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August 2024

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# Difficult Choices



WILLIAM FALOON



In the United States this year, about **43,000** women will suffer agonizing deaths from metastatic **breast cancers**.<sup>1</sup>

From the day of diagnosis, women face difficult choices relating to treatments that inflict **side effects**, with none guaranteed to elicit a **cure**.

Be it radiation, chemotherapy, surgery, hormonal and/or checkpoint inhibitors, there are a myriad of known challenges, such as future **cancer** risks, **heart damage**, and **cognitive impairment** (chemo brain).<sup>2-7</sup>

A difficult choice for women with **estrogen receptor-positive** tumors is how long to stay on **drugs** that deplete their body of **estrogen**. These drugs are called **aromatase inhibitors**.<sup>8</sup>

**Estrogen** depletion using *aromatase inhibitors* reduces risks of breast **cancer** recurrence and metastasis.<sup>5,9</sup> But these drugs deprive the women's bodies of essential functions such as maintaining **bone density**, along with causing **menopausal** symptoms like sleep deprivation and weight gain that can be life-shortening.<sup>10,11</sup>

The risk of **estrogen receptor-positive** breast cancer recurrence continues far beyond the typical **five-year** standard mark. For some, the risk of recurrence remains elevated for 15 years or more.<sup>5</sup>

This long-term risk of **recurrence** has caused a conundrum as it relates to how many years a woman should continue taking an *aromatase inhibitor*, and what can be done to mitigate the **side effects** of **estrogen depletion**.<sup>5,10,12</sup>

Recent findings provide a rationale to not overly extend the time that an *aromatase inhibitor* is used.<sup>10</sup> Other studies reveal how to reduce bone **fractures** while lowering risks of cancer **recurrence**.<sup>12</sup>

This article describes some of these **safer** approaches to the "difficult choices" faced by breast cancer patients.



When an abnormal mass is detected by mammography, ultrasound, MRI, or feeling a breast lump, the next step is a **biopsy** to determine if it is cancer and what **type** of cancer cells are present.

The deadliest common breast tumor **type** is called **triple negative**. This means that there are no cell **receptors** detected for **estrogen**, **progesterone** or **HER2**, thus making it “triple receptor **negative**.”<sup>13</sup>

Without a specific **growth-promoting** receptor, there are limited approaches to target **triple negative** tumors other than surgery followed by whole-breast radiation and aggressive chemo.<sup>13</sup> About **10%-15%** of breast tumors are **triple negative** with poor outcomes if they become **metastatic**.<sup>14</sup>

Another **15%-20%** of breast cancers are **HER2+**, and there are targeted drugs like **Herceptin®** that improve survival.<sup>15</sup> Over time, these drugs lose effectiveness as cancer cells mutate to become less reliant on the **HER2 receptor**. (HER2 is the acronym<sup>16</sup> for human epidermal growth factor receptor 2.)<sup>16</sup>

The best news for a breast cancer patient is to learn they have the easier-to-treat **estrogen receptor-positive (ER+)** or **estrogen/progesterone receptor-positive (ER/PR+)** type.<sup>17</sup>

Both ER+ and ER/PR+ breast tumors respond to whole-body **estrogen depletion** (using an **aromatase inhibitor** drug) and/or drugs like **tamoxifen** that block the ability of estrogen to **bind** to its receptor on breast cells.<sup>13,18,19</sup>

These **drugs** come with side effects that include joint pain, cognitive impairment, weight gain and other **menopausal** miseries. **Aromatase inhibitors** deplete bone density and increase **fracture risk**.<sup>10</sup>

These **anti-estrogen** drugs do, however, significantly improve ER+ cancer **survival** rates and there are ways to mitigate some of their **side effects**.<sup>20</sup>

### How Long Should Aromatase Inhibitors be Used?

About **80%** of breast tumors are **ER+** or **ER/PR+** and respond well initially to **anti-estrogen** drugs.<sup>21</sup>

These favorable responses have caused some oncologists to suggest **long-term** use of **aromatase inhibitors** to reduce risks of cancer recurrence/metastasis.

A large-scale study published in the *New England Journal of Medicine* looked at women prescribed an **aromatase inhibitor** and/or **tamoxifen** for **five years**.<sup>10</sup>

The clinical researchers found that after the initial **five years** of **anti-estrogen** drug treatment, **two additional** years of aromatase inhibition provided similar **anti-cancer** benefits as **five additional** years of anti-estrogen drug therapy.

They also showed that the risk of **bone fracture** was **35% higher** in women taking an **aromatase inhibitor** for **five additional** years (compared to **two additional** years).







Women in the **two** additional years' treatment group experienced about **60%** fewer cases of **osteoporosis** compared to the **five** additional years' treatment arm.

The **bone fracture** reduction effects shown in the **shorter**-term use of the estrogen-depleting *aromatase inhibitor* occurred regardless of the use of skeletal supportive **drugs** I discuss next.

## Protect Against Skeletal Degeneration

**Estrogen** helps maintain **bone density** by inhibiting the excess removal (resorption) of bone. It also plays a role in healthy bone remodeling.<sup>22</sup>

When **estrogen depletion** occurs during **menopause**, risks of **osteoporosis** and **bone fractures** increase.<sup>23</sup>

When estrogen is virtually eliminated using **aromatase inhibitor** drugs, rapid bone loss often ensues.<sup>24,25</sup> In addition to skeletal fractures, mounting evidence suggests that as bone is excessively broken down, it releases **growth factors** that can stimulate residual **cancer cell** propagation.<sup>26</sup>

Maintaining **bone density** is an essential component of breast **cancer treatment**, and there are **choices** as to which class of skeletal-supporting drug to use.<sup>27</sup>

The **bisphosphonate** class of drugs (Fosamax®, Aredia®, Zometa®, et al.) have proven bone-building properties but induce side effects in some people.<sup>28,29</sup>

Another bone-building drug called **Prolia®** (generic name denosumab) has also demonstrated favorable results but works differently than **bisphosphonates**.

Researchers compared **Prolia®** in early-stage **ER+ breast cancer** patients taking an **aromatase-inhibitor** drug to a placebo arm taking **no** bone-protecting drug.<sup>11,24</sup> They found in the Prolia® group:

- **24%** fewer fractures,
- Reduced bone metastases,
- Better cancer-free survival,
- Survival after eight years: **26%** Prolia® versus **19%** placebo, and
- Few side effects.

The researchers of this unprecedented long-term study cited benefits including the low cost of Prolia® generics, injectable dosing of only twice a year, **reductions in bone fractures** and improved **overall survival**.

These researchers also commented that while benefits of **aromatase inhibitors** were long ago established in ER+ (and ER/PR+) patients, the increase in **fracture** rate, especially in the aging population, sometimes exceeds the reduction in cancer recurrence.

Scientists have noted that another class of drug (**bisphosphonates**) are also effective in mitigating the bone-damaging effects of anti-estrogen drugs (such as aromatase inhibitors), while improving breast cancer outcomes.

Bisphosphonates have raised more side-effect concerns than Prolia®, but Prolia® can be substituted for bisphosphonates with good results and is well tolerated.<sup>30</sup>

The downside to Prolia® is that upon cessation, rapid bone loss manifests. This means that once Prolia® is commenced, patients are likely to be on Prolia® or another bone-protecting drug for life.<sup>12,31</sup> This may be good based on the epidemic of age-related **osteoporosis** and high **fracture** rates in the elderly.<sup>32</sup> (Prolia® patients can also switch to a bisphosphonate if their doctor concurs.)<sup>33</sup>

Both bone-protecting medications (Prolia® or bisphosphonates) are effective at preventing **fractures** in postmenopausal women with bone loss, and for women with ER+ breast cancer with higher risk of fractures due to treatment.

Those with ER+ breast cancer treated with an *aromatase inhibitor* should consider speaking to their

treating physician about **Prolia®** or a **bisphosphonate** to maintain bone density in the face of aggressive estrogen depletion.

A review of prior research comparing **Prolia®** with **bisphosphonates** to treat **osteoporosis** in postmenopausal women found decreased risk of fractures/better bone density with **Prolia®** in **four** out of **six** studies reviewed, with no major differences in side effects between the groups.<sup>30</sup>

Be it **Prolia®** or a **bisphosphonate**, estrogen-deprived breast cancer patients require bone-protecting drugs to reduce **fracture** risks, along with skeletal-friendly lifestyles and nutrients.

## The Most Difficult Choices

Upon diagnosis of any type of breast cancer, initial decisions involve lumpectomy or differing degrees of mastectomy, followed by decisions on whole-breast

## Reducing Breast Cancer Risks

Lifestyle changes even *after* breast cancer diagnosis improve odds of achieving a complete response and improve overall survival.<sup>34-37</sup>

A recent observational study presented evidence that strong collective adherence to cancer-prevention lifestyle recommendations by the *American Cancer Society* and the *American Institute of Cancer Research* is associated with significant reductions in disease recurrence and mortality in high-risk breast cancer patients.<sup>35</sup>

Their most recent recommendations include:<sup>35,36</sup>

- Maintain a healthy body weight.
- Meet the physical activity (PA) guidelines of **150-300 minutes** per week of moderate-intensity or **75-150 minutes** per week of vigorous-intensity physical activity, and muscle-strengthening activities on two or more days a week.
- Eat a colorful variety of vegetables and fruits, and plenty of whole grains.

- Limit red and processed meats, fast food, and other highly processed food.
- Avoid or limit sugar-sweetened beverages.
- Avoid or limit alcohol consumption to one drink or fewer per day.
- Avoid smoking.

Regarding alcohol consumption before and after breast cancer diagnosis, the research is inconsistent, with some studies showing no impact on mortality amongst breast cancer patients.<sup>38,39</sup>

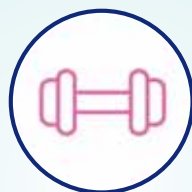
The easiest decision, however, relates to **breast cancer** risk reduction strategies.

This includes knowing your risk (i.e. family history), periodic screening (mammogram and clinical breast exam), breast self-exam, and following the *American Cancer Society* and the *American Institute of Cancer Research* recommendations.



The following lifestyle recommendations by the *American Cancer Society* and the *American Institute of Cancer Research* are associated with significant reductions in disease recurrence and mortality in high-risk breast cancer patients.<sup>35</sup>

Healthy  
body weight



Varied diet  
of vegetables,  
fruits, and  
whole grains

Exercise / physical activity



Limit red meats and other  
highly-processed foods



Avoid sugar-  
sweetened beverages



Limit alcohol  
consumption



Avoid  
smoking

radiation, differing chemo regimens, and other treatments that offer hope, but no assurance of efficacy.

Toxic **chemotherapy** regimens often induce initial efficacy, but at the cost of **side effects** that include **higher** risks of other cancers.

A study published in **2023** found that over a follow-up of **6.2 years**, breast cancer survivors had a **70% higher** risk of any **cancer** and a **45% higher** risk of non-breast cancer compared with the general population.<sup>4</sup>

These secondary cancers manifested in the pancreas, colon, lung, skin, and other tissues. Many of these new cancers, such as the **three-fold** increase in **pre-leukemic** bone marrow dysplasia, correlate with **toxic therapies** used to fight the initial breast malignancy.

In 2020, an estimated **3.9 million** women were living with **breast cancer** in the United States.<sup>1</sup>

Thanks to earlier diagnosis and improved treatments many of these **3.9 million** women will likely not die from breast cancer.

Many, however, suffer **side effects** from radiation, hormone ablation, chemo, and other harsh treatments. Women who survive breast cancer but perish years later after drug-induced **bone fractures**, radiation-induced **heart failure** or other toxic treatment effects, are too often overlooked when tabulating cancer statistics.

In other words, a woman suffering chemo- and/or radiation-induced **heart failure** or **secondary cancer** may not be counted as a breast cancer casualty, even

though the fatal disease emanated from *prior* breast cancer treatments.

The “**difficult choices**” title of this editorial relates to the myriad of **toxic** therapeutics with which a woman stricken with breast cancer is confronted.

In this month’s issue, we reveal recent data sets to provide women with meaningful **choices** to reduce their odds of contracting breast cancer.

For longer life,

William Faloon, Co-Founder  
**Life Extension®**

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“Love the combination of ingredients in this supplement.”

Amy

VERIFIED CUSTOMER REVIEW

# RELEASE the POWER of BROCCOLI



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

Mature broccoli provides relatively little **sulforaphane precursor** compared to broccoli sprouts. Cooking further depletes the sulforaphane precursor.<sup>2,4</sup>

**Optimized Broccoli with Myrosinase** improves conversion of the precursor into **sulforaphane**, and its absorption into the bloodstream.<sup>2,5,6</sup>

Each capsule contains:

**Glucoraphanin**, a sulforaphane precursor found in broccoli seed extract, that is standardized to a high concentration.<sup>3,4</sup>

**Myrosinase**, an enzyme found in mustard seed that converts **glucoraphanin** to **sulforaphane**.<sup>2-6</sup>

**Vitamin C**, a cofactor for the myrosinase enzyme for more efficient *enzymatic conversion*.<sup>7</sup>

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# In the News



## CoQ10 Improves Early Recovery from Heart Attack

Results from an analysis of a clinical trial revealed a benefit for the use of coenzyme Q10 with standard treatment during early recovery from heart attack in comparison with standard treatment alone.

