and exhaustion.

Preclinical studies suggest that the flavonoid **luteolin** also supports youthful testosterone levels.

Together, these ingredients may help men boost **free testosterone**, maintaining healthy vigor while helping to prevent serious disorders. •

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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^oDEF (Dietary Folate Equivalents)



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1
DAILY



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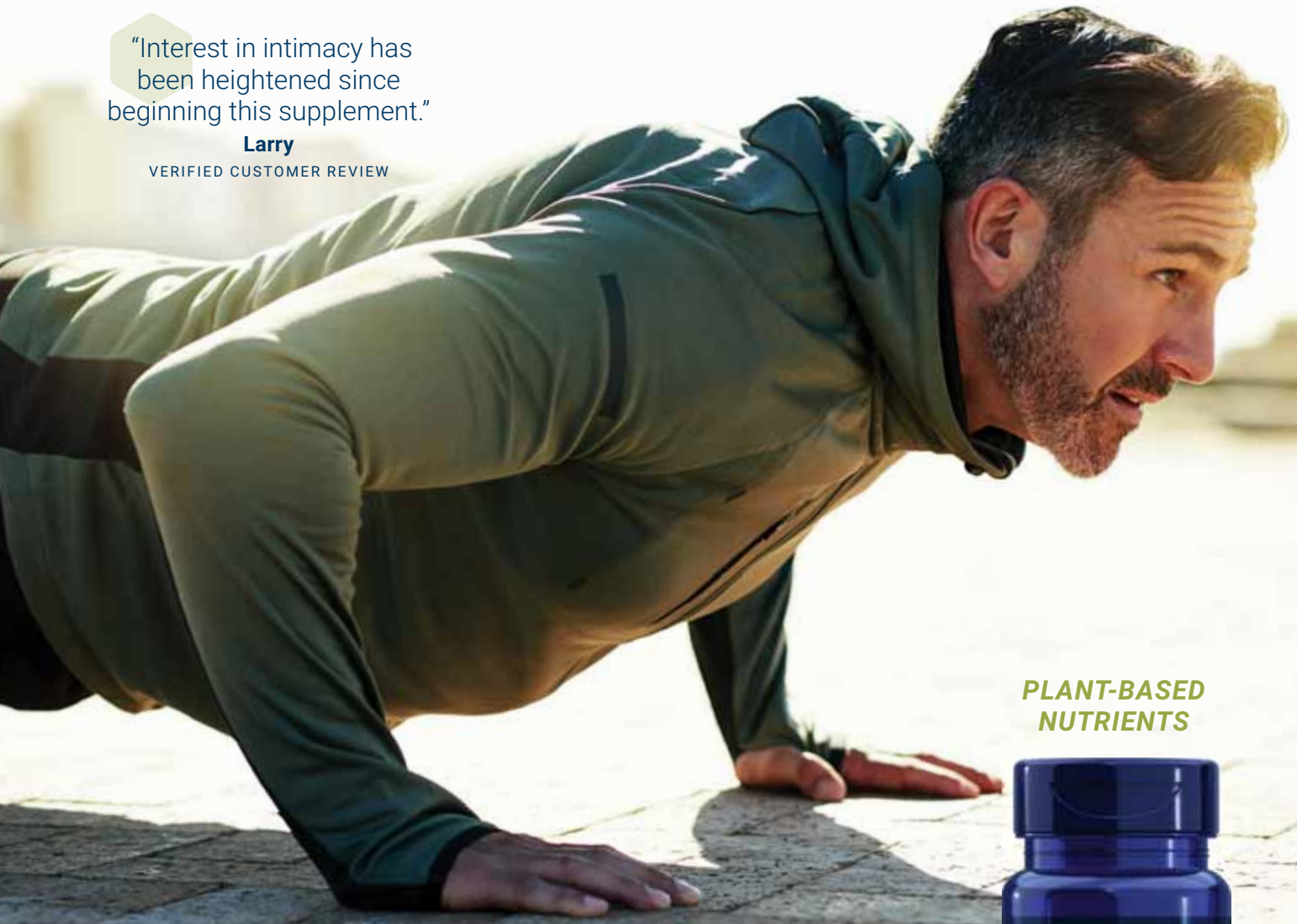
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Larry

VERIFIED CUSTOMER REVIEW



PLANT-BASED
NUTRIENTS



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

Testosterone Elite helps maintain healthy testosterone levels:†

- > A clinical trial showed that **pomegranate** and **cacao** elevated **free testosterone** levels **48%** in just eight weeks.³
- > **Luteolin** increases a protein for testosterone synthesis and inhibits aromatase, an enzyme that breaks down testosterone.^{4,6}

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

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

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"Love the combination of ingredients in this supplement."

Amy

VERIFIED CUSTOMER REVIEW

RELEASE the POWER of BROCCOLI



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

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

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

Each capsule contains:

Glucoraphanin, a sulforaphane *precursor* found in broccoli seed extract, that is standardized to a high concentration.^{3,4}

Myrosinase, an enzyme found in mustard seed that converts **glucoraphanin** to **sulforaphane**.²⁻⁶

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What is Bilberry?

