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FEATURE ARTICLES

- 7 Longevity Disparities in Britain
- 22 Reduce Your Waist Circumference
- 30 Cellular AMPK Fights Cancer
- 38 Problem with Sleeping Pills
- 47 Diminish After-Meal Bloating
- 52 Nutrients that Impact Immunity

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PLUS: Page 7
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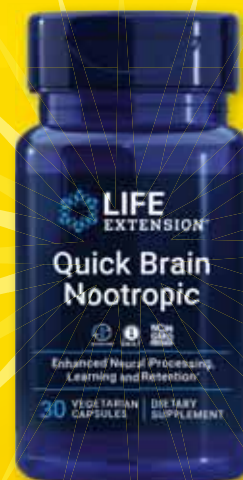
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REPORTS



ON THE COVER

Page 22

Citrus Extract Reduces Body Fat

In human trials, a new **moro orange** extract **decreased** waist circumference up to **2.79 inches**.

30 CANCER-INHIBITING EFFECTS OF GYNOSTEMMA

Anti-cancer compounds have been identified in an Asian vine called *Gynostemma pentaphyllum*. Clinical trials are needed to see if this plant impedes cancer in **humans**.



38 THE PROBLEM WITH SLEEP-AID DRUGS

Just a single dose of common sleeping pills such as Xanax® or Valium® can suppress production of **melatonin** and create other health issues.



47 BLOATED? GET RELIEF

Four plant compounds have been shown to relieve **after-meal bloating** and other GI disturbances.



52 NUTRIENTS THAT IMPACT IMMUNITY

Immune health can be improved with nutrients that function via multiple pathways.



DEPARTMENTS

7 HUGE DISPARITIES IN HEALTHY LONGEVITY

Studies in Britain and the U.S. reveal huge disparities in **healthy longevity** based on socioeconomic factors and behavioral patterns.

15 IN THE NEWS

Resveratrol lowers glucose levels in type II diabetics; vitamin E improves multiple factors in leukoaraiosis patients; branched chain amino acids boost physical function after stroke; carotenoids associated with reduced dementia risk.

63 WHAT IS CHLOROPHYLLIN?

Chlorophyllin helps detoxify deadly chemicals that enter the body, while offering protection for cellular DNA.

71 HEALTHY EATING

The book *Cook for Your Gut Health* provides 60 recipes designed to encourage a healthy microbiome and help prevent chronic GI inflammation. We highlight three flavorful recipes.





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Life Extension • 3600 West Commercial Blvd., Ft. Lauderdale, FL 33309
Editorial offices: 954-766-8433 • fax: 954-491-5306

Customer Service: 800-678-8989 • Email: customerservice@LifeExtension.com

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Letters to the Editor, PO Box 407198, Fort Lauderdale, FL 33340
or email us: LEmagazine@LifeExtension.com

LIFE EXTENSION (ISSN 1524-198X) Vol. 28, No. 10 ©2022 is published monthly except bi-monthly in April by LE Publications, Inc. at 3600 West Commercial Blvd., Fort Lauderdale, FL 33309-3338. LE Publications, Inc. All rights reserved. Published 13 times a year. Subscription rate: \$40 per year in the United States. US \$47 in Canada. US \$60 in other countries. Mail subscriptions or address changes to: LE Publications, Inc., P.O. Box 407198, Fort Lauderdale, FL 33340-7198, USA. Or phone us toll-free at: 1-800-841-5433. Canada Subscriptions: Publications mail agreement number 40028967. Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill, ON L4B4R6. You will be sent your first issue within six weeks after LE Publications, Inc. receives your subscription fee. Periodicals Postage paid at Fort Lauderdale, FL and at additional mailing offices. POSTMASTER: Send address changes to Life Extension, P.O. Box 407198, Ft. Lauderdale, Florida 33340-7198, USA. Printed in USA. The articles in this magazine are intended for informational purposes only. They are not intended to replace the attention or advice of a physician or other health-care professional. Anyone who wishes to embark on any dietary, drug, exercise, or other lifestyle change intended to prevent or treat a specific disease or condition should first consult with and seek clearance from a qualified health-care professional. LEGAL NOTICE: Health claims contained in articles and advertisements in this publication have not been approved by the FDA with the exception of FDA-approved, qualified health claims for calcium, antioxidant vitamins, folic acid and EPA and DHA omega-3 fatty acids, and selenium as noted where applicable. *Life Extension Magazine®* does not endorse any of the businesses or the products and/or services that may appear in advertisements for non-Life Extension branded products or services contained in it, except to state that they are advertisers who may have paid Life Extension for placement of an advertisement in this publication. Life Extension disclaims any and all responsibilities or warranties as to the accuracy of information contained in advertisements for non-Life Extension branded products or services. For Canadian customers send change of address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7.



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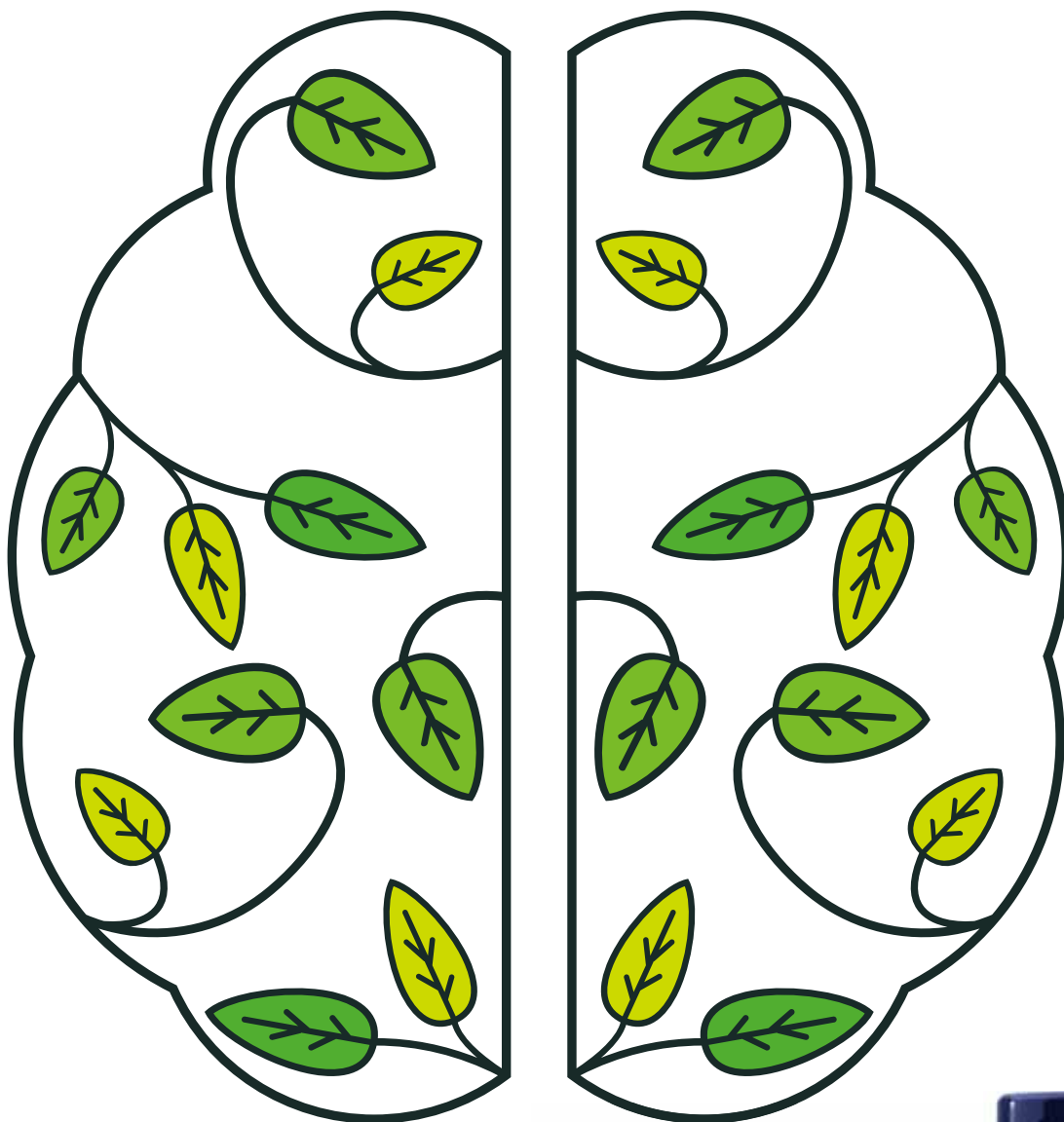