Investigation of CoQ10's mechanisms of action suggested a healthier inflammatory response among people who consume CoQ10.\*

The trial included 120 heart attack patients who underwent stent placement and were treated with antiplatelet therapy and statin drugs. (Statins decrease CoQ10 synthesis.) Sixty-one participants received **30 mg** CoQ10 per day. (A low dose compared to what most supplement users take today.)

At one- and three-month follow-up examinations, trial participants who were given CoQ10 had greater increases in ejection fraction (which is reduced in heart failure) than the control group. At three months, B-type natriuretic peptide (which, when elevated, can indicate heart failure) had declined to a greater extent among those who received CoQ10. These improvements suggest that CoQ10 supported early heart-function recovery.

**Editor's Note:** Investigation of CoQ10's mechanisms of action in a concurrent mouse study suggested that there was less inflammation in the hearts of mice receiving CoQ10 than in those who did not get it.

\* *BMC Cardiovasc Disord.* 2024 Jan 28;24(1):76.

## Green Tea Intake Lowers Risk of Cardiovascular Disease in Diabetics

Overweight/obese diabetics with a high intake of green tea had a lower risk of developing cardiovascular disease, coronary heart disease, and stroke than those who did not consume it.\*

Researchers evaluated data from 4,756 overweight or obese diabetic participants in the Comprehensive Research on the Prevention and Control of the Diabetes program, an ongoing epidemiologic study in China. They were followed up for a little more than six years.

Compared with participants who did not consume green tea, those who used **five grams** or more of green tea leaves per day had a **29% lower** risk of cardiovascular disease, a **40% lower** risk of coronary heart disease and a **30% reduction** in the risk of stroke.

**Editor's Note:** "Green tea possesses a great amount of antioxidant components including free amino acids, caffeine and polyphenols," the authors stated.

\* *Arch Public Health*. 2024 Feb 2;82:18.







## Antioxidant Consumption Linked to Less Visceral Fat

A study published in *Nutrition Research* found a link between increased consumption of antioxidants and decreased visceral adipose tissue.\* Visceral fat surrounds the organs within the abdomen.

The study included 10,389 participants in the National Health and Nutrition Examination Survey (NHANES) 2011–2018.

Visceral adipose tissue areas were measured with DXA scans. Responses to dietary recall interviews provided information concerning antioxidant nutrient intake. The Composite Dietary Antioxidant Index was calculated from intake levels of **vitamins A, C and E, carotenoids, selenium, and zinc.**

Higher Composite Dietary Antioxidant Index values were associated with lower visceral adipose tissue areas. Compared with individuals whose values were among the lowest one-third of subjects, those whose values were among the top third had significantly less visceral fat.

**Editor's Note:** An unhealthy amount of visceral fat is associated with an increased risk factor for diabetes, cardiovascular disease, metabolic-associated fatty liver disease, and some types of cancer, the authors noted.

\* *Nutr Res.* 2024 Jan 26;124:13-20.

## Branched Chain Amino Acids Boost Concussion Recovery

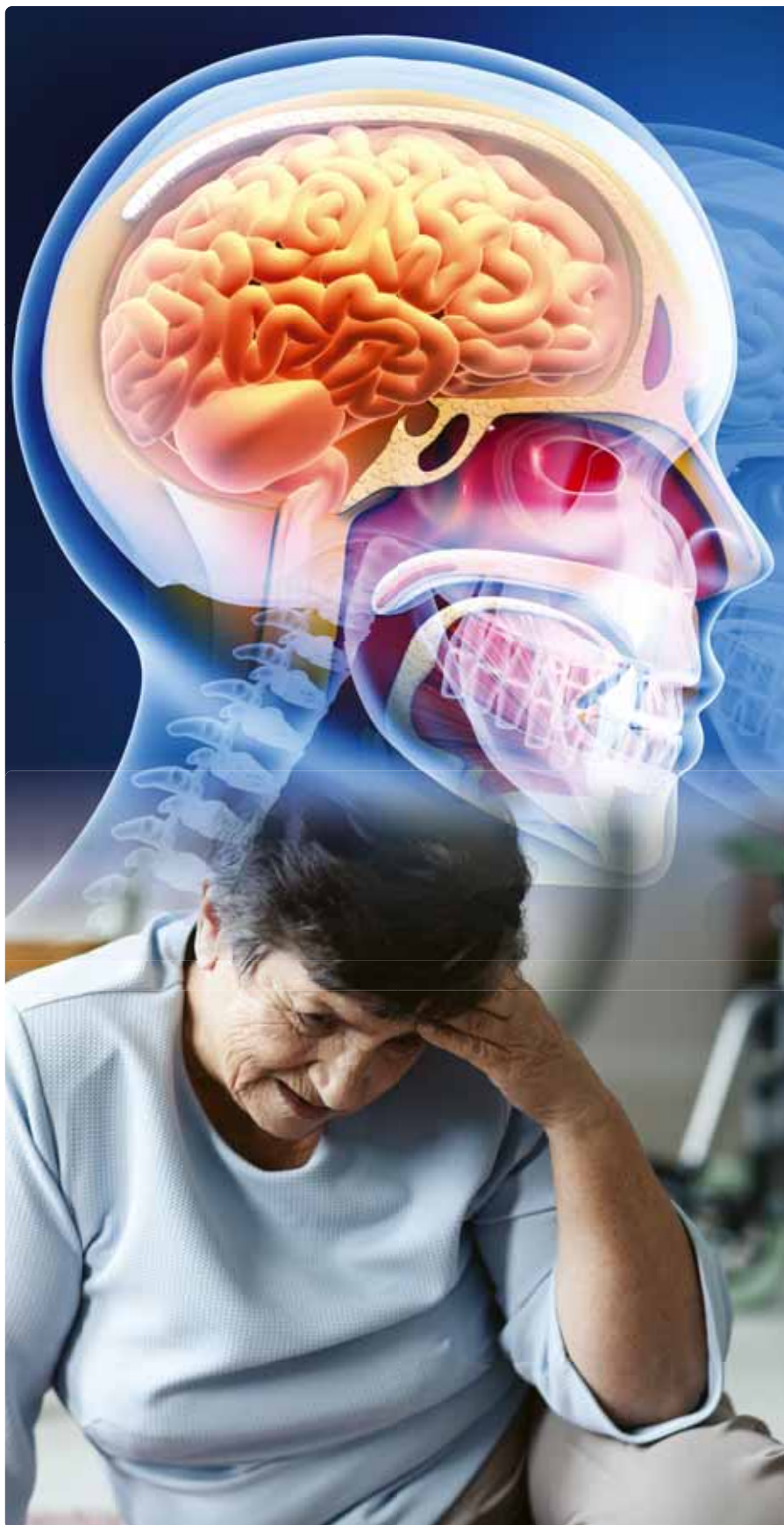
A pilot, double-blind, randomized controlled clinical study revealed a benefit for branched chain amino acids in the treatment of concussion.\* Branched chain amino acids are among the building blocks of the body's proteins.

The trial included 38 concussion patients aged 11–34. Participants received **15, 30, 45 or 54 grams** of branched chain amino acids or a placebo daily for 21 days. Daily neurocognitive tests were conducted, and symptoms, physical and cognitive activity and other factors were evaluated.

At the trial's conclusion, participants who were given branched chain amino acids had decreases in total symptom scores in a dose-dependent manner. Return to physical activity also improved in association with the amount of branched chain amino acids received.

**Editor's Note:** There was a "significant reduction in total symptom score" (decrease of 4.4 points on a 0-54 scale for every **500 grams** of study drug consumed)," researchers concluded, and an increase in "return to physical activity (increase of 0.5 points on a 0-5 scale for every **500 grams** of study drug consumed)."

\* *J Neurotrauma*. 2024 April 11.

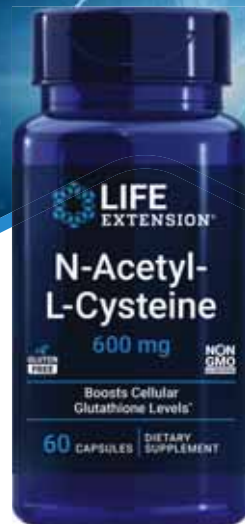




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**Myron**

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- Vitamin K2 (all-trans MK-7) 100 mcg

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<b>Vitamin C</b> (ascorbic acid, calcium and niacinamide ascorbates)	<b>470 mg</b>
<b>Vitamin E</b> (D-alpha tocopheryl succinate, D-alpha tocopherol)	<b>67 mg</b>
<b>Vitamin E</b> (gamma, delta, alpha, beta tocopherols)	<b>20 mg</b>
<b>Vitamin B1</b> (thiamine HCl)	<b>75 mg</b>
<b>Vitamin B2</b> (riboflavin 5'-phosphate)	<b>50 mg</b>
<b>Vitamin B3</b> (niacinamide, niacinamide ascorbate)	<b>50 mg NE<sup>•</sup></b>
<b>Vitamin B5</b> (D-calcium pantothenate)	<b>50 mg</b>
<b>Vitamin B6</b> (pyridoxine HCl, pyridoxal 5'-phosphate)	<b>75 mg</b>
<b>Folate</b> (5-MTHF)	<b>680 mcg DFE<sup>°</sup></b>
<b>Vitamin B12</b> (methylcobalamin)	<b>300 mcg</b>
<b>Biotin</b>	<b>300 mcg</b>
<b>Iodine</b> (potassium iodide)	<b>150 mcg</b>
<b>Magnesium</b> (magnesium oxide)	<b>100 mg</b>
<b>Zinc</b> (zinc citrate, L-OptiZinc <sup>®</sup> zinc mono-L-methionine sulfate)	<b>25 mg</b>
<b>Manganese</b> (manganese citrate, gluconate)	<b>2 mg</b>
<b>Chromium</b> [Crominex <sup>®</sup> 3+ chromium stabilized with Capros <sup>®</sup> amla extract (fruit), PrimaVie <sup>®</sup> Shilajit]	<b>200 mcg</b>
<b>Molybdenum</b> (amino acid chelate)	<b>100 mcg</b>
<b>Inositol</b>	<b>50 mg</b>
<b>Alpha lipoic acid</b>	<b>25 mg</b>
<b>Bio-Quercetin<sup>®</sup> Proprietary Blend</b> providing 35% quercetin (5 mg) [from Japanese sophora concentrate (flower bud)], 30% galactomannans (4 mg) [from fenugreek (seed)]	<b>14 mg</b>
<b>Marigold extract</b> [std. to 5 mg <i>trans</i> -lutein, 155 mcg <i>trans</i> -zeaxanthin]	<b>11.12 mg</b>
<b>Apigenin</b>	<b>5 mg</b>
<b>Boron</b> (amino acid chelate)	<b>3 mg</b>
<b>Lycopene</b> [Lycobeads <sup>®</sup> natural tomato extract (fruit)]	<b>1 mg</b>
<b>Selenium</b> [as sodium selenite, SelenoExcell <sup>®</sup> high selenium yeast, Se-methyl L-selenocysteine]	<b>200 mcg</b>

<sup>^</sup> RAE (retinol activity equivalents). <sup>°</sup>DFE (dietary folate equivalents). <sup>•</sup>NE (niacin equivalents).

For complete list of ingredients and dosages, visit [www.LifeExtension.com](http://www.LifeExtension.com)

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**CAUTION:** Individuals consuming more than 50 mcg (2000 IU)/day of vitamin D (from diet and supplements) should periodically obtain a serum 25-hydroxy vitamin D measurement. 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](http://www.consumerlab.com/survey).

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# How **MAGNESIUM** Helps Prevent Metabolic Syndrome

BY STEVE PAGE, OT/L, PHD, MS, MOT



Roughly one in three adults in the U.S. has **metabolic syndrome**.<sup>1</sup> This puts them at increased risk of heart disease, stroke, and type II diabetes.<sup>2</sup>

Few people even know they have it. To be diagnosed with metabolic syndrome, individuals must have at least three of the following conditions:

- Large waist circumference (reflecting **excess abdominal fat**),
- Elevated **blood pressure**,
- Impaired fasting **blood sugar**,
- Low **HDL** (“good”) cholesterol, and
- High **triglyceride** levels.

Here’s the good news: Research shows that oral intake of **magnesium** may be a helpful tool in managing the conditions that make up **metabolic syndrome**. However, **45%** of people in the United States are deficient in dietary magnesium.<sup>3</sup>

In human studies, **magnesium** intake:

- Improves blood sugar levels and insulin resistance,<sup>4,6</sup>
- Reduces elevated blood pressure,<sup>5</sup>
- Lowers markers of inflammation,<sup>5</sup>
- Reduces triglycerides,<sup>7,8</sup> and
- Improves cholesterol levels.<sup>7,8</sup>

## Dangers of Metabolic Syndrome

**Metabolic syndrome** has become a major public health concern. Up to a **third** of Americans already have it,<sup>9</sup> and millions more are at a high risk with at least *two* of the three conditions that mark it.