BY LAURIE MATHENA



Bilberries (*Vaccinium myrtillus*) are deep blue berries that resemble blueberries.

Although small in size, they are densely packed with health-promoting compounds like anthocyanins, flavanols, and more.

Bilberries have been used historically as a tea to treat conditions ranging from diarrhea to inflammation of the throat.¹

In more recent years, they have gained attention for their ability to protect against eye diseases like glaucoma, while helping to manage blood sugar, reduce cholesterol, support metabolic health and more.

Potent Eye Protection

As of 2017, over **7 million** Americans had vision loss or blindness, out of which **1.6 million** were younger than 40.²

The Centers for Disease Control and Prevention predicts that, due to aging and chronic diseases like type II diabetes, by 2050 this number may reach almost **nine million**.³

Bilberry extracts offer protection for many of these increasingly common eye conditions.

Studies indicate that bilberry extracts, (alone or in combination with other nutrients that support eye health), help protect vision against disorders like **cataract**⁴ and **glaucoma**,^{5,6} improve parameters of **dry eye syndrome**,⁷ and help improve symptoms related to **eye fatigue**.⁸

A **clinical study** showed that a combination of a specific bilberry extract and French maritime pine bark extract effectively reduced intraocular pressure (pressure inside the eye), which is an underlying factor in **glaucoma**.⁶ Glaucoma is a leading cause of blindness. It often occurs because of high pressure in the eye that can cause *irreversible* damage to the **optic nerve**.⁹

In one study of people with high intraocular pressure (that had not yet progressed to glaucoma), participants were divided into three groups.

- The first group received pine bark-bilberry extract (**40 mg** French maritime pine bark + **80 mg** standardized bilberry extract).
- The second group received standard medical treatment with prescription latanoprost eye drops.
- The third group received both the pine bark-bilberry supplement and prescription latanoprost eye drops.

Reduction in intraocular pressure was demonstrated in all three groups. Participants taking the **pine bark-bilberry** formulation, beginning at six weeks, and continuing through to 24 weeks, had significantly reduced eye pressure. By the sixteenth week, the combination extract had reduced intraocular pressure readings by a meaningful **24%** — comparable to the drug, but with a better safety profile. Subjects using the prescription eye drops lowered their eye pressure by an average of **28%**, beginning from the fourth treatment week.

But by far the most compelling results were seen in the group that used the combination of **pine bark-bilberry** formulation and the latanoprost drops. A significant, average

reduction in **intraocular pressure** of **28%** began at four weeks—but when the study ended at 24 weeks, the decrease in eye pressure had reached approximately **40%**!

This means that the **pine bark-bilberry** compound appeared to have an additive effect with the latanoprost drops to **amplify** the reduction of **intraocular pressure** better than either agent alone. Study participants also experienced improved blood flow, including to the retina.⁶

Bilberries may contribute to eye health and visual function by many possible mechanisms. For example, it may be by antioxidant activity, stabilization of collagen, anti-inflammatory action, increased blood flow to the vessels of the eyes, and enhanced resynthesis of rhodopsin,¹⁰ a protein necessary for night vision.¹¹

Bilberry Regulates Metabolic Health

Scientists believe that increasing the intake of fruits like **bilberry** may help improve the long-term prospects for cardiovascular disease, type II diabetes, and obesity.¹²

Bilberries are one of the richest sources of anthocyanins, which are under investigation for a role in the prevention of metabolic disease and cardiovascular disease.

In a human cell study, bilberry extracts inhibited an angiotensin-converting enzyme, better known as ACE.¹³ This enzyme contributes to hypertension by promoting constriction of the arteries.¹⁴

In a study of participants with metabolic syndrome, consuming **400 grams** of fresh bilberries daily for eight weeks resulted in a reduction in **C-reactive protein** and other inflammatory markers.¹⁵

A review of four randomized controlled clinical trials conducted in China examined the effect of supplementation with a combination extract of bilberry and black currant and found that it lowered average levels of HbA1c (a measure of blood sugar levels) over a three-month period.

This effect was especially notable in older individuals, those with type II diabetes, and those participating in longer-term trials. In subjects with high cholesterol, type II diabetes, or metabolic syndrome, the bilberry and black currant extract significantly reduced total and LDL cholesterol after four weeks.¹⁶



Compounds in Bilberry

Bilberries contain a wide array of phenolic compounds with proven health benefits. The most notable include the following:

- **Anthocyanins.** These are the plant compounds that give bilberries their deep blue color, found in both pulp and peel. The anthocyanins in bilberries positively influence the body's antioxidant response and support metabolic and cardiovascular health.¹²
- **Flavonoids.** Flavonoids are reported to have anti-inflammatory activity.¹⁰ In a large cohort study, higher intake of flavonoids and anthocyanins was associated with decreased insulin resistance in women.¹⁷ Flavonoids found in bilberries have beneficial effects on microcirculation.¹⁰
- **Tannins.** Plants in the bilberry family are one of the richest sources of tannins, a group of polyphenolic compounds that may have potential to manage or even delay the onset of type II diabetes.¹⁰

Summary

Bilberries hold numerous benefits for those seeking to optimize their health and well-being.