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Huge Disparities in Healthy Longevity



WILLIAM FALOON

The British government collects **medical data** on its citizens better than most other countries.

In **March 2021**, the **Office of National Statistics** published a report showing that British men in the **upper** economic category live in **good health** an astounding **19 more years** than men in the **lowest** group.¹

Women in this upper category enjoy **19.3 more** years in **good health**.

Overall life expectancy for men in the upper economic class is **9.4 years longer** compared to the lowest category.

This is not the first report showing improvements in **healthy longevity** in those who take steps to **reduce** their **disease risks**.

Reasons for **more healthy life years** in better-educated British citizens include less tobacco use, more nutritious diets, and access to private health care.^{2,3}

Another data set finds those in the lower socioeconomic category have **high** relative incidences of premature deaths from coronary **heart** disease.⁴

This premature clogging of arteries can be attributed to excessive amounts of fried foods and saturated fat in the diet, not enough fruits and vegetables, spiraling obesity rates, and tobacco use.⁴⁻⁶

These losses of **healthy life years** are not always attributable to socioeconomic status. A large swath of the general public engages in risky behaviors that threaten to ignite a new epidemic of **cardiovascular disorders**.

A study published by **JAMA** in April 2022 found mortality to be **169% higher** after age 65 in Americans having **no** financial assets compared to those with at least \$300,000 (in 1995 dollars).⁷

Additional financial assets beyond \$500,000 were **not** associated with **lower mortality**, implying that great wealth is not required to enjoy more healthy life years.

This editorial explores **healthy longevity** practices that are relevant worldwide, including the **United States**.



Disparity Among British Citizens

Studies of human population groups have long uncovered **disparities** in **healthy longevity** that are not attributed to race or geographic location.

A report issued in **March 2021** by the British Office of National Statistics highlights the wide disparities as follows:¹

- Males living in the most deprived areas of England can expect to live **19 years less** in “good” health compared with those in the least deprived.
- The healthy longevity gap for females in the most deprived areas of Britain is **19.3 years**.

The authors of this report point out that the **life expectancy** variation at birth is worsening across England.

Women in the most deprived areas of England experienced a decline in life expectancy at birth, while women in the least deprived areas had an increase in life expectancy at birth.

Those living in the most economically deprived areas spend almost **two decades less** in **good health** than their counterparts in the least deprived areas.

And these **disparities** occur in a country (United Kingdom) that provides free **universal health care**.

The encouraging news is that many of these lost healthy life years can be recovered in all socioeconomic classes.

Health Disparities in the United States

A study published in the May 27, 2020 issue of *JAMA Cardiology* looked at **heart disease** variations among socioeconomic classes in the United States.⁸

Individuals residing in low socioeconomic-status areas had twice the incidence of **coronary artery blockage** and **heart attacks** compared with **higher** socioeconomic areas.

Even after accounting for traditional risk factors such as **tobacco** use, **body weight**, **LDL**, **blood pressure**, and **type II diabetes**, those residing in low socioeconomic areas still had an elevated risk of *early* coronary heart disease.

Interestingly, just **40%** of heart disease events in the low socioeconomic group were attributable to the traditional risk factors mentioned in the above paragraph.

This leaves **60%** of coronary disease incidences “**attributable to other factors associated with low socioeconomic status.**”

The authors of this *JAMA Cardiology* study suggest that increased stress, less access to nutritious foods, and inadequate medical care are among the reasons for the high rate of coronary artery disease in low socioeconomic groups. The authors also point out **healthier lifestyle** choices practiced in *higher* socioeconomic status groups that reduce cardiovascular risks.

I partially concur with these assumptions but am concerned about other risk factors that are neglected by individuals in all socioeconomic classes.



These risk factors include **overconsumption of sugars**, excess **calorie intake**, and **health negligence** that is prevalent in modern societies...including by some readers of *Life Extension® Magazine*.

Rising Obesity Prevalence

Excess **body fat** leads to the development of diabetes, heart disease, liver failure, osteoarthritis, and certain cancers.⁹

England has some of the **worst** upticks in **obesity prevalence** compared with the rest of **Europe**.

A **2017** review article stated that **obesity trends** in most **European** countries increased by **10%-40%** over a **10-year period**.⁹

During this same period, **obesity prevalence** in England more than **doubled** (over **100%** higher).⁹

According to a **2021** study, more deaths in England and Scotland since 2014 may be due to **excess body weight** than are caused by **cigarette smoking**.¹⁰

Smoking trends in England have declined in recent decades while **obesity** prevalence has sharply increased.¹⁰

A similar situation has occurred in the **United States**.