Metabolic syndrome refers to a cluster of disorders including abdominal obesity, high blood pressure, low HDL cholesterol, high triglycerides and high blood sugar.<sup>1</sup>

That’s a drastic problem. People with metabolic syndrome are at much higher risk for chronic diseases, including **cardiovascular disease**, **type II diabetes**, **fatty liver**, and some types of cancers.<sup>2</sup>

Moreover, while metabolic syndrome is very common in **older adults**,<sup>10</sup> it is increasingly being seen at *younger* ages as well.<sup>11</sup>

When health care practitioners choose medical treatment for metabolic syndrome, that means they will be treating each contributing condition separately, frequently resulting in a “cocktail” of medications. This may include drugs for **high blood pressure**, **high cholesterol**, and additional medications for other conditions.<sup>2</sup>

However, the generally recommended first-line treatment targets lifestyle, including improving **diet** and engaging in regular **exercise**.<sup>2</sup>

But there’s another factor that’s often overlooked: ensuring adequate intake of **magnesium**.

## Importance of Magnesium

Magnesium insufficiency and deficiency are contributors to metabolic disease, including type II diabetes.<sup>12,13</sup> **Magnesium** is found in low concentrations in a variety of foods, including spinach, almonds, cashews, avocado, black beans, and pumpkin and chia seeds.<sup>14</sup>

Magnesium is required for the proper function of hundreds of *enzymes* that regulate protein synthesis, muscle and nerve function, and more.<sup>14</sup>

**Magnesium** has shown a remarkable ability to help prevent or reverse multiple risk factors for **metabolic syndrome**.

## Combating Metabolic Syndrome

**High blood sugar** is a common condition seen in metabolic syndrome. Magnesium helps regulate blood sugar<sup>5,14</sup> by binding to insulin receptor proteins on cells, enabling **glucose** uptake.<sup>5</sup> This *reduces* sugar in the bloodstream.<sup>15</sup> Deficiency of magnesium negatively impacts these functions.

This may explain why people who consume more magnesium have lower incidences of **type II diabetes**.<sup>16,17</sup> One meta-analysis of population studies including **637,922** people found that the risk of developing type II diabetes was *reduced* by as much as **13%** for every **100 mg** per day *increase* in magnesium intake.<sup>18</sup>

A review of controlled clinical trials confirmed that taking oral magnesium improves **blood sugar levels** and **insulin resistance** in those at high risk for type II diabetes.<sup>4</sup>







WHAT  
YOU  
NEED  
TO  
KNOW

### Human Studies Test Magnesium

In a clinical trial of individuals with prediabetes, participants were randomized to receive **382 mg** of magnesium or placebo. After four months, the group supplementing with magnesium had about **11.6%** lower fasting blood glucose levels, and an **8.8%** decrease in post-meal glucose as compared to the placebo group.<sup>19</sup>

In addition, magnesium helps relax the muscle cells in blood vessel walls,<sup>20</sup> reducing high **blood pressure**.<sup>21</sup> Elevated blood pressure is another condition associated with **metabolic syndrome** and is a risk factor for stroke and early mortality.<sup>22</sup>

In a meta-analysis of **34** clinical trials, oral intake of **magnesium** (median dose: **368 mg** daily) reduced **systolic** (top number) and **diastolic** blood pressure in a median time period of just three months.<sup>21</sup>

Obesity can cause low-grade chronic inflammation.<sup>23</sup> **Inflammation** and obesity are drivers of metabolic syndrome.<sup>24</sup> Studies have shown an association between *low* magnesium intake with *increased* inflammation and increased risk of cardiovascular diseases, high blood pressure and type II diabetes. A meta-analysis of seven observational studies showed that dietary magnesium intake is inversely associated with **C-reactive protein** levels (a marker of inflammation).<sup>25</sup>

A meta-analysis of randomized-controlled trials showed that magnesium supplementation reduced **C-reactive protein** levels in individuals with elevated levels of this maker of inflammation.<sup>26</sup>

## Help Ward Off Metabolic Syndrome

- **Metabolic syndrome** is a cluster of conditions that include a large waist circumference (indicating excess abdominal fat), elevated blood pressure, high blood sugar, low HDL cholesterol, and high triglycerides.
- Having three or more of these conditions increases risk for heart disease, type II diabetes, stroke, and premature death.
- Oral intake of the mineral **magnesium** can help prevent or reverse the conditions that make up metabolic syndrome.
- In clinical studies, magnesium intake reduced high blood sugar and blood pressure, lowered triglycerides and markers of inflammation, and improved cholesterol levels.



An additional large review found that taking **oral magnesium** improved multiple risk factors for heart disease and metabolic syndrome, including:<sup>27</sup>

- Reducing fasting **blood glucose** levels,
- Lowering **triglyceride** levels,
- Reducing **LDL** (bad) cholesterol,
- Increasing **HDL** (good) cholesterol, and
- Lowering systolic **blood pressure** levels.

Given all these benefits, magnesium can be a helpful tool in managing metabolic syndrome.

## Summary

Having **metabolic syndrome** increases the likelihood of developing type II diabetes, heart disease, strokes, and other chronic conditions. **Magnesium** levels are frequently low among those with metabolic syndrome and its risk factors.

Clinical studies show that oral intake of **magnesium** can help improve multiple conditions that make up **metabolic syndrome**, including abnormal blood pressure, blood sugar, cholesterol, and triglyceride levels. •

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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**Raymond**

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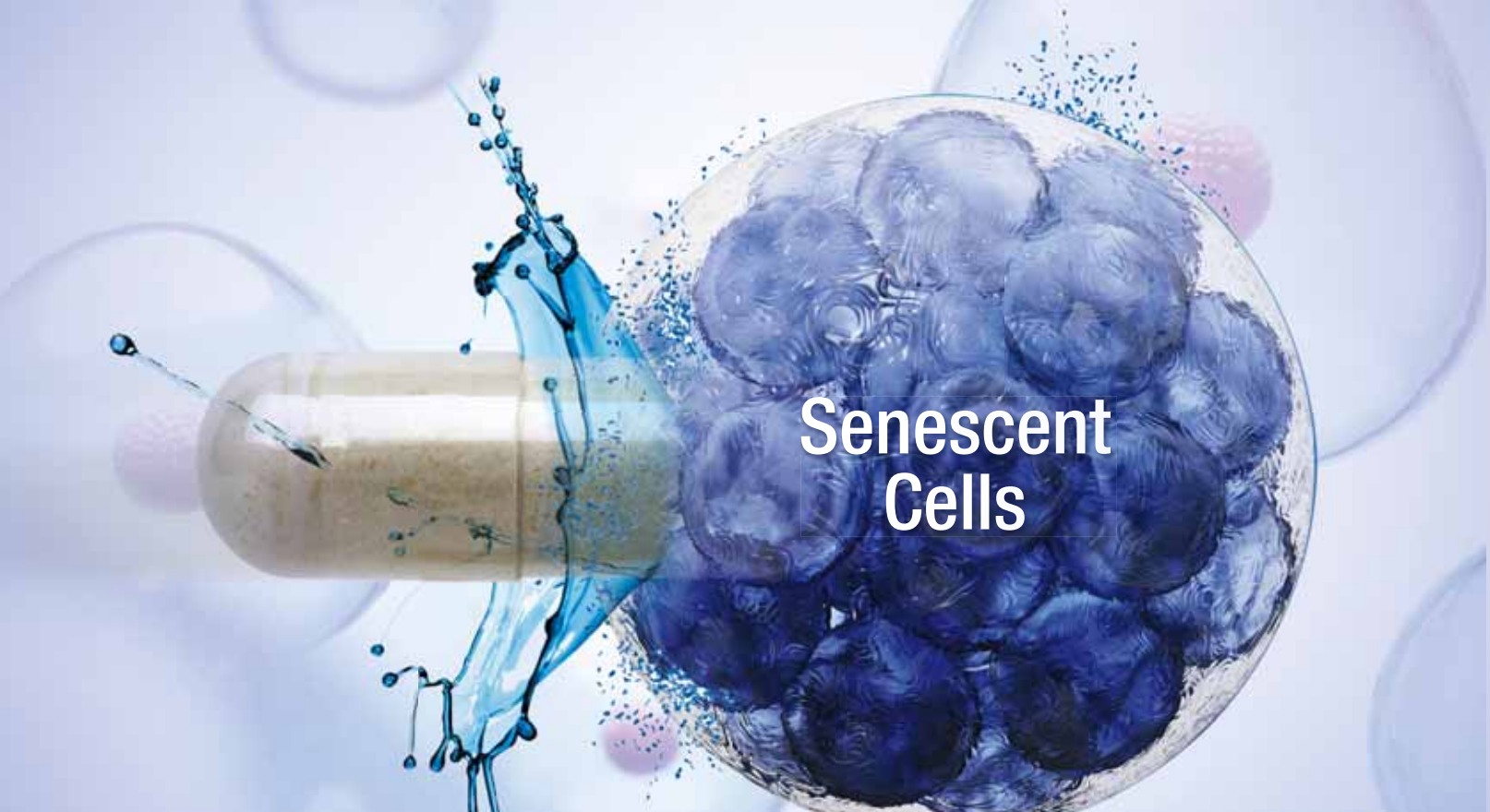
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# Revitalize Skin with **VEGAN** **PROCOLLAGEN**





BY MICHAEL DOWNEY

**Collagen** forms **70%** of the skin's underlying scaffolding known as the dermis.<sup>1</sup> It is required to maintain youthful-looking **skin**.<sup>2,3</sup>

With **age**, our internal **collagen** production markedly declines.<sup>3,4</sup>

**Collagen** loss weakens skin structures, leading to dryness, sagging, and **wrinkles**.<sup>2</sup>

Scientists have developed a **vegan** approach to collagen replenishment known as **procollagen** with inducer compounds that promote the body's production of collagen.

In **2024**, the *Journal of Functional Foods* published the results of a **clinical trial** showing that in just eight weeks, this plant-derived **procollagen**:

- **Decreased wrinkles** by **14%**,
- **Enhanced smoothness** by **13%**, and
- **Increased (skin) collagen density** by **8%**.

These benefits of **collagen** were provided using **vegan** ingredients.

## The Secret to Youthful Skin

**Collagen**, the most abundant protein in the human body<sup>3</sup> is essential for **youthful-looking** skin.

Type 1 is the main collagen found in skin, making up **80%-90%** of the subsurface layer of the skin by weight.<sup>6</sup> **Collagen** gives skin a smooth appearance, firmness, and resilience.<sup>7</sup>

It also provides flexibility. It is integrated with fibers of **elastin**, a protein that allows the skin to stretch and return to its original shape.

Around **age 25**, the cells that produce **collagen fibers** slow down. The remaining fibers can stiffen, break, and lose shape.<sup>3,7</sup>

With advancing age, the ability to replenish collagen declines by about **1%-1.5% each year**.<sup>7</sup>

Collagen decline accelerates even faster in women **after menopause**.<sup>8</sup> Smoking, lack of sleep, excess alcohol, and sun exposure also decrease collagen levels.<sup>3,9-11</sup>

The result of collagen loss is **visible skin aging**, including thinning, sagging, and wrinkles.<sup>12</sup>

## A Vegan Collagen Biomimetic

To boost collagen levels, people frequently take **oral collagen**, which is chiefly derived from cows (*bovine* collagen), chicken, or fish (*marine* collagen).

When these collagens are ingested, they are broken down into **amino acids**, which are then absorbed and used by the body.<sup>3,13</sup>

Although the amino acid profile in **animal** collagen is *similar* to that of **humans**, there may be a challenge due to people's sensitivities and dietary preferences.<sup>5</sup>

Scientists have developed a **vegan alternative** that has *exactly the same* amino acid profile as the most abundant collagen found in **human skin**, known as human **type 1 collagen**.

This precise combination of amino acids is known as a **human type 1 collagen biomimetic**.

This formulation does not contain collagen. It is a **procollagen** (a collagen precursor) that **mimics** the effects of supplementation with animal collagen while using only sustainable, allergen-free, **vegan** ingredients.

## Stimulating Collagen Production

Although this procollagen delivers the right **amino acids** in the right proportions, scientists needed to ensure that the **human** body would optimally *assemble* these building blocks into **collagen**.