This tiny fruit is packed with some of nature's most potent health-promoting substances, such as anthocyanins, flavonoids (including quercetin), and tannins.

Scientific studies confirm that bilberry could offer targeted protection for eye health, while helping protect against conditions like cardiovascular disease and type II diabetes.



Bilberry appears to be safe and has no known drug interactions. A suggested supplemental dose is one **100 mg** capsule daily of bilberry extract standardized to contain **25%** anthocyanins. •

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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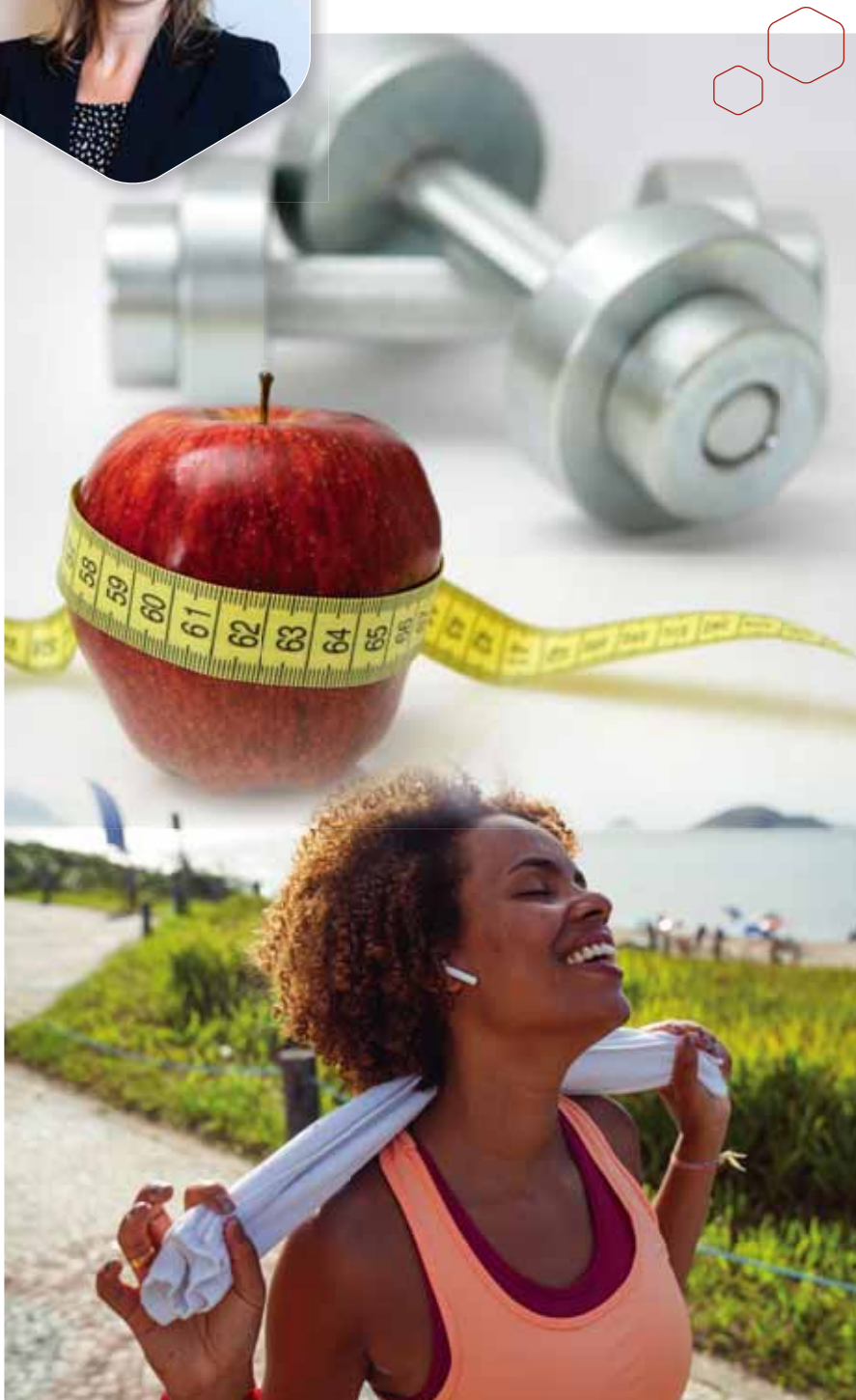
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Achieve Effective, Lasting Weight Loss

BY FLORENCIA ZIEMKE, MD



Overweight and **obesity** increase the risks of developing heart disease, diabetes, and many other chronic diseases.¹ But most people who try to lose weight either fail or wind up gaining it back.