Worsening Trends in Scotland

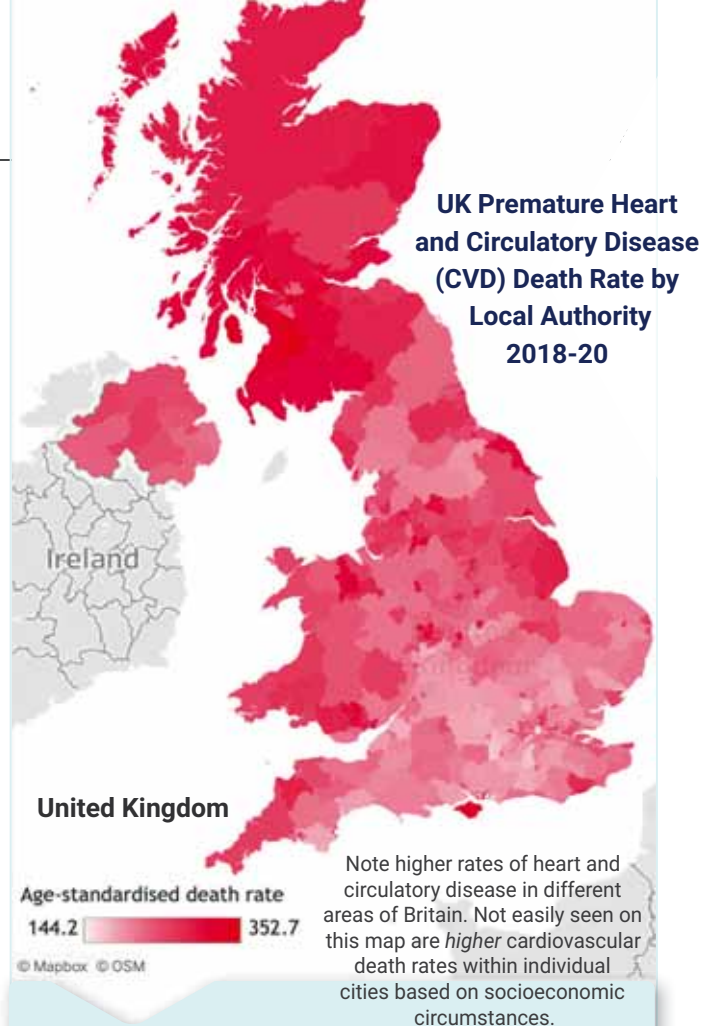
The *British Medical Journal* (2014) reported a **43%** decline in coronary disease death rates from **2000** to **2010** in Scotland.¹³

This decrease occurred because of improved prevention and treatment and was evenly consistent across socioeconomic classes.

The authors then point out that rising rates of **obesity** and **type II diabetes** are offsetting some of these benefits, and that **diabetes** prevalence worsened in the lowest socioeconomic classes.

Move forward to a report published by the *British Heart Foundation* in **January 2022**. Cardiovascular deaths are more than three-times **higher** for people (under age 75) in Glasgow City, Scotland, than in other areas of England.¹⁴

The map copied on this page shows areas of Britain that have **higher** cardiovascular death rates. What it does not reveal are the wide disparities that exist within cities like Glasgow, where those in lower socioeconomic classes suffer more cardiovascular events at younger ages.



Heart Failure Cases Soar Globally

A study published in **February 2021** by the **European Society of Cardiology** looked at 195 countries and found the number of people with **heart failure** nearly doubled between **1990** and **2017**.¹¹

The authors of this study said the rising prevalence of **heart failure** in the low, low-middle, and middle socioeconomic demographic-index countries "*is driven by a surge of risk factors such as hypertension, diabetes mellitus, obesity, smoking, and other unhealthy lifestyles.*"

Sudden death from **heart failure** plummeted by **44%** from **1995-2014** in the United States.¹²

Increasing obesity prevalence is causing hard-fought reductions in **cardiovascular disorders** to go in reverse.

Dietary Supplement Use in Britain

Unlike other countries that restrict **dietary supplements**, Britain has long permitted the sale of high-potency nutrients without costly registration requirements.

This policy provides British citizens access to supplements that Americans have long enjoyed.

The problem is supplements in Britain are more **expensive** and subject to an additional value-added tax.

Access to supplements can benefit echelons of British society that can afford them but is of little help to lower classes that cannot even afford fresh **fruits** and **vegetables**.

The British government is recognizing this dilemma.

In **2021**, all British citizens were offered free **vitamin D** supplements.

Regrettably, each capsule of these “free supplements” contains only **10 mcg (400 IU)** of **vitamin D**. This dose is woefully inadequate compared to the **5,000 IU** to **8,000 IU** of vitamin D many people need to achieve **optimal** blood levels.

Unhealthy Behavior Across All Economic Classes

In presentations I give about emerging rejuvenation therapies, I remind the group to not forget the **fundamentals** of healthy **longevity**.

Some of our supporters engage in aggressive experimental regeneration efforts but neglect the basics of **disease prevention** (such as optimizing **blood pressure**).

The slide at the bottom of this page outlines some of the reasons why low socioeconomic British citizens have **19 fewer years of good health**.

Yet many of us who can avoid these unhealthy behaviors nonetheless engage in too many of them. The penalty I’ve observed is **vascular disorders** that were largely **preventable**.

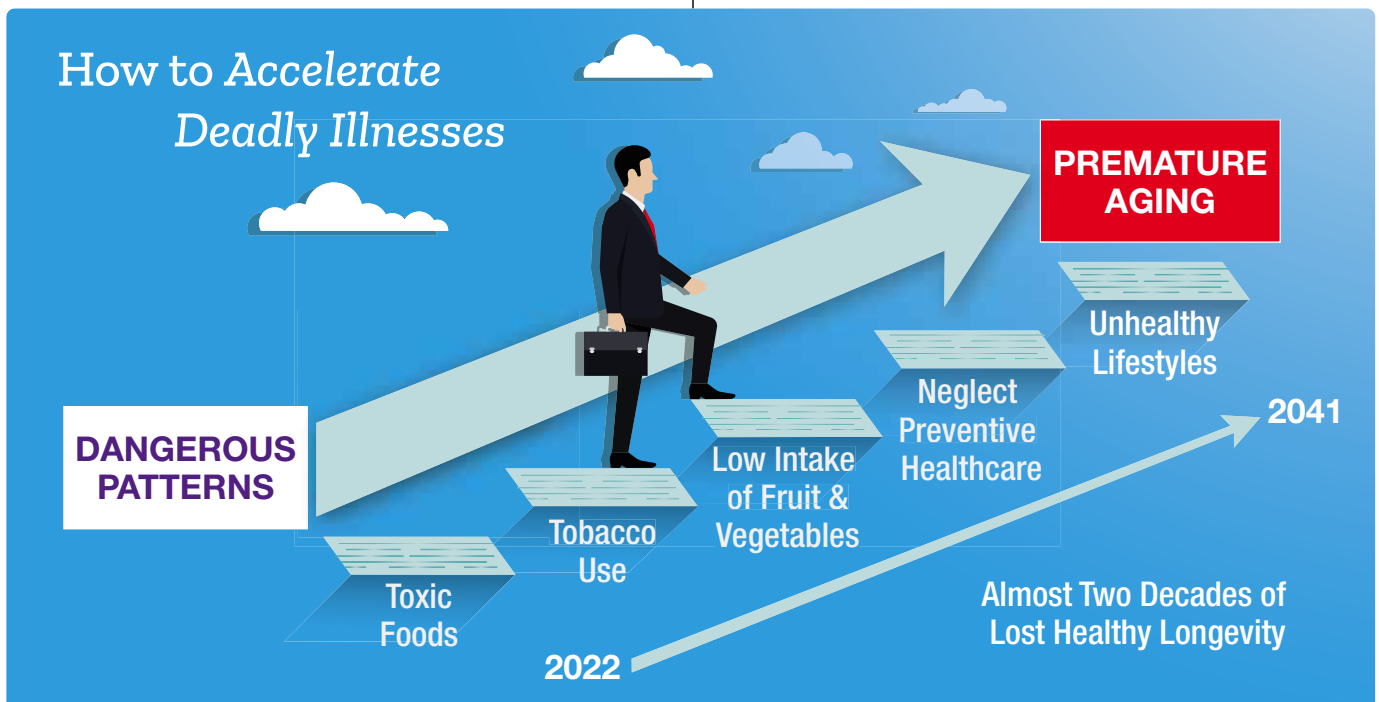
Smokers spend about **\$3,000** each year on cigarettes, plus pay *higher* medical/life insurance premiums, plus lose work productivity from illnesses.