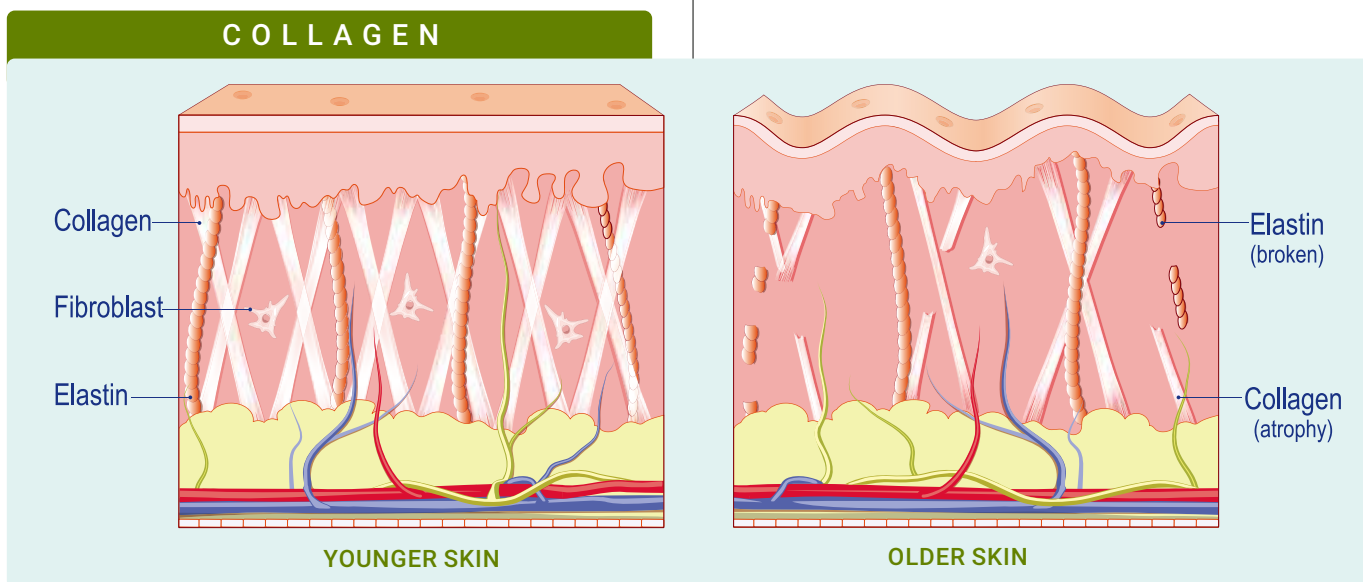
To make this happen, three inducing compounds were added that have been shown in preclinical studies to **stimulate** collagen synthesis.<sup>5,14,15</sup>

These three **inducing agents** are:

- **Vitamin C**,
- **Ginseng root** extract, and
- **Gotu kola** (*Centella asiatica*) leaf extract.

In a cell study, **human skin fibroblasts** (the cells mainly responsible for collagen synthesis) were treated with this combination of amino acids *and* inducing compounds.

After **48 hours**, the **collagen** in the fibroblasts had increased by **135%**,<sup>16</sup> showing that this formulation induced new collagen synthesis.







WHAT  
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### Rejuvenating Skin

Based on these results, scientists proceeded with **human** trials.

In a pilot study, adults who took **3.9 grams** of this **vegan procollagen** daily had a **5%** increase in collagen density and a **13%** decrease in skin **wrinkles** after four weeks.<sup>17</sup>

In another pilot study, adults who took **5 grams** of the procollagen daily for four weeks had:<sup>18</sup>

- **14%** greater collagen **density**,
- **16%** less **roughness**,
- **16%** less skin **redness**,
- **14%** decrease in **wrinkles**, and
- **7%** increase in skin **hydration**.

No adverse effects were observed.

### Turning Back the Clock

Encouraged by these findings, scientists conducted a larger clinical trial of this vegan procollagen and published the results in 2024.

## A Vegan Alternative to Collagen

- **Collagen** keeps skin smooth, hydrated, and youthful looking.
- Starting around **age 25**, collagen production *decreases* about **1%-1.5%** per year, leading to **wrinkles**, roughness, and dry, sagging skin.
- Most oral collagen is derived from cows, chicken, or fish. A new, oral **procollagen** is entirely **vegan**, and is used by the human body to make its *own* collagen.
- This procollagen formula contains an **amino acid profile** identical to that of human skin type 1 collagen, plus three inducing compounds that promote the body's own collagen synthesis.
- Human studies showed that taking **5 grams** of this vegan alternative *decreased wrinkles* by **14%**, *increased skin smoothness* up to **16%**, and improved hydration, elasticity, and redness.

They divided 90 adults into three groups. Daily, before breakfast:<sup>5</sup>

- Group 1 took a **placebo**,
- Group 2 took **5 grams of fish collagen**, and
- Group 3 took **5 grams of vegan procollagen**.

**Wrinkles** were measured using forehead skin.

After **eight weeks**, compared to baseline, those who had taken the **procollagen** had:<sup>5</sup>

- **8% increase** in skin collagen **density**,
- **14% decrease** in skin **wrinkles**,
- **6% increase** in skin **elasticity**,
- **13% improvement** in skin **smoothness**, and
- **6% increase** in skin **hydration**.

Of those showing wrinkle reduction in the **procollagen** group, most (**63%**) had a remarkable average **33% reduction** in the size of the **wrinkles**.<sup>5</sup>

Overall, the improvements were **superior** to placebo results and similar to the results for marine collagen, making it an effective **vegan alternative** to collagen.

### Summary

**Collagen** loss results in **wrinkles**, sagging, and other signs of skin aging.

Scientists developed an oral **vegan procollagen** containing the *identical* amino acid profile found in human skin type 1 collagen.



They added **inducing compounds** to *stimulate* the body's own collagen synthesis.

**Human** trials showed that this formula safely produces a **13%-14% decrease** in skin **wrinkles** in just eight weeks. Smoothness, hydration, elasticity, and redness also improved.

This **procollagen** represents an effective **vegan** alternative to animal-based collagen products. •

If you have any questions on the scientific content of this article, please call a **Life Extension**

Wellness Specialist at 1-866-864-3027.

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**Caution:** Those taking a vitamin K antagonist (e.g. warfarin) should use Bone Restore without vitamin K2. Fruitex B® and OsteoBoron® are registered trademarks of VDF Futureceuticals, Inc. U.S. patent #5,962,049.

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

# SUPPORT HEALTHY LIPID LEVELS



FRUIT

*Amla*

EXTRACT

ADVANCED LIPID CONTROL  
CAN HELP SUPPORT  
HEART HEALTH.



Item #01828

60 vegetarian capsules

1 bottle \$22.50

4 bottles \$20.25 each



## ADVANCED LIPID CONTROL<sup>†</sup>

contains a standardized  
**500 mg** extract of **amla** in  
each capsule.

Researchers have discovered  
that **amla** improves various  
markers of **cardiovascular**  
health.

In a **placebo-controlled** clinical  
trial\* **amla extract** supported  
healthy levels of:

- ▶ **LDL**
- ▶ **HDL**
- ▶ **Triglycerides**
- ▶ **CRP (C-reactive protein)**

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

<sup>†</sup> For those already within normal range.

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

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"I have been taking it for many years and would not stop."

**Alicia**

VERIFIED CUSTOMER REVIEW

# CoQ10

## When Your Energy Matters Most

When every second counts, you need to make sure energy levels are up for any task. **Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™** can help.

Formulated with a highly absorbable form of CoQ10 and a patented delivery system, our best-selling CoQ10 formula promotes your heart health and your body's youthful cellular energy production, so you can get the job done.



### Item #01426 | Best Seller

Our customer favorite  
CoQ10 formula

100 mg • 60 softgels • 2-month supply  
1 bottle **\$42**

4 bottles \$37.50 each

### Item #01733 | Best in Class

Supercharged heart health &  
general fatigue fighter

100 mg • 30 softgels  
1 bottle **\$33.75**

4 bottles \$29 each

### Item #01431

Our maximum  
dose ubiquinol

200 mg • 30 softgels  
1 bottle **\$39**

4 bottles \$35 each

### #1 Rated CoQ10 Products - 5 Time Winner!\*

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

PrimaVie® is a registered trademark of Natreon, Inc.

Q+®, Kaneka Ubiquinol™, and the quality seal™ are registered or pending trademarks of Kaneka Corp.

\*2023 Consumer Satisfaction, Rated #1 Catalog/Internet Merchant. Ratings based on results of the 2023 ConsumerLab.com Survey of Supplement Users. More information at [www.consumerlab.com/survey](http://www.consumerlab.com/survey).



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

# Love the Sun?

## Shield Your Skin from Within

Unique ORAL formula provides *Polypodium leucotomos* fern extract along with nicotinamide and red orange extract.

"I now have peace of mind knowing I'm doing what I can to protect myself."

**Elaine**

VERIFIED CUSTOMER REVIEW



**Item #01938**

120 vegetarian capsules  
1 bottle \$33  
2 bottles \$30 each



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

**CAUTION:** This product is not a substitute for topical sunscreens. Gastric disturbances may occur. Consult with your healthcare provider before taking this product if you have gout or liver disease.

Red Orange Complex™ is a trademark of Bionap S.r.l.

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



# BUILD BETTER Beauty

WITH VEGAN PRO COLLAGEN

**Vegan Pro Collagen** is an *alternative* to animal collagen with an amino acid profile *identical* to human type I collagen.

The formula contains **amino acids** plus a combination of **ginseng extract**, **vitamin C**, and **gotu kola extract** that have been shown to support normal collagen production.\*

**Vegan Pro Collagen** helps reduce the appearance of **skin aging** and **wrinkles**.

A **clinical trial** showed that this vegan formulation decreased **wrinkles** up to **14%**, enhanced skin texture up to **13%** and increased skin **collagen density** by **8%** in just **eight weeks**.\*

**Vegan Pro Collagen** is a *sugar-free*\*\* powder, with natural orange flavor and other flavors.

\*J Functional Foods. 2024;112:105955.



\*\*Not a low-calorie food.

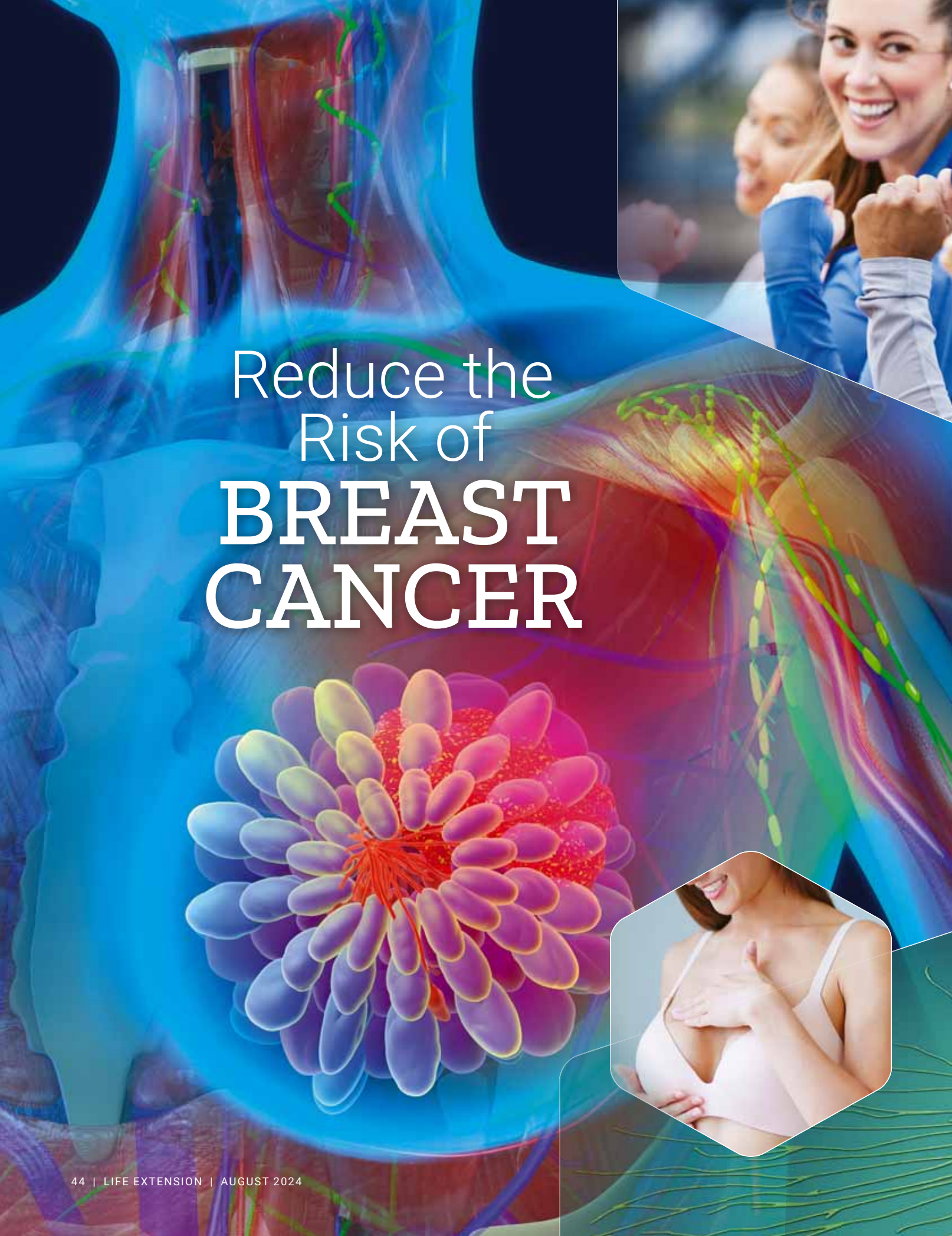
Item #02528  
Net Wt. 189 g (0.417 lb)  
1 jar \$32.25

4 jars \$30.50 each

For full product description and to order Vegan Pro Collagen, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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