Dr. Florencia Ziemke, founder, and medical director of Evexia Medical, a nutrition and weight management practice in Palm Beach County, Florida, is trying to change that. In this interview, Dr. Ziemke, who has nearly two decades of experience in obesity and nutrition medicine, tells *Life Extension* why it's vital to focus on safe weight loss and how she helps her patients get results.

LE: Many people consider weight to be a cosmetic issue. What are some of the serious risks of carrying excess weight?

Dr. Ziemke: Overweight and obesity affect one in three of the U.S. adult population. This is one of the **leading causes of preventable death** in the U.S. after smoking and it is associated with over 200 medical complications including diabetes, heart disease, stroke, sleep apnea, and 13 types of cancer.²

Increased body fat promotes tissue dysfunction, a chronic state of low-grade inflammation, and abnormal physical forces that result in adverse health consequences. Fat in the belly, close to the organs, increases risk for heart disease and diabetes. Fat in the heart wall can cause abnormal heart rhythms. Fat in the arteries causes heart attacks and strokes. Fatty liver disease is the leading cause of liver transplants in our country.³

Furthermore, many adults are on medications to treat complications of the diseases of obesity: high blood pressure, high cholesterol, etc. But nobody is talking about or treating obesity.

LE: Why is it so hard for people to lose weight?

Dr. Ziemke: Excess weight is *not* a result of flawed willpower. It's important to understand that body weight is regulated. Think of it like a thermostat with a pre-set temperature. Similarly, our body has a **pre-set weight** it always goes back to.

The minute you try to lose weight, the body fights back to compensate. It increases hormone signaling to make us feel hungry, decreases fullness signaling letting the brain know it's time to stop eating, and lowers the rate of metabolism.

Another problem is that we live in an environment that promotes weight gain. Portion sizes have quadrupled over the past decades, and we live sedentary, sleep-deprived, movement-less lives. Most food is not even food; it's highly processed, addictive, and lacks nutritional properties to nourish our bodies.

LE: How can people overcome such enormous obstacles?

Dr. Ziemke: The *good* news is that long-term and sustainable body weight reduction is possible, under guidance of a trained specialist who can individualize treatment. At Evexia Medical, it's not just about quickly pushing that number on the scale down. Evexia means wellness in Greek. Wellness is the integration of physical, mental, emotional,

environmental, social, and spiritual well-being. This is really important to understand. We cannot just talk about a physical body. Instead, we focus on optimal health and well-being.

To do that, we integrate pillars of treatment success including evidence-based medicine, nutrition, lifestyle and behavior, and technology. This is not a quick fix or fad diet. Our specialists work closely with each individual to design long-term health and wellness plans. Importantly, slow and steady really wins the race. Clinically we aim for **5%-10%** weight reduction over a **three-month** period.

LE: You mentioned using technology. How does that help?

Dr. Ziemke: It's important for people to feel supported throughout their health journey. We use an app, telehealth, and remote monitoring technology to help them stay on track and allow us to adjust their program in real-time. Texting and video calling are also available so patients can stay in touch with their healthcare team. A **smart scale** included in our membership sends information straight to the doctor and healthcare team. It measures weight, body fat, lean body mass, and hydration. It's like your doctor is with you!

LE: What kinds of results does your practice see?

Dr. Ziemke: The average weight reduction at our practice is **14%** of total body weight at six months and **21%** or **46 pounds** at 12 months. The average waist circumference reduction is **5.5 inches**. Also, **87%** of our patients maintain reduced weight, meaning weight that comes off is kept off.



Some other changes we see over 12 months: improved eating behaviors and food habits, control of food triggers and cravings, reduction in prescription medication use, increased movement, improved quality of sleep, and less fatigue. In bloodwork we see improvements in cholesterol, diabetes markers, and liver function tests, just to name a few.

LE: That's impressive! Are there weight-loss tips you have that work for everyone?

Dr. Ziemke: Here's the truth: There isn't a single intervention that will work for all people. It's important to recognize that *individualization* of treatment is the biggest marker of success. Different people have different needs.

But regardless of the plan we develop at an individual level, *all of us* need to focus on dietary changes, lifestyle, and behavior. A Mediterranean diet is a good model, though we adapt it to each person. The closest I can come to a blanket statement on diet is: Opt for whole, lean, and clean. And stay away from that addictive, processed junk food!

LE: There is a lot of interest in new diabetes and obesity medications that are being used for weight loss. Do you find them to be safe and effective?

Dr. Ziemke: Medications like Ozempic®, Wegovy®, Mounjaro®, and Zepbound® have been game-changers for certain patient populations. Ozempic® and Mounjaro® are FDA approved for Type II diabetes, whereas Wegovy® and Zepbound® are FDA approved for the treatment of obesity. These medications are potent and carry risks and side effects that require monitoring. They need to be used in the appropriate setting, in



the appropriate patient, and with the appropriate supervision. They are certainly not a weekend weight-loss gimmick, as Hollywood has led many to believe.