When smokers complain they cannot afford fresh fruits and vegetables, the easier-said-than-done solution is obvious, i.e., discontinue the tobacco use.

JAMA Study Corroborates British Findings

On **April 8, 2022**, the *Journal of the American Medical Association* (JAMA) published findings from a study that evaluated mortality over an 18-year period that found:⁷

- After age 65, **mortality** in those with no assets was **2.69-times higher** (hazard ratio) relative to those with at least \$300,000 of assets (in 1995 dollars).



- Based on this, those with no assets have only a **40%** estimated probability of surviving from age **65** to age **85**, while **71%** of those in the \$300,000 asset category survived from age **65** to **85**.
- Additional wealth greater than \$500,000 was not associated with lower mortality.
- As it related to **tobacco** use, after adjustment for confounding variables, the estimated probability of surviving from age **65** to age **85** was only **33%** for current **smokers** compared to **70%** for those who never smoked. Said differently, this study found that smoking is associated with sharply *higher* mortality **independent** of one's socioeconomic status.

My observations over the past 45 years are that higher net worth individuals do not always take care of themselves better than those with relatively few resources.

The slide on the previous page titled, “How to Accelerate Deadly Illnesses,” shows how to shorten healthy longevity no matter what financial class you fit into.

Stop Premature Aging!

As I turn age **68**, a significant number of my highly educated friends (attorneys and CPAs my age) suffer from chronic illness or have died from preventable causes.

Despite their high incomes, many failed to engage in the basics of **preventative medicine**.

The data sets presented in this article should motivate more readers to improve their behavioral patterns so they can enjoy more years in **great health**.

For longer life,



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



References

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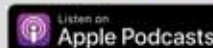
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In the News



Resveratrol Supplementation Improves Glucose Regulation in Type II Diabetics

Supplementing with resveratrol showed positive effects in the regulation of glucose and the maintenance of healthy levels of inflammation and oxidative stress in type II diabetics, according to an article in *Complementary Therapies in Medicine*.*

The participants who completed the trial were being treated with drugs for type II diabetes. One group received **200 mg** of resveratrol daily for 24 weeks and another was given a placebo.

The resveratrol recipients had reductions in glucose and insulin, as well as reduced insulin resistance, compared to the beginning of the trial and to the placebo group.

Editor's Note: The authors concluded that, "Supplementation of resveratrol along with oral hypoglycemic agents may be useful in the reduction of diabetic-associated complications."

* *Complement Ther Med*. 2022 Mar 1;66: 102819.

Vitamin E Helps People with Leukoaraiosis, a Brain Condition

A study published in the *International Journal of Neuroscience* found improvements in factors related to leukoaraiosis, an abnormality in the brain's white matter, among adults given supplements containing vitamin E.*

The study included 160 men and women diagnosed with leukoaraiosis by MRI who had undergone testing for cognitive function. Participants received either **200 IU**, **400 IU** or **600 IU** of vitamin E or a placebo daily for 12 weeks. At the end of the treatment period, blood samples were evaluated for inflammatory factors as well as for markers of oxidative stress and endothelial function.

Inflammation, oxidative stress, and endothelial function improved in all individuals in vitamin E-treated groups compared with the placebo. Cognitive function scores also significantly improved in the vitamin E-treated groups. Improvement in all measured factors was correlated with higher doses of vitamin E.

Editor's Note: "Vitamin E could be a potential drug for the clinical treatment of leukoaraiosis patients," the authors concluded.

* *Int J Neurosci.* 2022 Jun 2;1-9.





Branched Chain Amino Acid Supplements Raise Level of Physical Function in Stroke Patients

Stroke patients who supplemented with branched chain amino acids (BCAAs) showed improvement in muscle and functional status compared to those who did not, the journal *Frontiers in Neurology* reported.*

The study included 54 patients who had recently suffered a stroke and were receiving intensive therapy at a rehabilitation center. Most had muscle tissue loss. Half of the participants received a supplement that contained **6 grams** of a blend of the branched chain amino acids leucine, isoleucine, and valine, twice per day for four weeks.

Among those who received BCAAs, handgrip strength and skeletal muscle mass *improved* after treatment, while in the control group, muscle mass *decreased*.

In the BCAA group, **46%** of the individuals regained the ability to walk by the study's conclusion, compared to **37%** in the placebo group.

Editor's Note: Both groups experienced improvement in physical function such as balance, gait, and swallowing, but the group that received BCAAs improved to a *greater* extent.

* *Front Neurol.* 2022 Mar 11;13:744945.