Reduce the  
Risk of  
**BREAST  
CANCER**





BY RHONDA STEIN

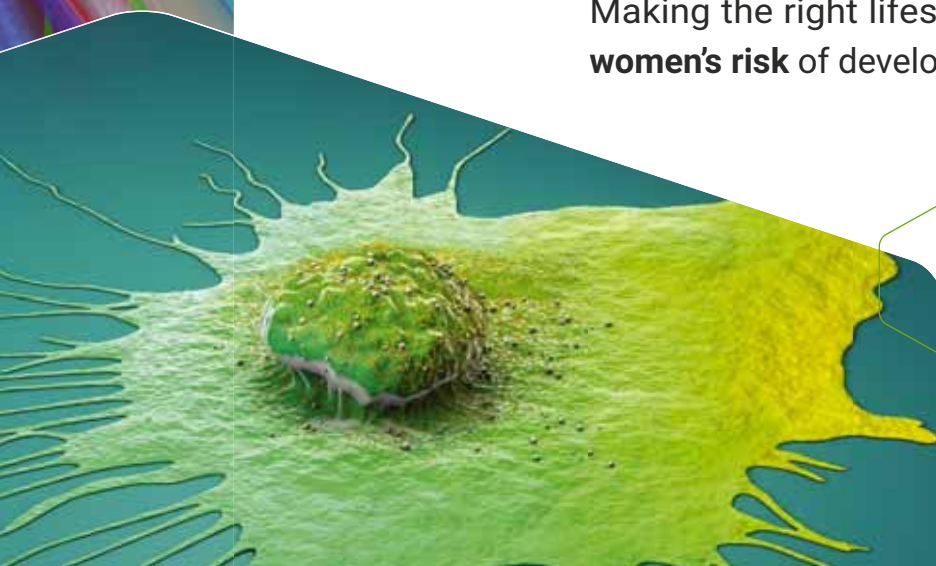
**Breast cancer** is the most common malignancy affecting women *and* the leading cause of cancer **deaths** in women worldwide.<sup>1</sup>

Many **risk factors** increase the likelihood of developing breast cancer.

Modifiable factors that increase risk include poor diet, sedentary lifestyle, and obesity.<sup>2</sup>

Conversely, ingestion of healthy foods and beverages has shown protective benefits.<sup>3-10</sup>

Making the right lifestyle changes can reduce **women's risk** of developing breast cancer.<sup>11,12</sup>



## Non-Modifiable Risks

Roughly **one of every three** new cancers diagnosed annually in women is **breast cancer**.<sup>13</sup>

Some forms are easily treatable. But more advanced and aggressive types can be deadly. The **five-year** survival rate of metastatic breast cancer is about **30%**.<sup>14</sup>

Some risk factors for developing breast cancer, like **female sex** and **older age**, can't be changed.

Some other *non-modifiable* risk factors include:<sup>1</sup>

- **Genetics:** Women with inherited mutations of the **BRCA1** or **BRCA2** genes are at increased risk for breast cancer. In women who have a first-degree relative diagnosed with breast cancer this risk is doubled.<sup>15</sup>
- **Race/ethnicity.** The risk of developing breast cancer is highest among white non-Hispanic women, while the rate of **mortality** from breast cancer is higher in African American women.<sup>1</sup>



## Risk Factors You Can Change

**Modifiable risk factors** can be altered, decreasing the risk of developing breast cancer. They include the following.<sup>16,17</sup>

### DRINKING AND SMOKING

Excessive **alcohol** intake is linked to breast cancer risk.<sup>1</sup> Alcohol may induce greater estrogen imbalances in women, exposing breast tissue to more of the hormone's stimulatory effects that encourage tumor growth.<sup>18,19</sup>

While cigarettes are known for causing lung cancer, toxic chemicals in **smoke** can also contribute to breast cancer. Active smoking, especially in postmenopausal women, is associated with a **16%** higher risk of developing breast cancer.<sup>20</sup> In addition to this, even in non-smokers, passive smoking significantly adds to the risk of breast cancer.<sup>1,20</sup>

### SEDENTARY LIFESTYLE

There is growing evidence that the amount of **physical activity** has a significant association with breast cancer risk.<sup>11,20,21</sup>

In post-menopausal women, those with a *higher* level of **regular exercise** have a significantly *lower* risk of developing breast cancer.<sup>22</sup> One large observational study showed that the most active women had a **25%** reduction in the risk of breast cancer compared to women who had the least physical activity.<sup>23</sup>

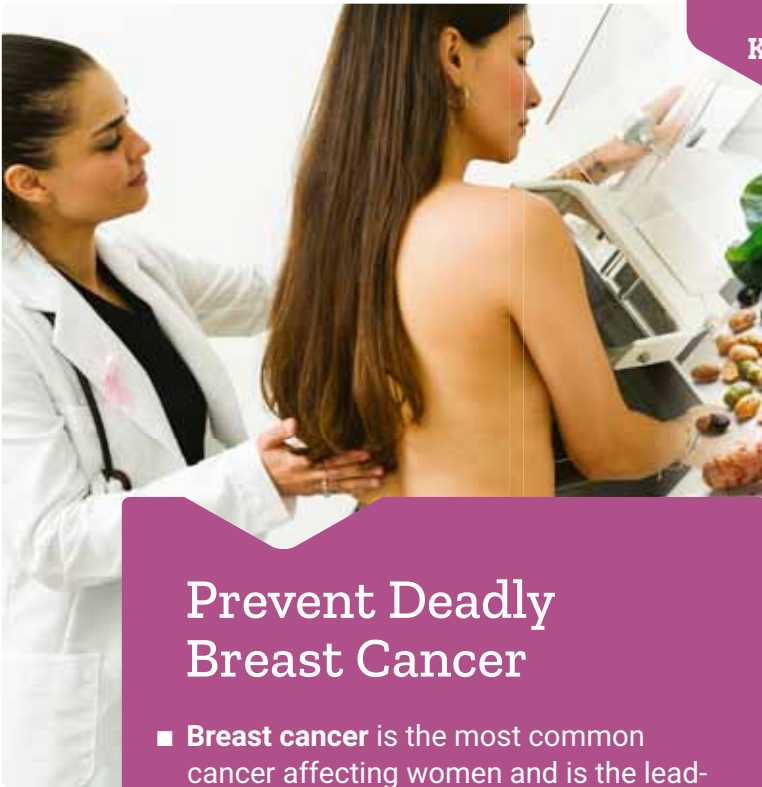
Another observational study showed a **15%** reduction in breast cancer risk in women with a level of physical activity equivalent to brisk walking for one hour per day, compared to women whose activity was equal to less than one hour of walking per week.<sup>24</sup>

An observational study evaluated the association between physical activity in high-risk women before and after diagnosis and survival outcomes. It found that women who were physically active before and after diagnosis had a **41%** reduced risk of cancer **recurrence** and a **49%** reduced risk of cancer **death**.<sup>25</sup>

### BEING OVERWEIGHT

The risk of developing breast cancer is significantly *higher* in those who are **overweight** or **obese**. Overweight women also tend to develop more **aggressive** forms of breast cancer and have greater rates of mortality and tumor recurrence.<sup>1</sup>



WHAT  
YOU  
NEED  
TO  
KNOWPrevent Deadly  
Breast Cancer

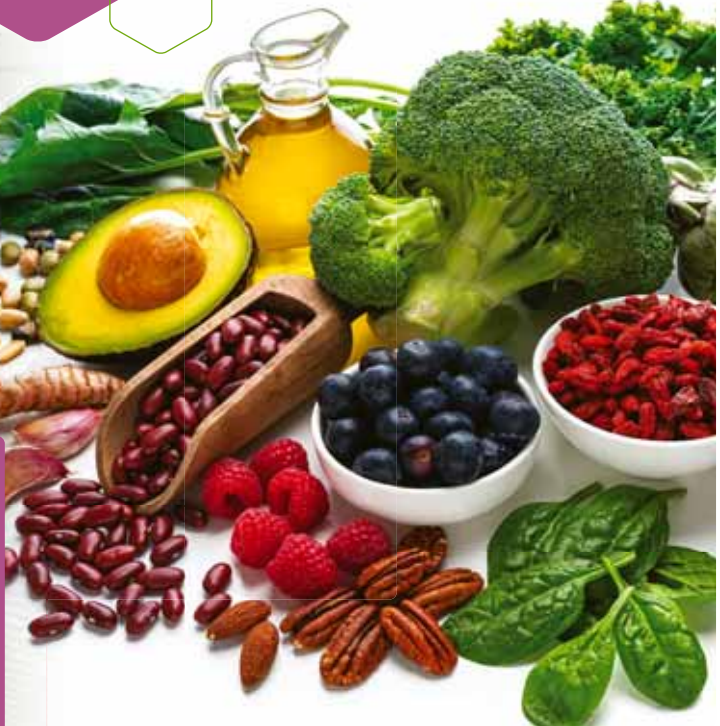
- **Breast cancer** is the most common cancer affecting women and is the leading cause of cancer death in women worldwide.
- Ways to **decrease risk** for breast cancer include quitting smoking, losing weight, improving diet, curbing alcohol consumption, and increasing exercise.
- Certain **nutrients** may also reduce risk for breast cancer, including vitamin D, sulforaphane from cruciferous vegetables, selenium, green tea, and other plants.

## POOR DIET

Consuming excessive amounts of highly processed foods, fats, red meat, and refined sugars is linked to greater breast cancer risk.

A **healthy diet** high in vegetables, fruits, legumes, whole grains, and lean protein is associated with *lower* risk.<sup>1</sup>

One study found that for each **10%** increase in **highly processed foods** in the diet, there is an **11%** increase in risk of developing **breast cancer**.<sup>26</sup>



## Protective Nutrients

Some foods, beverages and nutrients are associated with protective roles against **breast cancer**. Increasing their intake may reduce risk *and* improve outcomes in women already diagnosed with cancer.

## GREEN TEA

*Catechins*, health-promoting polyphenols that can be found in tea leaves, demonstrate **anticancer** activity. A meta-analysis showed a reduction of **27%** in recurrence of breast cancer among those who drank more than **three cups** of green tea a day compared to non-drinkers.<sup>27</sup>

Green tea polyphenols such as epigallocatechin gallate (EGCG) have been shown to reduce **breast density** in younger women after 12 months of green tea extract supplementation.<sup>28</sup>

This is important because dense breast tissue is an independent risk factor of breast cancer incidence and makes early detection with standard mammography more difficult.<sup>29</sup>

In a study including about 500 women with the aggressive **triple negative form** of breast cancer, follow-up information on tea consumption was gathered at 18, 36 and 60 months after diagnosis.

Women who consumed tea during five years after diagnosis had **46% reduced** risk of combined recurrence and breast cancer mortality, and **43% lower** overall mortality risk, as compared to non-tea drinkers.<sup>30</sup>

Two meta-analyses of clinical studies have shown **14%-18%** reduced risk of breast cancer in women who consumed *higher* amounts of tea as compared to those consuming the lowest.<sup>31,32</sup>

### FLAVONOIDS

**Flavonoids** are plant-derived compounds with numerous health benefits, including anti-inflammatory, and anticancer activity.<sup>4,7,33-38</sup>

In addition to green tea **catechins**, **apigenin**,<sup>38</sup> **fisetin**,<sup>35</sup> and **quercetin**<sup>6</sup> have all demonstrated cancer-fighting activity in preclinical models.

### SELENIUM

The mineral **selenium** has been studied for decades for its potential to help prevent or manage cancer.

A meta-analysis of 18 observational studies including **thousands** of women found that those with *higher* body levels of selenium have a *lower* risk of developing **breast cancer**.<sup>39</sup>

In women with breast cancer, those in the highest quartile of dietary intake of selenium had a **31% reduced** risk of **death** from the disease as compared to the lowest quartile.<sup>40</sup>

In another study, **82%** of women in the *highest* quartile of serum levels of selenium had a five-year survival rate, while only **68%** of women in the *lowest* quartile reached a five-year survival. The risk of mortality for patients in the *lowest* quartile of serum selenium was **2.5 times** greater than those in all other quartiles.<sup>41</sup>

### CRUCIFEROUS COMPOUNDS

Intake of **cruciferous vegetables**, including broccoli, kale, cabbage, and brussels sprouts, is associated with a lower risk of breast cancer.<sup>8,10</sup>

These foods provide nutrients that have demonstrated potent anticancer activity in preclinical studies, including **sulforaphane**,<sup>8</sup> **I3C (indole-3-carbinol)**,<sup>5,10</sup> and **DIM (3,3'-diindolylmethane)**.<sup>5,10</sup>

The concentration of **sulforaphane** found in broccoli sprouts is up to *100 times* higher than mature plants. The compounds in different parts of broccoli cells mix together to release sulforaphane for assimilation into the bloodstream.<sup>42</sup>

### VITAMIN D

Several studies show that maintaining higher **vitamin D** levels protects against developing breast cancer *and* improves survival in women with cancer.<sup>43-46</sup>

In one analysis, women with vitamin D levels of **60 ng/mL** or more had an **82% lower risk** of breast cancer than women with low vitamin D levels.<sup>44</sup>





High blood levels of vitamin D in breast cancer patients are associated with a **42% lower** risk of mortality as compared to lower blood levels.<sup>43</sup>

A meta-analysis found that every **4 ng/mL** increase in vitamin D blood levels decreased the risk of breast cancer death by **6%**.<sup>47</sup> This implies that boosting *25-hydroxyvitamin D* blood levels from **30 ng/mL** to **50 ng/mL** might decrease risk of death by around **30%**.