Yes, I prescribe them, but not for everyone. Also, when these medications are prescribed, they don't eliminate the need to focus on dietary changes, such as avoiding fast foods and sugary drinks, or the importance of movement and stress reduction. •

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

Dr. Florencia Ziemke

has worked at hospitals including Boston Medical Center and Beth Israel Deaconess Medical Center, with affiliations at Boston University, Tufts Medical School, and Harvard Medical School. She is board certified in Internal Medicine and a diplomate of the American Board of Obesity Medicine.

Dr. Ziemke serves as Vice President of the Florida Obesity Society.

For more information about Dr. Ziemke's medical nutrition practice, Evexia Medical, visit [evexia.com](https://www.evexia.com)

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Restore Healthy, Youthful-Looking Legs

BY LAURIE MATHENA



About half of all people have **chronic venous** abnormalities.

This can result in cosmetic concerns like varicose veins, which affect about **10% to 30%** of the population.

Vein disorders can also manifest as *chronic venous insufficiency*, which can cause painful, swollen legs, changes in skin appearance such as discoloration, and even ulcerations.^{1,2}

A flavonoid, **diosmin**, found in citrus, has been widely studied to improve the health of veins, including **varicose veins** and **chronic venous insufficiency**.

Chronic Venous Disease

The job of the veins in the legs is to return deoxygenated blood from the lower extremities to the heart. These leg veins contain one-way valves that are supposed to prevent blood from flowing back to the feet.

When those valves become damaged, blood can flow backward and collect in the leg veins. This condition is called **chronic venous disease** (CVD).

Over time, chronic venous disease damages the venous wall and leads to health concerns and cosmetic issues like varicose veins, ankle swelling, painful ulcers, and skin pigmentation.¹

It can also cause legs to feel heavy, tired, or achy.

Chronic venous disease is associated with **deep vein thrombosis**, a condition that can cause potentially life-threatening blood clots.⁵

There are different stages of chronic venous disease, classified according to the severity of symptoms and signs. Treatment options vary for different stages and may include lifestyle modifications, laser ablation, and surgical interventions.¹

Improved Symptoms in 30 Days

In a study of patients with chronic venous insufficiency who were not on medical treatment, supplementation with a citrus bioflavonoid called **diosmin** led to improvement of edema, pain, and leg discomfort/tightness in over **80%** of the participants in as little as 30 days. There was also improvement in symptom-severity classification of the disease.⁶

Measurable Reduction in Leg Swelling

In a clinical study of patients suffering from *chronic venous insufficiency/disease*, participants received **600 mg** of diosmin two times per day for three months. They were evaluated for cardiovascular disease based on clinical symptoms and blood markers of vascular health before and after the study.

After three months, there was significant improvement in pain and swelling. Blood markers revealed improvements in endothelial and inflammatory health markers.⁷

Another study found that within two months of receiving **500 mg** of **diosmin** two times a day, participants with venous edema without skin changes and symptoms (pain, tension, heaviness, and restless legs) saw their ankle and calf circumferences shrink by more than **half a centimeter**. Overall leg volume decreased by an average of **78 cubic centimeters** along with significant improvement in other symptoms.⁸

A review and analysis of 10 randomized controlled trials found that Micronized Purified Flavonoid Fraction diosmin helps significantly reduce pain and swelling in the lower legs.⁹

Another analysis of five randomized controlled trials on participants with venous ulcers found that treatment with Micronized Purified Flavonoid Fraction along with conventional therapy increased chances of ulcer healing by **32%** after six months as compared to conventional therapy alone.¹⁰

Improved Clinical Outcomes for Varicose Veins

The damaged valves that cause varicose veins allow for backflow of blood toward the feet, which can cause hypertension in the veins. This can damage the venous wall and contribute to the appearance of **varicose veins**.¹

In addition, prolonged untreated venous insufficiency is associated with vascular endothelial dysfunction, leakage, and inflammation. This can lead to venous leg ulcers.

In an animal study, treatment with **micronized diosmin** showed protective effects on vascular endothelium, improved vascular tone, reduced venous leakage, and alleviated inflammatory response; it also helped maintain overall vascular health.¹¹

A review of human studies of **micronized diosmin** showed that it improved ulcer healing in more advanced stage venous disease when used in addition to multilayer compression bandaging, and in individuals undergoing standardized local care of leg ulcers.¹²

Post thrombotic syndrome is a frequent and disabling complication of deep vein thrombosis and may involve swelling, chronic pain, and heaviness of the affected limb.

A clinical study randomized participants with a history of deep vein thrombosis into a control group that received standard care with rivaroxaban (Xeralto®) for six months and compression stockings for 12 months, or the experimental group that received diosmin **600 mg** with standard care. It was found that the group that received diosmin had a **14%** decreased risk of *post-thrombotic syndrome* along with complete vein recanalization (seen on ultrasound), and low vascular disease progression as compared to the control group.¹³

In a clinical trial, patients undergoing a surgical procedure for varicose vein disease were given micronized diosmin **1,000 mg/day** for two weeks *before* and for 30 days *after* surgery. Compared to those not taking diosmin, these individuals achieved a measurable reduction in postoperative hematomas, pain severity, and limb heaviness. They also saw better exercise tolerance and improved quality-of-life scores.¹⁴

Citrus Extracts and Venous Health

Diosmin can be derived as a metabolite of the flavonoid **hesperidin** from citrus rinds.³

To aid intestinal absorption, diosmin is often **micronized**; particles are milled down to a fine grade.