People with Higher Carotenoid Levels Have Lower Dementia Risk

An article published in *Neurology*[®], the medical journal of the American Academy of Neurology, reported an association between higher levels of several carotenoids and a lower risk of developing Alzheimer’s disease and other dementias during an average follow-up period of 16 to 17 years.*

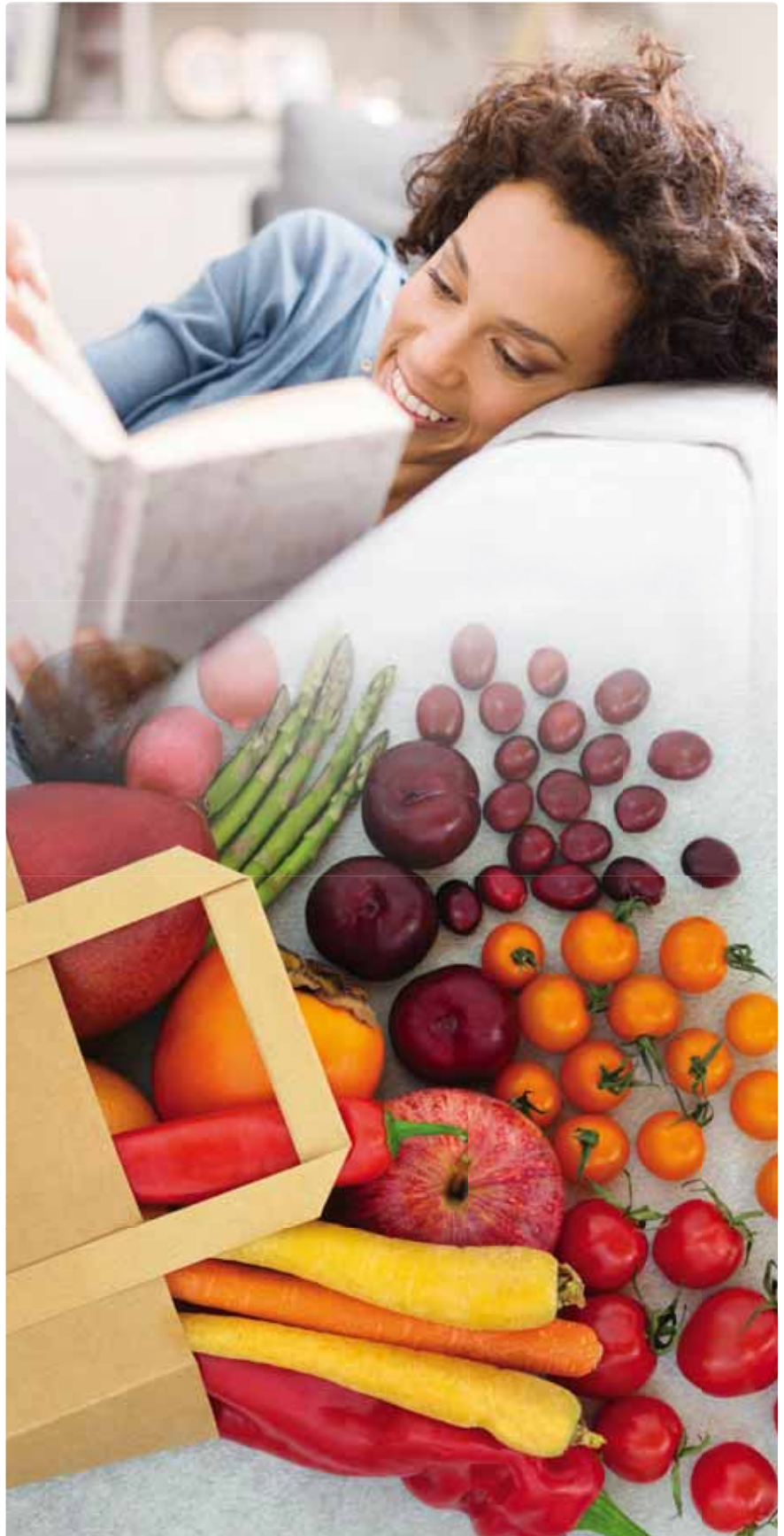
Carotenoids are a family of yellow to red plant pigments, including beta-carotene, which have an antioxidant effect.

Researchers examined data from 7,283 men and women who were aged 45 years and older upon enrollment in the third National Health and Nutrition Examination Surveys 1988-1994. Participants’ serum levels of antioxidant vitamins A, C and E, and the carotenoids were determined from blood samples collected at the beginning of the study.

Among those aged 65 and older at enrollment, each approximate **15.4 micromols/liter** increase in lutein and zeaxanthin was associated with a **7% decrease** in dementia risk during follow-up. For beta-cryptoxanthin, each **8.6 micromols/liter** increase was associated with a **14%** reduction among those older than 45 at the beginning of the study.

Editor’s Note: “Antioxidants may help protect the brain from oxidative stress, which can cause cell damage,” stated study author May A. Beydoun, PhD, MPH, of the National Institutes of Health’s National Institute on Aging.

* *Neurology*. 2022 May 24;98(21):e2150-e2162.



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

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

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Shed Belly Fat— THE MEDITERRANEAN WAY





BY MICHAEL DOWNEY

Prescription drugs that enable massive **weight loss** made headline news this year.¹

Yet people seeking modest **weight loss** often turn to **plant-based** alternatives that are backed by **human** research.

In a **placebo**-controlled study, both groups were asked to continue their existing diet and exercise habits.

The group ingesting a new **fruit extract** lost more total body weight than the placebo arm.²

The **fruit extract** group also reduced waist circumference by **2.8 inches**.²

This article describes research supporting the use of this **fruit** that originated in the Mediterranean.

Dangers of Abdominal Fat

More than **70%** of U.S. adults are **overweight** or **obese**.³

But not all body fat is the same. Certain types, such as **abdominal fat**, pose the greatest threat.

Excess body weight around the abdomen, or abdominal obesity, keeps our bodies in an **inflammatory** state that has been associated with increased risk of metabolic abnormalities.⁴

A review paper published in the *Archives of Medical Science* concluded that:⁴

“Sustained inflammation is considered a strong risk factor for developing many diseases including CVDs [cardiovascular diseases], metabolic syndrome, diabetes, and cancer.”

Readers of this publication have been educated for decades about the dangers of chronic **inflammation** and strategies to combat it.

The “Moro Orange”

Searching for a way to promote healthy **weight loss**, scientists have investigated compounds known as **anthocyanins**.

Evidence from preclinical studies suggests that diets enriched in **anthocyanins** can improve glucose tolerance and **insulin sensitivity**.⁵

Anthocyanins are pigments found in red, blue, and purple color **fruits** and in the “**moro orange**.”⁵

The **moro orange** fruit is believed to have originated at the beginning of the 19th century in Sicily, as a result of a natural bud interaction with another orange type.⁵

Anthocyanins from **moro oranges** have been shown to help decrease **weight** and **adipose tissue** (fat) by regulating metabolism of fatty acids.⁷



One study showed that when healthy, overweight adults supplemented with a **moro orange** juice **extract** rich in **anthocyanins** it resulted in significant reductions in **body mass index** (BMI) compared with taking a placebo.³



Beneficial Compounds in Moro Orange

Scientists have concluded that the **anti-obesity** effect of **moro orange** juice in animal studies is so significant, it *cannot be explained by anthocyanin content alone*.