## OTHER NUTRIENTS

**Curcumin** from turmeric and **resveratrol** from red grapes and other plants successfully block breast cancer development and spread in animal and cell models.<sup>9,48</sup>

Preclinical studies have also found that **curcumin** can make breast cancer cells more sensitive to chemotherapy drugs.<sup>9,49</sup>

**Carotenoids**, pigments found in many fruits and vegetables, have anticancer activity.<sup>50</sup> They include lycopene, astaxanthin, lutein, and zeaxanthin.

One study that followed over 32,000 women for more than **20 years** found that higher blood levels of **carotenoids** were associated with up to a **28% lower risk** of breast cancer. In women who did develop cancer, those with the highest carotenoid levels were less likely to suffer **recurrence or death**.<sup>51</sup>

Maintaining adequate levels of these nutrients and making other lifestyle changes may help reduce the risk of breast cancer.

## Summary

Avoiding smoking, reducing alcohol intake, improving diet, losing weight, and increasing exercise can significantly **reduce breast cancer risk**.

Ensuring adequate intake of vitamin D, cruciferous vegetables, selenium, and other nutrients may also help reduce risk, according to published biomedical studies. •

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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Dryness and loss of firmness are outward signs of normal aging.

One reason is loss of **ceramides** that are required for skin to retain its **moisture** and youthful suppleness.

**Skin Restoring Ceramides** contains wheat-derived ceramide lipids in an **oral** capsule that **hydrate** the skin and smooth the appearance of fine lines and wrinkles.

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Ceratiq® is a registered joint-trademark of PLT Health Solutions and Arco, Robertet Group, France.

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Contains wheat. Gluten free.



GLUTEN  
FREE

1  
DAILY

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GMO  
LE CERTIFIED

VEGETARIAN  
LE CERTIFIED

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



"Great product."

Jack

VERIFIED CUSTOMER REVIEW

# Keep Your ENERGY UP

Occasional feelings of fatigue happen to everyone.

Scientists have found that an extract of **French oak wood** contains compounds that fight fatigue *at the cellular level*.\*

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

For full product description and to order **ENERGY RENEW**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



Item #01900  
30 vegetarian capsules  
1 bottle \$27  
4 bottles \$24.75 each

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

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



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# Menopause Relief

For Hot Flashes and 10 Other  
Menopause Discomforts

**Menopause Relief** contains a proprietary extract of Siberian rhubarb that in clinical studies provides hormone-free significant relief for all 11 menopause discomforts on the Menopause Rating Scale, including:

- Hot flashes
- Night sweats
- Irritability
- Heart discomfort
- Mood swings
- Sleep disturbances
- Exhaustion
- Sexual function
- Joint discomfort
- Bladder problems
- Vaginal dryness

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

For full product description and to order **Menopause Relief**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

**ESTROGEN  
FREE**

GLUTEN  
FREE

1  
DAILY

NON  
GMO  
LE CERTIFIED

VEGETARIAN  
LE CERTIFIED



**Item #02204**

30 enteric-coated  
vegetarian tablets

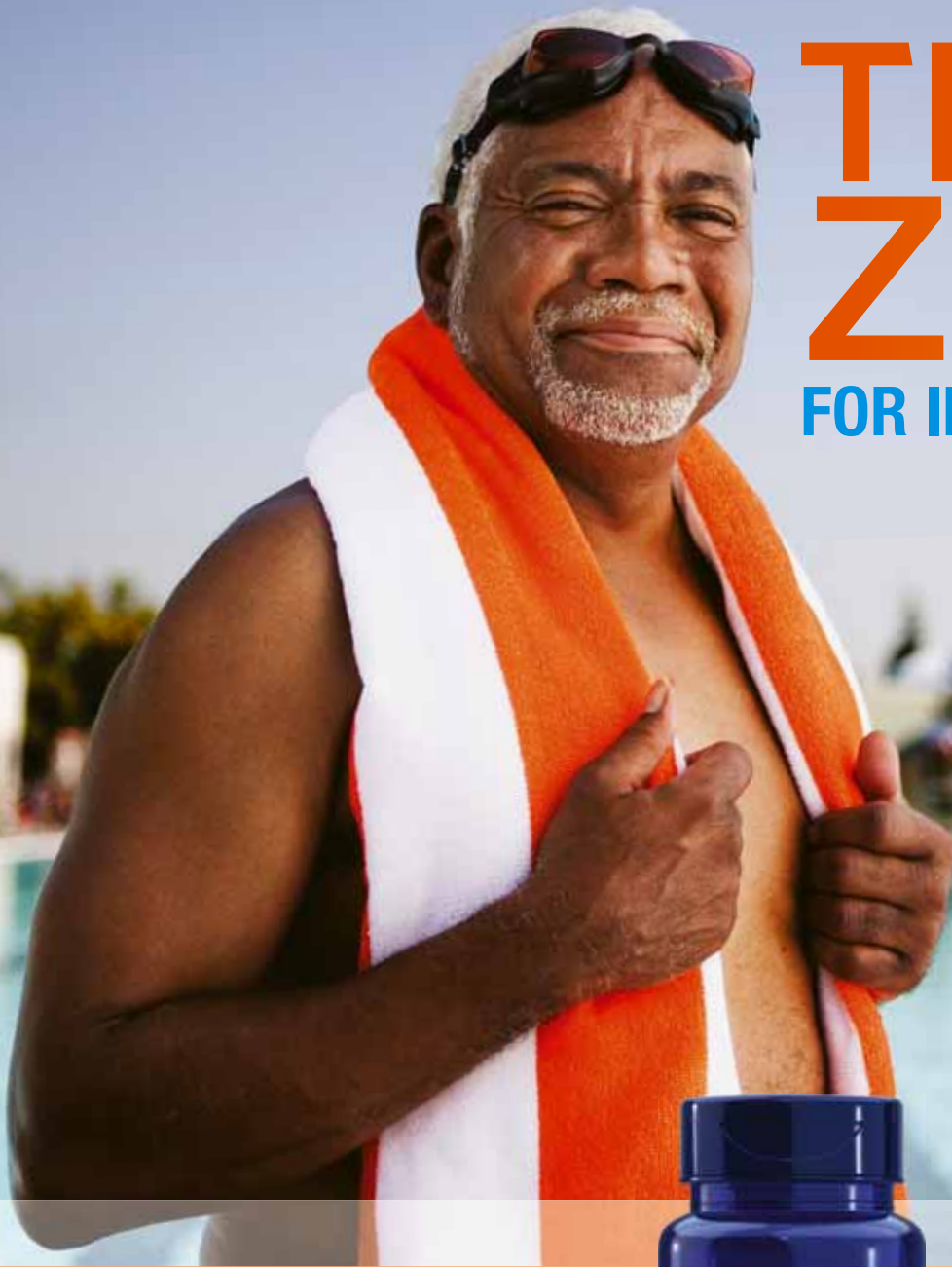
1 bottle **\$18**

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French Maritime Pines







Bilberry

# Defend Your Eyes Against GLAUCOMA

BY PATRICK SUAREZ

**Glaucoma** is the leading cause of **blindness** in adults in the U.S.<sup>1,2</sup>

Increased pressure within the eye, called **intraocular pressure**, is a risk factor and diagnostic measure for the **optic nerve damage** that is the underlying vision-robbing pathology of glaucoma.<sup>1</sup>

Scientists have identified two plant-derived extracts, **bilberry**<sup>3,4</sup> and **French maritime pine bark**,<sup>5,6</sup> with impressive health benefits. Taken alone or with glaucoma medications, this extract blend helps maintain healthy **eye pressure**.<sup>3,7-9</sup>

In one **clinical study**, this combination was shown to *reduce* **intraocular pressure** as much as **24%** —with reductions of **40%** when combined with standard therapy.<sup>8</sup>



## A Leading Cause of Vision Loss

**Glaucoma** is an eye disease that results in gradual vision loss. It affects approximately **80 million** people worldwide.<sup>1</sup>

People who are in the early stages of **glaucoma** generally have no symptoms. Glaucoma is caused by damage to the **optic nerve**.<sup>1</sup>

It most commonly results from a problem with the drainage system of the eyes, resulting in fluid retention in the eyeball and excess pressure. Over time, this pressure damages the retina and the **optic nerve** (that carries visual information from the eye to the brain).

The result is reduced visual acuity, sometimes leading to permanent blindness.<sup>10</sup>

## Preventing Glaucoma

There is no cure for **glaucoma**.<sup>2</sup> But *reducing* elevated intraocular pressure may help prevent progression of glaucoma and vision loss.

**Open angle glaucoma** is the most common type, and accounts for **90%** of glaucoma cases. This happens as the eye's drainage channels become blocked and intraocular pressure rises.<sup>11</sup>

Additionally, endothelial dysfunction and vascular structural changes can alter blood flow within the tissues and elevate intraocular pressure, leading to open angle glaucoma.<sup>10,12,13</sup>

Once the **optic nerve** is damaged, it can't be repaired—even if the raised intraocular pressure is corrected.<sup>14</sup>

This makes it essential to find a way to reverse high intraocular pressure *before* it causes the irreversible damage of glaucoma.

Together, two plant-based extracts have shown an ability to reduce this intraocular pressure: **bilberry** and **French maritime pine bark**.

## Eye Health Extracts

**Bilberries** are relatives of blueberries that grow mostly in Europe. They contain high concentrations of health-promoting compounds, particularly **anthocyanins**.<sup>15</sup>

Bilberry extracts offer protection from many common eye conditions. Studies indicate that bilberry extracts (alone or in combination with other nutrients) help protect against disorders like **cataract**<sup>16</sup> and **glaucoma**,<sup>17</sup> improve parameters of **dry eye syndrome**,<sup>4</sup> and help improve symptoms related to **eye fatigue**.<sup>18</sup>

Scientists have developed a **standardized extract** of bilberry that contains at least **36% anthocyanins**.<sup>8</sup>

Improved blood flow to the eye may be supportive of maintaining healthy blood flow and pressure. A study showed **bilberry extract** could counteract hyperpermeability of capillaries in the eye. This effect increases ocular blood flow, which may reduce **intraocular pressure**.<sup>3</sup>





Another extract, derived from the bark of the **French maritime pine tree**, contains a potent mixture of beneficial compounds, including **procyanidins**.<sup>5,19</sup> This pine bark extract has been found to benefit patients suffering from **diabetic retinopathy** and **retinal micro-hemorrhages**.<sup>6,20</sup>

French maritime pine bark extract has been shown to improve the function of the **endothelium** (the delicate layer of cells lining the blood vessels).<sup>21-23</sup> A clinical study found a high prevalence of microvascular endothelial dysfunction in open angle glaucoma patients, compared to controls.<sup>13</sup>

### Reduced Eye Pressure

A **combination** of bilberry and pine bark extract has been studied for its ability to relieve the eye pressure that leads to **glaucoma**.

In an animal model, this combination reduced **intra-ocular pressure** and protected critical **nerve cells** of the eye against damage and death.<sup>24</sup>

### Clinical Trial

But the most impressive results have been seen in studies of humans at risk for **glaucoma**.

In an initial controlled trial, adults with elevated eye pressure who had not yet shown evidence of glaucoma were either left untreated or given a combination of **80 mg of French maritime pine bark extract** and **160 mg of standardized bilberry extract** daily for six months.<sup>3</sup>

After three months, untreated subjects had almost no change, while those receiving the extracts had a nearly **13% decrease** in intraocular pressure.

Those taking the combination also had a significant improvement in **ocular blood flow**.<sup>3</sup>

A follow-up study compared the two extracts to a common eye pressure-lowering medication, **latanoprost** eye drops. Adults with elevated intraocular pressure received either the extracts, the drops, or both.<sup>8</sup>

In this case, all three groups demonstrated a reduction in intraocular pressure.

While the drops lowered eye pressure by **28%** after four weeks of treatment, the **bilberry-pine bark** blend alone worked more gradually, reducing **intraocular pressure** after six weeks. This improvement progressed so that by sixteen weeks, the extract group had a **24%** reduction in pressure. The extract also had a better safety profile.

The medication and extracts *together* reduced eye pressure by almost **40%** by the end of the 24-week study period, which was greater than the medication alone. These changes were accompanied by improvements in ocular blood flow.



WHAT  
YOU  
NEED  
TO  
KNOW

## An Extract Blend for Eye Health

- **Glaucoma**, usually driven by elevated eye pressure, is a common cause of blindness.
- Lowering **eye pressure** can help prevent the progression of glaucoma and vision loss.
- Scientists have formulated a blend of **standardized bilberry extract** and **French maritime pine bark extract** that supports eye health.
- In a human study, the combination reduced elevated eye pressure by up to **24%** and improved ocular blood flow.