The resulting product is referred to as Micronized Purified Flavonoid Fraction, and often contains **diosmin** and **hesperidin** in a 9:1 ratio.³

Micronized Purified Flavonoid Fraction products have been widely used and studied in **Europe** for the treatment of varicose veins and chronic venous disease.^{3,4}

This Micronized Purified Flavonoid Fraction has been found, in several **clinical trials**, to improve vein and leg health, resulting in improved leg appearance and quality of life, including:⁴

- improved healing of venous ulcers,
- reduced leg swelling (edema) and feelings of heaviness in the legs,
- Improved changes in skin appearance associated with venous disease,
- Reduced leg cramping, and
- Improved symptom scores for venous disease and venous insufficiency.



Summary

Micronized diosmin, also called Micronized Purified Flavonoid Fraction, can be used alone as a dietary supplement, or in combination with standard treatment such as compression stockings, for chronic venous disease.

It has been shown to be effective for improving cosmetically unattractive venous disorders, including varicose veins, leg ulcers, swelling, and edema.

In patients suffering from chronic venous insufficiency, diosmin can provide significant relief from pain, heavy legs, and cramps, particularly when complemented with standard conservative treatment such as leg elevation and compression stockings. •

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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The Reset Revolution

Fitness Advice from Personal Trainer **Becca Tebon**

BY LAURIE MATHENA

A Holistic Approach

Tebon was born with asthmatic bronchitis, degenerative disc disease, and digestive problems. She was in and out of hospitals for the first 11 years of her life.

The daughter of a pharmacist, Tebon was on a cycle of prescription drugs for most of her childhood. Rather than putting her on a path to healing, this only led to additional problems like digestive issues and chronic constipation.

“As a young adult, I reached a turning point of advocacy for myself when I decided I didn’t want to live the rest of my life dependent on meds and feeling awful,” said Tebon.

During that time, she learned how to use nutrition, supplementation, and exercise to manage her asthma, chronic pain, and digestive issues.

It was a long, slow process, but by 42 years of age, Tebon was able to completely stop all prescription drugs. She accomplished this by identifying triggers and relying instead on key supplements and lifestyle changes to help manage her conditions.

“Health is not a ‘one-and-done’ approach,” said Tebon. “My holistic approach, bi-annual gut and colon cleanses, and daily exercise have helped me effectively manage my chronic conditions and enjoy a healthier, pain-free life.”



© RAFAEL CALERO

Becca Tebon is an overcomer.

She was born with chronic health challenges that had her in and out of hospitals and dependent on prescription drugs.

As an adult, she was hit by a car, which left her with chronic pain, neuropathy, and undergoing life-altering surgery.

But instead of giving in to her health challenges, *she decided to fight back.*

Now, at 58 years old, she is healthier and stronger than ever.

She is off all prescription drugs and is a sought-after international trainer and motivational speaker.

Tebon is on a mission to help women over 40 reset their lives to experience more active, functional health.

Her motto is simple: Keep it simple, achievable, and measurable—and she’ll help you every step of the way.

Reset Revolution

As Tebon worked to improve her own health, she started teaching personal training classes to help others as well. She earned over a dozen certifications and started her own wellness business, Becca Tebon F.I.T. (which stands for Fearless Integrative Transformation), which has now transformed into RESET Revolution.

RESET provides everything needed to transform your health and wellness: daily live exercise sessions, over 1,000 on-demand videos, cooking lessons, daily mindful minutes, a supportive community, and more.

“Everything I do is about *resetting*,” said Tebon. “If you stop at a fast-food restaurant and make a poor food choice, instead of giving up, this is an opportunity to reset. It’s not about perfection; it’s about consistency.”



Tebon herself had to hit reset after suffering a major setback in her 40s when she was hit by a car while riding her bicycle.

The damage to her already degenerated spinal discs left her in chronic pain, with neuropathy in her hands, and a recommendation to have cervical artificial disc replacements.

The neuropathy made working out with traditional weights or resistance bands impossible for Tebon.

“I can’t even hold a cell phone in my hand for more than five minutes without experiencing a burning, tingling, numbing feeling,” said Tebon.

As a solution, Tebon created her own ergonomic resistance bands.

She decided against the surgery to replace the discs in her neck, and instead used her bands to rehab herself.

Her neck is now functional and virtually pain-free.

Functional Workouts in 17 Minutes

Tebon’s Reset Revolution includes 17-minute functional workouts using her ergonomic resistance bands.

The linear pull with TUT (time under tension) activates compound muscles and provides faster results than machines or free weights.