Moro orange contains other health-promoting compounds, including:⁶

- Flavonoids
- Carotenoids
- Hydroxycinnamic acids

These and other **moro orange** components may work **together** to inhibit **fat storage**.⁶

Research on mice demonstrated that intake of **moro orange juice**:⁸

- **Reduced fat accumulation** by about **50%**,
- **Decreased adipocyte size**, and
- **Regulated gene expression** of adipose tissue (modulated gene expression changes caused by a high-fat diet).



WHAT
YOU
NEED
TO
KNOW

Weight-Loss Benefits of Moro Orange

- Clinical studies show that **moro orange extract** can reduce weight by an average of **4.2%** and decrease dangerous **belly fat**, when combined with exercise and a reduced-calorie diet.
- Moro orange is high in **anthocyanins**, which some data have linked to weight loss, along with an array of other beneficial compounds.

Weight Loss in Humans

Scientists set out to assess **moro orange's** potential for weight loss in **humans**.

In a clinical study, researchers instructed 60 overweight individuals to take **400 mg of moro orange juice extract** once daily. They were also asked to continue with their existing diet and exercise habits.²

Compared to **placebo**, those who took the **moro orange extract** for **12 weeks** reduced their:

- **Weight** by **4%** (vs. **0.5%** with placebo),
- **BMI** by **1.11 kg/m²** (vs. **0.15 kg/m²** with placebo),
- **Waist circumference** by **2.79 inches** (vs. **0.31 inches** with placebo), and
- **Hip circumference** by **2.35 inches** (vs. **0.27 inches** with placebo).

Losing Weight and Fat

For greater validation, a clinical trial was designed that involved 136 overweight but healthy **humans**, followed for a longer period of **six months**.⁹

This time, the volunteers were asked to consume **500 fewer calories** daily and walk for **30 minutes**, three times a week.

Those who took **400 mg of moro orange extract** once daily, on average reduced:⁹

- **Weight** by **4.2%** (vs. **2.2%** with placebo),
- **BMI** by **1.2 kg/m²** (vs. **0.6 kg/m²** with placebo),
- **Waist circumference** by **1.5 inches** (vs. **0.7 inches** with placebo),
- **Fat mass** by **7.5%** (vs. **5.7%** with placebo),
- **Abdominal fat mass** by **11.3%** (vs. **6.1%** with placebo),
- **Visceral fat mass** (between abdominal organs) by **12.4%** (vs. **9.0%** with placebo), and
- **Subcutaneous fat mass** (just under the skin) by **9.4%** (vs. **6.4%** with placebo).

Overall, **36%** of those in the **moro orange** group had a **weight loss** of *more than 5%*, compared to **22.5%** of the **placebo** group.⁹

To put the waist-size reduction of **1.5 inches** into perspective, the notches on a belt are usually about one inch apart, making this a reduction of *well more than one belt notch*.

Evidence is clear that **moro orange extract** can be a vital part of a healthy weight-loss program.

Summary

The **moro orange** has been found to help reduce weight and dangerous **abdominal fat**.

It is high in anthocyanins and other compounds that may work together to promote weight loss.

Human studies found that **moro orange extract** safely reduced **waist circumference** by **1.5 to 2.79 inches**. •

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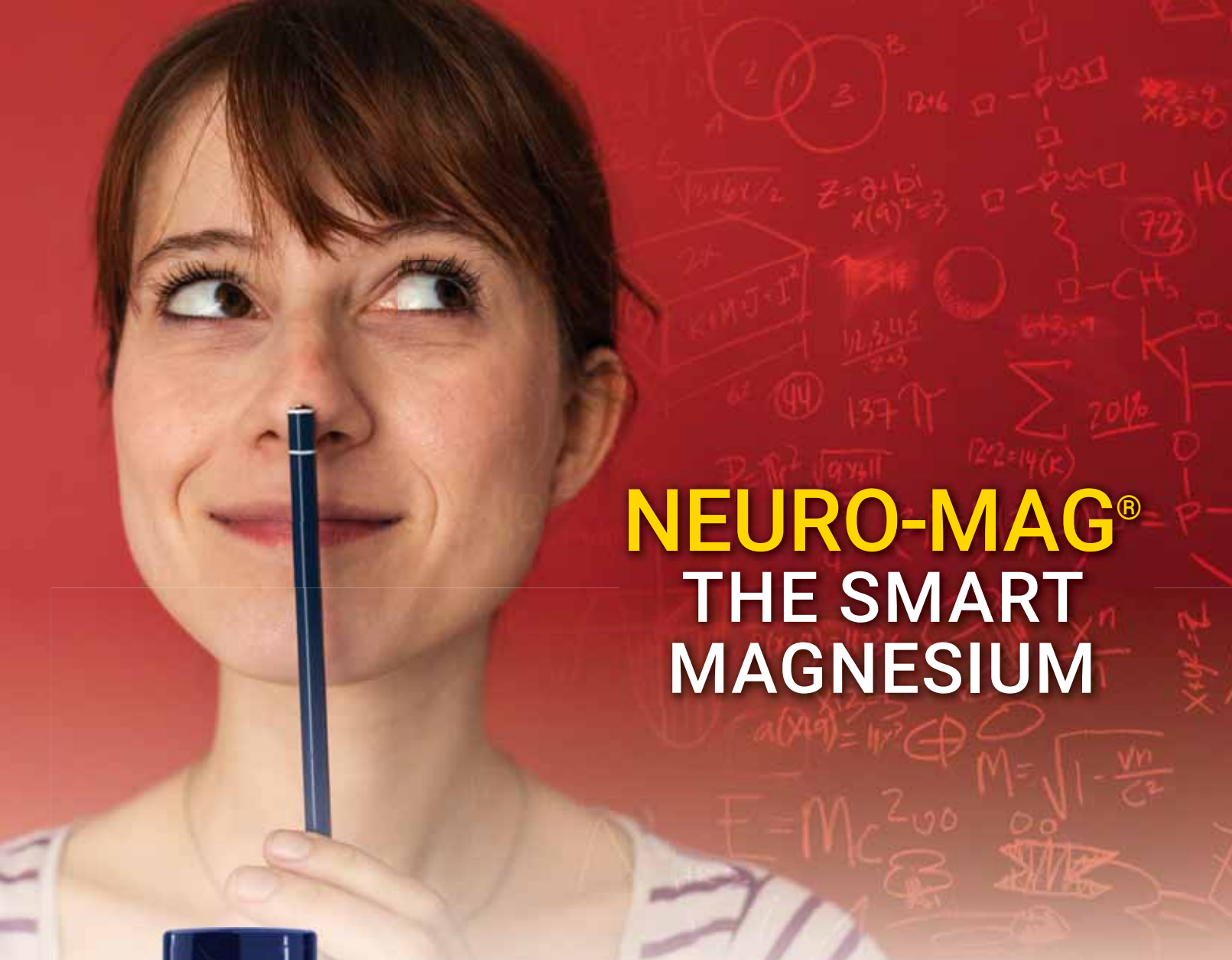
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* *Gerontology*. 1996;42(3):170-80.