## Summary

**Glaucoma**, usually driven by elevated eye pressure, can lead to vision loss and blindness.

A blend of standardized **bilberry** extract and **French maritime pine bark** extract can help reduce eye pressure levels and improve ocular blood flow in those at risk for glaucoma.

Taken alone or with medications, the extracts may help protect against glaucoma development and reduce vision loss in those already suffering from glaucoma. •

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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## Eye Support from Carotenoids

The bilberry-French maritime pine bark combination has shown benefits for elevated eye pressure and glaucoma.

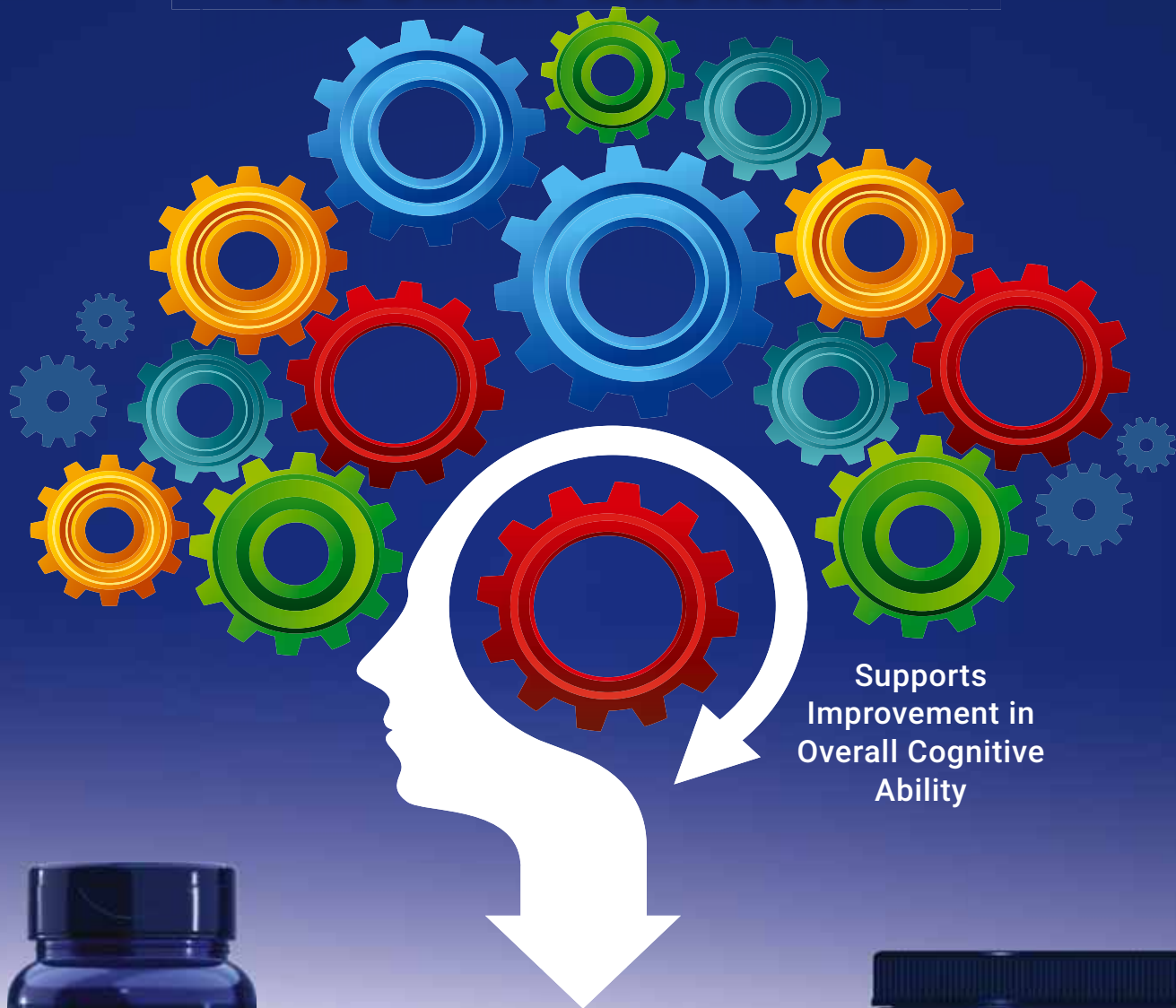
Oral intake of **carotenoids**, including **lutein** and **zeaxanthin**, have shown promise to reduce risk for *other* cataracts, age-related macular degeneration, and diabetic retinopathy.<sup>25</sup>

Taking carotenoids with bilberry and French maritime pine bark extracts may offer comprehensive protection against common eye disorders.



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**References:** 1. *Neuropharmacology*. 2016 2016/09/01/;108:426-39. 2. *Journal of Cellular Physiology*. 2016;231(9):1903-12. 3. *J Alzheimers Dis*. 2016;49(4):971-90.

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# Chamomile Tea

BY LAURIE MATHENA



It is estimated that people drink more than **one million cups** of chamomile tea per day.<sup>1</sup> Some drink it for its airy, floral taste. Others consume it for its variety of health benefits.

Chamomile is one of the oldest and most well-documented medicinal plants in the world.<sup>2</sup> Various preparations of chamomile have been traditionally used to treat ailments such as muscle spasms, wounds, rheumatic pain, gastrointestinal disorders, and more.<sup>2,3</sup>

Chamomile tea stands out for its effects on sleep<sup>3</sup> and on blood sugar control.<sup>2,4</sup>

In postnatal women experiencing poor sleep quality, those who drank chamomile tea for two weeks had significantly improved scores on sleep quality and on symptoms of depression, compared to the control group.<sup>5</sup>

Chamomile contains **50 flavonoids** as its active components, including quercetin, apigenin, and luteolin.<sup>3</sup> The flavonoids naringenin and apigenin have been associated with improved sleep quality.<sup>6,7</sup>

Chamomile tea also shows benefits for blood sugar control.<sup>8</sup>

In a single-blind, randomized, controlled clinical trial, 64 people with type II diabetes drank either water or a teaspoon and a half of chamomile tea three times per day (**3 grams/150 mL** hot water) immediately after meals for eight weeks.<sup>4</sup> Those drinking the chamomile tea experienced decreased concentrations of HbA1C, serum insulin levels, total cholesterol, triglycerides, and LDL, compared to the control group. Chamomile tea may play a role in a multi-modal strategy to reduce elevated blood sugar levels.

In an animal study, giving chamomile tea to diabetic rats reduced fasting blood glucose, after-meal blood sugar levels, and HbA1C. The improvement in HbA1c was similar to that of controls that received glibenclamide (a prescription medication for diabetes). The researchers concluded that drinking chamomile tea every day could be “potentially useful in hyperglycemia.”<sup>9</sup>

Many other studies in the lab and on animals have indicated that chamomile has wide-ranging effects, including anticancer activity<sup>2</sup> and preventing osteoporosis caused by steroid treatment.<sup>10</sup> ●

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This **salmon-flavored** soft chew supplement contains **omega-3**-rich fish oil for healthy coat and skin. This has been shown in clinical studies to help promote skin and coat health for dogs with sensitive skin<sup>6</sup> and to maintain a healthy coat.<sup>6-8</sup>



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# EYE

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Maximize the  
Effects of  
**VITAMIN C**







BY HEATHER L. MAKAR



Humans can't produce their own vitamin C, which is why it's important to get it daily from outside sources.<sup>1</sup>

But there's a problem: When people take large doses of vitamin C, most of it is **poorly absorbed** and quickly excreted.<sup>1,2</sup>

Scientists have found a solution.

To deliver more vitamin C to the body, researchers combined it with plant-based compounds that improve its absorption by nearly **seven times** compared to unformulated regular **vitamin C**.<sup>3</sup>

This formula also keeps vitamin C levels elevated for **far longer** than standard **vitamin C**, maximizing the amount our bodies can use.<sup>3</sup>

## A Health Enhancer

**Vitamin C** is a water-soluble nutrient with a variety of health benefits including:

- Supports **immune function** and promotes healthy immune responses,<sup>1,4,5</sup>
- Improves **cardiovascular health** and function,<sup>1,4,6</sup>
- Helps protect against viral and other **infections**,<sup>7-10</sup>
- Promotes **wound healing**,<sup>1,4,11</sup> and
- Reduces **oxidative stress**.<sup>1,4,12</sup>

Studies suggest that higher intake of vitamin C enhances immune function and may help reduce cardiovascular risk.<sup>4,6,13</sup>



Many people take high daily doses of standard vitamin C to try to get these benefits. However, there are diminishing returns when oral doses get above a certain level, as efficiency of absorption goes down as oral doses go up.

For instance, at doses over **1 gram** per day, less than **50%** is actually absorbed.<sup>1</sup> Even oral doses above **200-400 mg** lead to decreased absorption.<sup>2</sup>

This means that higher oral doses of unformulated vitamin C lead to only small increases in vitamin C levels in the body.

## Increased Bioavailability

Researchers have developed a delivery system that overcomes these problems, boosting the absorption and optimizing blood levels of vitamin C.<sup>3</sup>

There are two parts to this formulation:<sup>3</sup>

- First, vitamin C is encapsulated in **liposomes**, small structures made of **plant-derived phospholipids** (compounds that make up cell membranes). This encapsulation of vitamin C by liposomes improves the absorption of vitamin C into the bloodstream by nearly **seven times** over traditional vitamin C.
- To protect the liposomes, researchers used a second plant-derived compound, a **hydrogel** formed of indigestible fiber called **galactomannans**, derived from fenugreek seeds. This hydrogel surrounds and shields the liposomes, ensuring *sustained absorption* of the vitamin C released in the gut.

This **liposomal hydrogel vitamin C** has shown remarkable results in elevating vitamin C levels in the body.

With traditional vitamin C, blood levels peak about **one hour** after ingestion, then rapidly drop back to baseline levels.

With liposomal hydrogel vitamin C, blood levels continue to rise up to **four hours** after ingestion and reach a **higher peak**, indicating improved absorption and availability to tissues.

A single daily dose of liposomal hydrogel vitamin C leads to higher **around-the-clock** vitamin C levels in the blood.





WHAT  
YOU  
NEED  
TO  
KNOW



## Improved Vitamin C Bioavailability

- Vitamin C plays a critical role in supporting immunity, cardiovascular health, strong connective tissues, and more.
- Traditional vitamin C is poorly absorbed and metabolized quickly. When high doses of this form are taken, much of it is excreted unused.
- Encapsulating vitamin C in a liposomal hydrogel delivery system increases absorption by nearly seven times compared to standard vitamin C, keeping levels high all day long.

### Strong Immune Support

High circulating vitamin C in the blood can enhance health in several ways. One of the most notable is its support of **immunity**.<sup>4,14,15</sup>

Vitamin C unlocks functions in the immune system that cannot be activated without sufficient levels of this vitamin, such as controlling inflammation and protecting against cell-damaging oxidants.<sup>5,10</sup>

Some of the specific ways vitamin C promotes healthy immunity are by:

- Enhancing the ability of **neutrophils**, a first-responder immune defense, to reach the site of infection. In one study of participants with low levels of vitamin C, daily vitamin C intake increased neutrophil response by **20%**.<sup>16</sup>
- Promoting **lymphocyte** growth, maturation, survival, and antibody defense.<sup>17,18</sup> Lymphocytes are part of the innate immune system and include NK (natural killer) cells, B cells, and T cells.

- Supporting **collagen synthesis**. Protein collagen is an important structural part of the body's physical barriers against infection from bacteria, viruses, and other microbes. Vitamin C is *required* for collagen to correctly form in the body, even when taking oral collagen.<sup>5</sup>

These and other actions can help fight against **infections**.<sup>10</sup> For example, vitamin C intake has been shown in some studies to reduce the incidence, duration, and severity of **colds**.<sup>4,13-15</sup>

## Why Getting Enough Vitamin C Matters

Elevating and sustaining vitamin C levels in the body can offer additional health benefits, including:

- **Antioxidant Activity:** Vitamin C can help prevent or reduce oxidative damage, a major contributor to aging and age-related diseases.<sup>12</sup>
- **Wound Healing:** Vitamin C's role in the synthesis of collagen, which provides strength to connective tissues throughout the body, helps keep tissues in peak form and accelerates wound healing after injury.<sup>19-21</sup>
- **Cardiovascular Protection:** People with the highest blood levels of vitamin C are less likely to die from cardiovascular causes than those with the lowest levels.<sup>22</sup> In patients with heart failure, vitamin C intake improves the flow of blood through arteries.<sup>4</sup>

**Liposomal hydrogel vitamin C** can maximize the ability of vitamin C to deliver these and other benefits.

## Summary

**Vitamin C** supports a robust immune response and resilient cardiovascular health, and confers other benefits.

Traditional vitamin C is poorly absorbed and much of its common oral dosage is excreted unused.