Functional training builds strength, flexibility, agility, and balance. It enhances the strength needed for everyday activities like picking up grandkids, bringing groceries into the house, or carrying laundry to the basement.

“Fitness changes with age. There are physiological changes, lifestyle changes, hormonal changes,” explained Tebon. “Women in their 40s go through perimenopause. They experience declines in their estrogen, progesterone, and



testosterone levels. This can affect their metabolism, muscle mass, bone density, fat distribution, and weight.”

After the age of 35, women lose 2%-5% of their muscle mass every year.¹ And after 40, women are more prone to decreased bone density and increased risk of osteoporosis.

“It’s important to face these changes head on to beat the curve. You can do that with the kind of muscle-bearing, bone-strengthening, and metabolism-boosting exercises that you get with resistance band training,” said Tebon.

But regardless of the type of workout a woman chooses, Tebon stresses that fitness is essential for healthy aging.

“Regular activity boosts the immune system, helping us become more resilient to infections and illnesses,” said Tebon. “It can help slow cognitive decline. It helps lower the risk of depression and anxiety. It improves sleep.”

Tebon also combines her fitness regimens with targeted supplementation.

“Supplements help take the brunt off the body. They can help cleanse, strengthen, and detoxify the body,” said Tebon.

Baby Steps

Facing so many struggles and challenges in her own life gives Tebon a unique perspective as a coach. She doesn't just want to see someone lose weight or build muscle. She wants to help her clients transform their lives, from the inside out.

This transformation doesn't just happen one day at a time, but one choice at a time.

“Look at your choices, schedule your success, and make a commitment for your end goal,” said Tebon. “Remember, consistency does not mean perfection.”

Tebon's ultimate goal is to extend her own healthspan—and that of her clients as well.

“I want to slide in at age 117 knowing that I pushed every single button that was available to me to live a long, healthy life—and that I did it feeling good.” •

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

Reference

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SUPPLEMENTS FOR SUCCESS

Through trial and error, Becca Tebon has adopted a comprehensive approach to her health that combines specific supplements and a balanced diet to help manage her unique health challenges.

The following is a list of just some of the nutrients Tebon personally utilizes.

For Muscle and Joint Health

- Herbal combination of curcuminoids, AKBA, black sesame seed oil, turmeric and Indian frankincense
- Curcumin and Ginger
- Bromelain
- MSM

For Hormone Health

- Cruciferous Vegetable Extract and Resveratrol
- Broccoli concentrate, soy isoflavone concentrate, spruce lignan extract, dong quai extract
- Siberian rhubarb extract
- DHEA

For Bone Health

- Calcium, Magnesium, silicon, dried plum extract, boron
- Creatine capsules
- Vitamin D3

For Respiratory Health

- Vitamin D3
- Omega-3s
- Magnesium
- Selenium

For Seasonal Support

- Shiitake, maitake, chaga mushrooms with beta glucans
- Boswellia serrata, saffron, andogaphis extract
- Holy basil extract, ashwagandha, cordyceps extract, bacopa extract
- Bifidobacterium longum

For more information about Becca Tebon and RESET Revolution, visit www.BeccaTebon.com





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This product also contains beneficial Immuno-LP20®.

Just one mint cherry lozenge of **FLORASSIST® Oral Hygiene** a day maximizes oral hygiene by supporting healthy bacterial colonization throughout the mouth.^{3,4}

References

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Item #02120 • 30 vegetarian lozenges

1 bottle \$15

4 bottles \$13 each



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Item #02252

60 softgels

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- 01953 Pomegranate Complete
- 00956 Pomegranate Fruit Extract
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- 01536 Vitamin B12 Methylcobalamin
1 mg, 60 veg lozenges
- 01537 Vitamin B12 Methylcobalamin
5 mg, 60 veg lozenges
- 02228 Vitamin C and Bio-Quercetin®
60 veg tablets
- 02227 Vitamin C and Bio-Quercetin®
250 veg tablets
- 01753 Vitamin D3 • 25 mcg (1000 IU), 90 softgels
- 01751 Vitamin D3 • 25 mcg (1000 IU), 250 softgels
- 01713 Vitamin D3 • 125 mcg (5000 IU), 60 softgels
- 01718 Vitamin D3 • 175 mcg (7000 IU), 60 softgels
- 01758 Vitamin D3 with Sea-Iodine™
- 02040 Vitamins D and K with Sea-Iodine™

WEIGHT MANAGEMENT & BODY COMPOSITION

- 02479 7-Keto® DHEA Metabolite
100 mg, 60 veg capsules
- 02207 AMPK Metabolic Activator
- 02504 Body Trim and Appetite Control
- 02478 DHEA Complete
- 01432 Optimized Saffron
- 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 Relief
- 02319 Prenatal Advantage
- 01649 Soy Isoflavones
- 02513 Women's Bladder Support

Feel like a Kid Again



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

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

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

NAD⁺ Cell Regenerator™ and Resveratrol Elite™

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

Item #02348 • 30 veg. caps.