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LESS FAT AROUND THE MIDDLE

A Mediterranean fruit has been demonstrated to support **healthy fat loss in humans**.*

A 3-month placebo-controlled trial asked participants to continue with their existing diet and exercise habits. Daily ingestion of **400 mg** extract from the **moro orange** produced on average:¹

- Lower **waist** circumference by **2.79 inches**
- Reduced overall **weight** by **4.0%**
- Decreased **hip circumference** by **2.35 inches**

References

1. *Nat Prod Res.* 2015;29(23):2256-60.
2. *Nutrients.* 2022;14(3):427.

A 6-month placebo-controlled trial asked participants to consume 500 fewer daily calories and walk for 30 minutes, three times a week. The group taking **400 mg** each day of **moro orange extract** produced on average:²

- Lower **waist** circumference by **1.54 inches**—*more than one full belt notch*
- Decreased **abdominal fat** by **11.3%**
- Reduced overall **weight** by **4.2%**

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

Mediterranean Weight Management comes in tasty, vegetarian gummies with a natural blueberry flavor and **no added sugar**.

Each gummy provides **400 mg** of a proprietary extract of **moro orange**.

The suggested dose is two gummies once daily. Each bottle of the **new Mediterranean Weight Management** gummies provides a 30-day supply.

Item #02506

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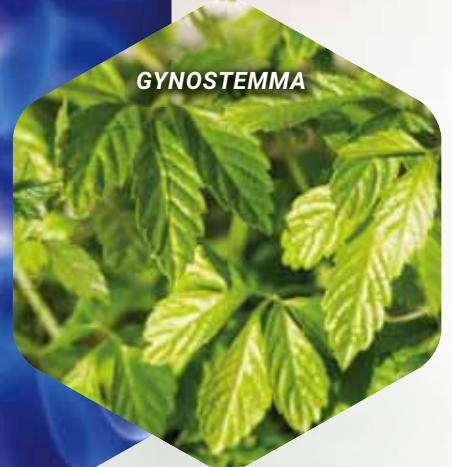
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* This supplement should be taken in conjunction with a healthy diet and regular exercise program. Individual results are not guaranteed, and results may vary.

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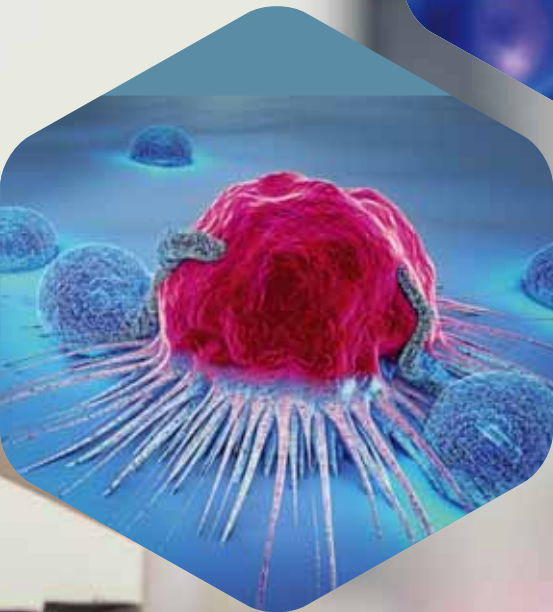


Cancer-Fighting Properties of *GYNOSTEMMA*



GYNOSTEMMA

BY TIM CHASEN



Searching for plants with **anti-cancer** activity, scientists focused on a vine native to parts of Asia called ***Gynostemma pentaphyllum***.

Long used to promote **longevity**, modern research has identified in it a treasure trove of **anti-cancer** compounds.¹

A review paper of cell and animal studies presented data on *Gynostemma's* potential effects against leukemia, colon cancer, prostate cancer, lung cancer, breast cancer, and more.¹

Cancer-Fighting Compounds

Gynostemma pentaphyllum contains more than **230** different compounds in multiple classes, including saponins, sterols, flavonoids, and others.¹

Dozens of these nutrients have been studied and most have demonstrated **anti-cancer** activities against different cancer types.

One review article listed **28 specific compounds** in *Gynostemma* that have **anti-cancer activity** in vitro. That *doesn't* include the flavonoids and carotenoids it contains, which *also* have **cancer-fighting** properties in vitro.¹

Reducing Cancer Growth

Studies in cell cultures and animal models have demonstrated this plant's **anti-cancer** properties.¹

In animals given *Gynostemma*, the **size** and **weight** of tumors is significantly reduced.²⁻⁵

Some of these studies found that *Gynostemma* attacked **cancer cells** and boosted the animals' **immune response** to the tumor.^{3,6-8}

Gynostemma also appears to have synergistic effects with other anti-cancer compounds. For example, in a mouse model of **colorectal cancer**, co-treatment with the chemotherapy drug **5-fluorouracil** enhanced the drug's effectiveness.⁹

Early Human Trials

Evidence from studies in the 1990s mentions that *Gynostemma* intake enhances **immune function** even when patients are undergoing chemotherapy, which *impairs* immune function.¹

An early observational study showed **lower** rates of cancer relapse and metastasis as well as **lower mortality rates** and improved **immune function**.

Research interest on the benefits of *Gynostemma* has increased markedly over the past decades. We await and look forward to reporting new evidence as it becomes available.

How Gynostemma Works

With its many bioactive compounds, *Gynostemma* induces several beneficial mechanisms all at once.

In general, *Gynostemma* modulates the activity of several cellular *signaling* pathways tied to cancer formation and progression.

For example, it activates **AMPK**, while blocking **mTOR** and the associated **PI3K/Akt**.^{1,10-12}

These pathways are involved in many aspects of cancer progression. These same mechanisms are found for other anti-cancer compounds being explored, such as the drug **metformin**.



WHAT YOU NEED TO KNOW



Gynostemma's Cancer-Fighting Actions

- *Gynostemma pentaphyllum*, also known as jiaogulan, is an Asian plant containing hundreds of different bioactive compounds. Many have been studied and found to have **anti-cancer** activities.
- In cell culture and animal models, *Gynostemma* has been shown to stop the **growth and spread** of cancer, cause cancer cells to die off, and help the immune system attack cancer.
- *Gynostemma* acts by modulating the activity of several cellular signaling pathways tied to cancer formation and progression.