Encapsulating vitamin C in a protective **liposomal hydrogel** delivery system increases its absorption by nearly **seven times** and keeps levels elevated around the clock. •



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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# CoQ10 + PQQ = ENERGIZED CELLS



GLUTEN  
FREE

1  
DAILY

NON  
GMO  
LE CERTIFIED

Item #01733 • 30 softgels

1 bottle \$33.75 • 4 bottles \$29 each

PrimaVie® is a registered trademark of Natreon, Inc. Q+®, Kaneka Ubiquinol™, and the quality seal™ are registered or pending trademarks of Kaneka Corp.

PQQ (pyrroloquinoline quinone) supports the growth of new mitochondria.

CoQ10 (coenzyme Q10) is essential for mitochondrial energy production.

Together, CoQ10 and PQQ help reenergize aging cells throughout the body.

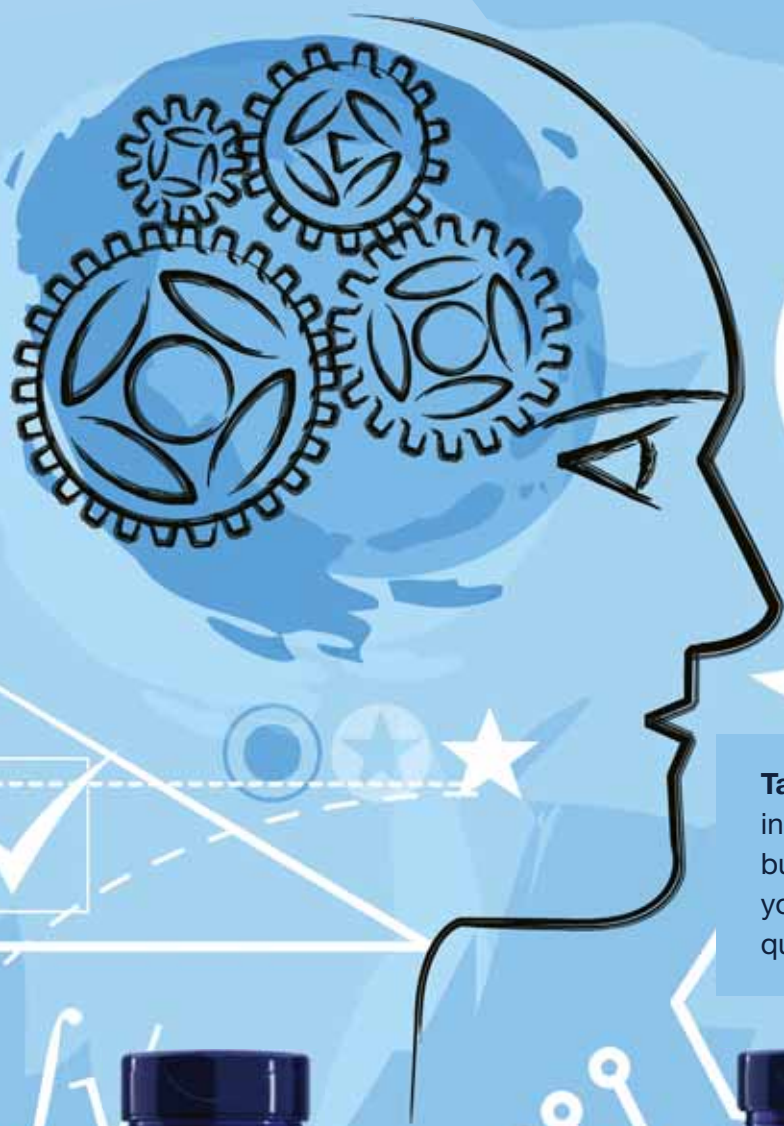
For full product description and to order **Super Ubiquinol CoQ10 with PQQ**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

# Keep Your Heart Healthy & Your Brain Sharp

"A little extra help for our stressed hearts these days."

**Diana**

VERIFIED CUSTOMER REVIEW



**Taurine** is one of the most abundant amino acids in your body, with a range of anti-aging benefits, but levels decline over time. Be proactive and give your heart and brain powerful support with high-quality Taurine from **Life Extension!**



**Item #01827** 1000 mg  
90 vegetarian capsules  
1 bottle **\$9.75**  
4 bottles \$9 each



**Item #00133**  
300 grams  
1 bottle **\$15**  
4 bottles \$12.66 each



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

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





“One of my main daily ‘go to’ supplements.”  
**LeW**  
VERIFIED CUSTOMER REVIEW

# Get MORE Vitamin D

For a strong immune system, bones and heart, you need the sunshine vitamin. Most people don't get enough from their diet or time outdoors.

Good thing there's Life Extension® Vitamin D3.

For full product description and to order **Vitamin D3**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)



Item #01713  
125 mcg (5000 IU)  
60 softgels  
1 bottle \$7.50  

---

4 bottles \$6.50 each

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



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





“Great product!”  
**Marcia**  
VERIFIED CUSTOMER  
REVIEW

# Swimming in Green Tea

## There’s a lot of goodness to green tea.

It supports brain, heart, and cellular health... and promotes optimal metabolism.\* But, you’d have to drink several cups a day to get the benefits of our **Mega Green Tea Extract**.

Each capsule provides **725 mg** of green tea extract, standardized to **98%** polyphenols—making it the perfect choice when you don’t have enough time for tea time.

For full product description and to order **Mega Green Tea Extract**, call **1-800-544-4440** or visit [www.LifeExtension.com](http://www.LifeExtension.com)

\* *Biomed Pharmacother.* 2016(3);78:50-9.



**Item #00953 • 100 vegetarian capsules**  
1 bottle **\$22.50** | 4 bottles \$18 each



**Item #00954 • 100 vegetarian capsules**  
1 bottle **\$22.50** | 4 bottles \$18 each





Liposomal-Hydrogel™



VITAMIN

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

Mary

VERIFIED CUSTOMER REVIEW



Item #02501 • 60 vegetarian tablets

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

For full product description and to order **Vitamin C 24-Hour Liposomal Hydrogel™ Formula**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

Buffered **ascorbate** encased in two plant extracts (liposomes plus hydrogel fenu-greek) increases blood (plasma) exposure nearly **seven times more** compared to an equivalent dose of regular vitamin C.

It also maintains vitamin C levels throughout the day.<sup>1</sup>

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

1. Akay Internal Study. Liposomal hydrogel vitamin C pharmacokinetics. Data on file. 2021.

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

**ACTIVE LIFESTYLE & FITNESS**

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- 02020 Super Carnosine
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- 02518 Wellness Bar - Peanut Butter Chocolate Chip
- 02246C Wellness Code® Advanced Whey Protein Isolate Vanilla
- 02221 Wellness Code® Muscle Strength & Restore Formula
- 02127 Wellness Code® Plant Protein Complete & Amino Acid Complex
- 02261C Wellness Code® Whey Protein Concentrate Chocolate
- 02260 Wellness Code® Whey Protein Concentrate Vanilla
- 02243C Wellness Code® Whey Protein Isolate Chocolate
- 02242 Wellness Code® Whey Protein Isolate Vanilla

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

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- 56885 Natto Activ Cardiovascular & Respiratory Support
- 02320 NitroVasc™ Boost
- 01953 Pomegranate Complete
- 00956 Pomegranate Fruit Extract
- 02024 Triple Action Blood Pressure AM/PM
- 02102 VenoFlow™

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- 02416 Bone Restore Elite with Super Potent K2
- 01727 Bone Restore Calcium Supplement w/ Vitamin K2
- 01725 Bone Strength Collagen Formula
- 01963 Calcium Citrate with Vitamin D
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- 02417 Mega Vitamin K2
- 01476 Strontium Caps

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- 01974 Acetyl-L-Carnitine Arginate
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- 02510 Brain Fog Relief
- 01659 CDP Choline
- 02321 Cognitex® Alpha GPC
- 02396 Cognitex® Elite
- 02397 Cognitex® Elite Pregnenolone

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

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- 02021 Enhanced Super Digestive Enzymes
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- 01473 D-Ribose Tablets
- 01900 Energy Renew
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- 01805 Ginseng Energy Boost
- 01869 Mitochondrial Basics with PQQ
- 01868 Mitochondrial Energy Optimizer with PQQ
- 01904 NAD+ Cell Regenerator™ • 100 mg, 30 veg capsules
- 02344 NAD+ Cell Regenerator™ 300 mg, 30 veg capsules
- 02348 NAD+ Cell Regenerator™ and Resveratrol Elite™
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- 01647 PQQ Caps • 20 mg, 30 vegetarian capsules
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- 02003 Thyroid Support Complex

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- 01985 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 60 enteric coated softgels
- 01984 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract • 120 enteric coated softgels
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- 01309 Optimized Quercetin
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- 01541 Glutathione, Cysteine & C
- 01393 HepatoPro
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- 01884 Silymarin
- 02361 SOD Booster

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- 01438 Blueberry Extract and Pomegranate
- 02270 DNA Protection Formula
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- 02119 GEROPROTECT® Ageless Cell™
- 02415 GEROPROTECT® Autophagy Renew
- 02401 GEROPROTECT® Stem Cell
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- 01513 Optimized Fucoidan with Maritech® 926
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- 02500 Testosterone Elite
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- 02300 Circadian Sleep
- 01511 Enhanced Sleep without Melatonin
- 02234 Fast-Acting Liquid Melatonin
- 01669 Glycine
- 02308 Herbal Sleep PM
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- 01668 Melatonin • 300 mcg, 100 veg capsules
- 01083 Melatonin • 500 mcg, 200 veg capsules
- 00329 Melatonin • 1 mg, 60 capsules
- 00330 Melatonin • 3 mg, 60 veg capsules
- 00331 Melatonin • 10 mg, 60 veg capsules
- 00332 Melatonin • 3 mg, 60 veg lozenges
- 02201 Melatonin IR/XR
- 01787 Melatonin 6 Hour Timed Release  
300 mcg, 100 veg tablets
- 01788 Melatonin 6 Hour Timed Release  
750 mcg, 60 veg tablets
- 01786 Melatonin 6 Hour Timed Release  
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- 01721 Optimized Tryptophan Plus
- 01445 Quiet Sleep Melatonin • 5 mg, 60 veg capsules
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- 02526 Serene Sleep

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- 01945 BioActive Complete B-Complex
- 00102 Biotin

- 00084 Buffered Vitamin C Powder
- 02229 Fast-C® and Bio-Quercetin®
- 02075 Gamma E Mixed Tocopherol Enhanced with  
Sesame Lignans
- 02070 Gamma E Mixed Tocopherol & Tocotrienols
- 01913 High Potency Optimized Folate
- 01674 Inositol Caps
- 02244 Liquid Vitamin D3 • 50 mcg (2000 IU)
- 02232 Liquid Vitamin D3 (Mint) • 50 mcg (2000 IU)
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- 00373 No Flush Niacin
- 01939 Optimized Folate (L-Methylfolate)
- 01217 Pyridoxal 5'-Phosphate Caps
- 01400 Super Absorbable Tocotrienols
- 02334 Super K
- 01863 Super Vitamin E
- 02422 Vegan Vitamin D3
- 02028 Vitamin B5 (Pantothenic Acid)
- 01535 Vitamin B6
- 00361 Vitamin B12 Methylcobalamin
- 01536 Vitamin B12 Methylcobalamin  
1 mg, 60 veg lozenges
- 01537 Vitamin B12 Methylcobalamin  
5 mg, 60 veg lozenges
- 02228 Vitamin C and Bio-Quercetin®  
60 veg tablets
- 02227 Vitamin C and Bio-Quercetin®  
250 veg tablets
- 01753 Vitamin D3 • 25 mcg (1000 IU), 90 softgels
- 01751 Vitamin D3 • 25 mcg (1000 IU), 250 softgels
- 01713 Vitamin D3 • 125 mcg (5000 IU), 60 softgels
- 01718 Vitamin D3 • 175 mcg (7000 IU), 60 softgels
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- 02040 Vitamins D and K with Sea-Iodine™

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100 mg, 60 veg capsules
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- 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

# A Therapeutic Foot Massage with Every Step

Wearing Kenkohs daily, even for short periods of time, Kenkoh helps to increase circulation while providing a non-intrusive way of reducing pain in the feet, ankles, knees, legs, hips and back.

The precisely designed footbeds of a Kenkoh Massage Sandal work by using acupressure to revitalize and stimulate the nerve endings in your feet.



Spirit V  
Silver Metallic



Chai V Champagne

- Relieves stress, eases fatigue, eliminates toxins, and improves circulation.
- Over 1,000 rubber nodules on the footbed provides a relaxing foot massage while you walk.
- Fully contoured footbed that supports all three arches, allowing pressure to be spread evenly over the foot.

Take the

**14  
DAY**

Kenkoh Challenge

HappyFeet.com/KENKOH  
1-800-336-6657

**Kenkoh**<sup>®</sup>  
Japanese Massage Footwear



Low-Cost  
Biologically  
Active

# B COMPLEX

## Enzymatically Active Vitamins

BioActive Complete B-Complex provides *enzymatically active forms* of meaningful potencies of each B vitamin.

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

Item #01945 • 60 vegetarian capsules

1 bottle \$9 • 4 bottles \$8 each



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

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

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

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



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When combined with specific plant compounds, **vitamin C** absorption is improved along with its sustainability in the **bloodstream**.