NAD⁺ Cell Regenerator™

300 mg of nicotinamide riboside per capsule.

Item #02344 • 30 veg. caps.



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

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



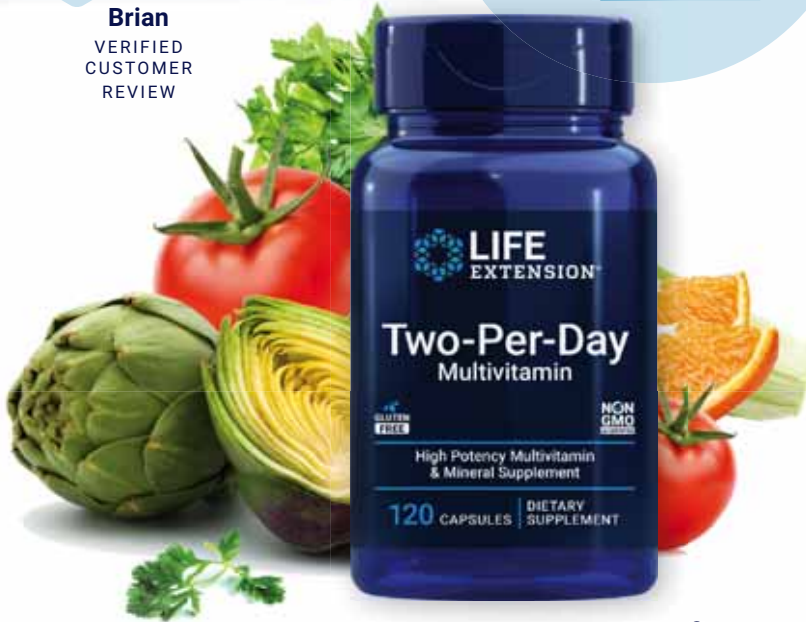
For full product description and to order **NAD⁺ Cell Regenerator™** or **NAD⁺ Cell Regenerator™ and Resveratrol Elite™**, call 1-800-544-4440 or visit www.LifeExtension.com

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VOTED #1 MULTIVITAMIN

"Covers all the bases."

Brian
VERIFIED
CUSTOMER
REVIEW



Compare **Two-Per-Day Multivitamin** to the Leading Brand **Centrum®**

The **Two-Per-Day** multinutrient formula is superior to commercial multivitamins because it provides vastly **higher** potencies of **vitamins, minerals and plant extracts.**



#1 Rated
Multivitamins | 10 Time Winner!†

Compared to Centrum® Two-Per-Day Provides:



Centrum® Can't Compete

- 50 TIMES THE VITAMIN B1**
- 25 TIMES THE VITAMIN B6**
- 12 TIMES THE VITAMIN B12**
- 10 TIMES THE BIOTIN**
- 10 TIMES THE SELENIUM**
- 8 TIMES THE VITAMIN C**
- 3 TIMES THE VITAMIN E**
- 2.5 TIMES THE VITAMIN B3**
- 2 TIMES THE VITAMIN D**
- 2 TIMES THE ZINC**

Alpha lipoic acid, quercetin and plant extracts lacking in most commercial multivitamins.

Two-Per-Day Multivitamin Capsules

Item #02314 • 120 capsules (two-month supply)
1 bottle \$19.13 • 4 bottles \$17 each

Two-Per-Day Multivitamin Tablets

Item #02315 • 120 tablets (two-month supply)
1 bottle \$18.38 • 4 bottles \$16.25 each

For full product description and to order **TWO-PER-DAY MULTIVITAMIN**, call **1-800-544-4440** or visit **www.Life Extension.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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The Science of a Healthier Life®

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IN THIS EDITION OF *LIFE EXTENSION* MAGAZINE®



7 DO HEALTHY LIFESTYLES OFFSET GENETIC HEART ATTACK RISK?

A study in the *New England Journal of Medicine* found that four healthy **lifestyle choices** help protect against cardiovascular disease, even in those with high genetic risks!



22 POMEGRANATE AND VASCULAR HEALTH

Studies show that **pomegranate** promotes multiple aspects of **heart health**, from *improved* endothelial function to *reduced* platelet aggregation.



34 EASE STUBBORN BACK PAIN

A **clinical trial** showed that two plant extracts significantly *reduced* back pain for **79%** of patients in just **30 days**.



44 RESTORE YOUTHFUL FREE TESTOSTERONE

Low **free testosterone** increases health risks as well as feelings of fatigue. In a **human trial**, a pomegranate-cacao blend *increased* critical **free testosterone**.



57 WHAT IS BILBERRY?

Bilberries are packed with **anthocyanins** and **flavonoids** that may protect against **eye** disorders like glaucoma and cataracts.



67 SOLUTIONS: IMPROVE HEALTH AND APPEARANCE OF LEG VEINS

Two **flavonoids** derived from citrus were found to improve **vein** health including **varicose veins** and chronic venous insufficiency.

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