Gynostemma's mechanisms are associated with effects that have been observed in various studies. Some of the most notable include:¹

- **Cell cycle arrest.** When cancer cells grow and reproduce, they pass through a complex pathway known as the **cell cycle**. In multiple cancer types, studies have shown that *Gynostemma* modulates the activity of several proteins involved in cell cycle regulation, **stopping the growth of cancer cells**.
- **Induction of cell death.** When normal cells are aged or damaged, they die off through a beneficial process called **apoptosis**. Cancer cells *shut off* this process, evading death. *Gynostemma* acts to *re-activate* apoptosis, **killing off** these abnormal cells.
- **Inhibition of invasion and metastasis.** The lethality of cancers lies mainly in their ability to invade surrounding healthy tissues and **metastasize** (spread) to distant sites in the body. *Gynostemma* blocks several pathways involved in invasion and metastasis.

- **Interfering with cancer cell metabolism.** Cancer cells need nutrients and energy to grow. *Gynostemma* has been found to alter the function of key enzymes involved in cancer cell metabolism, **starving cancer cells of energy** and further blocking their ability to grow and reproduce.
- **Immune support.** *Gynostemma* has been found to support key **immune system** functions, giving a boost to immune cells such as macrophages, T cells, and NK cells. This helps the body more effectively **fight and attack cancer**.

This wide range of mechanistic effects makes *Gynostemma* a potential adjuvant weapon in the battle against cancer.

Summary

Gynostemma pentaphyllum and its extracts contain hundreds of compounds, many of which have demonstrated, in pre-clinical studies, **anti-cancer** activities against a range of human cancer types.

By acting on different *signaling* pathways associated with cancer formation and progression, *Gynostemma* adds yet another ingredient with promising results in the fight against cancer.

Most people use ***Gynostemma pentaphyllum*** today to activate cellular **AMPK**, which suppresses excess **mTOR1**. This enables many people to lose excess **belly fat**.

The anti-cancer findings provide another reason for people to include ***Gynostemma pentaphyllum*** in their supplement program.

We look forward to new evidence on *Gynostemma*, which has attracted growing interest in recent decades. ●

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



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"It has helped me lose some belly fat."

James

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The Problem with Sleep-Aid Drugs

BY BARRY MICHAELS

More than **30 million** adults in the U.S. rely on **Xanax[®], Valium[®], Ativan[®]**, or other prescription **benzodiazepine** drugs to cope with sleep disorders.¹⁻³

These drugs come with side effects, and long-term use can lead to addiction.

Benzodiazepines cause another issue. Their use is associated with reduced **melatonin** levels.⁴⁻⁶

In one study, a *single* dose of a benzodiazepine derivative (which is metabolized into active benzodiazepines) before bedtime significantly **suppressed the production of melatonin**.⁴

Melatonin helps regulate our **sleep cycles**. This means that benzodiazepines *interfere* with the body's natural ability to initiate healthy sleep.

Clinical trials show that melatonin intake can **improve sleep** quality in many people and appears to help reduce dependence on benzodiazepine **drugs**.

Dangers of Benzodiazepines

More than **50 million** U.S. adults suffer from a **sleep disorder** like insomnia or sleep apnea.^{7,8}

Poor sleep has been linked with health problems, including type II diabetes, obesity, and injuries. In the elderly, sleep problems are associated with increased risk of falls, frailty, and death.⁹⁻¹⁴

Many people turn to **benzodiazepine** drugs for help.¹⁵ These drugs enhance sleep onset, reduce the number of times waking at night, and improve total sleep time and sleep quality with **short-term** use.¹⁶ Too often, these drugs are taken *longer* than needed, increasing their addictive potential.

Well-known downsides to regular benzodiazepine use:¹⁷⁻¹⁹

- They are heavily **sedating**, impairing the ability to think clearly and increasing risk for accidents.
- They can lead to **tolerance**, which means users need to take higher and higher doses to get the same effect.
- They can lead to **dependence** or **addiction**.
- They come with common **side effects** including dizziness, weakness, depression, and confusion.



What's less well-known is that benzodiazepines **interfere** with how the **brain** naturally promotes healthy sleep.

Benzodiazepines Deplete Melatonin

Melatonin is a hormone secreted by the brain's **pineal gland**. Often called the "sleep hormone," it is central to regulating the body's natural **sleep-wake cycle**.²⁰

Benzodiazepines **interfere** with the body's natural melatonin production.⁴

As early as 1986, scientists found that even a *single* dose of a benzodiazepine derivative (which is metabolized into active benzodiazepines) before bedtime significantly **suppresses the production of melatonin**.⁴ When scientists administered a drug that *blocked* the action of benzodiazepines, melatonin was restored to normal levels.

Larger studies have confirmed this finding. For example, after a single nighttime dose of **alprazolam (Xanax®)**, peak levels of melatonin in the bloodstream are roughly **half** what they would be normally.^{5,6}

By trying to improve sleep quality with benzodiazepines, people are impeding their body's natural ability to regulate sleep.

How Oral Melatonin Improves Sleep

A meta-analysis of **19** studies found that melatonin **improves sleep** in multiple ways, including:²¹

- Reducing the time it takes to *fall asleep*,
- Improving sleep *quality*, and
- Extending the *duration* of sleep.

Melatonin promotes **relaxation** and **sleep**, without side effects or the risk of dependence associated with benzodiazepines.

For example, an observational study of patients undergoing kidney dialysis—which is often associated with sleep disturbances—found that taking **3 mg** of **melatonin** before bedtime was *more effective* than **Xanax®** in improving sleep quality as shown in multiple subjective sleep assessment scales.²²

Regrettably, not all sleep-deprived sufferers find complete relief using melatonin alone.

Reduce Dependence on Drugs

Melatonin is **safer** than benzodiazepines and has side benefits that include potential to reduce risks of certain **cancers**.²³

It is not addictive or sedating, and melatonin *supports* the brain's natural ability to promote sleep instead of interfering with it.

In elderly insomniacs who use benzodiazepines to be able to sleep, adding **melatonin** significantly improved **sleep quality** and **time**.²⁴ In a follow-up study, scientists evaluated whether taking melatonin could help people *stop* using benzodiazepines.²⁵

They randomized elderly insomniacs on benzodiazepines to receive either **2 mg** of controlled-release **melatonin** before bed or a **placebo**. During the six weeks of the study, participants were encouraged to try to wean themselves off benzodiazepines.

By the end of the study, **79%** of those taking melatonin were able to **completely discontinue benzodiazepine use**. In the placebo group, only **25%** were able to stop using benzodiazepines.

Life Extension advises not to discontinue any medication without prior approval from your treating physician.

Summary

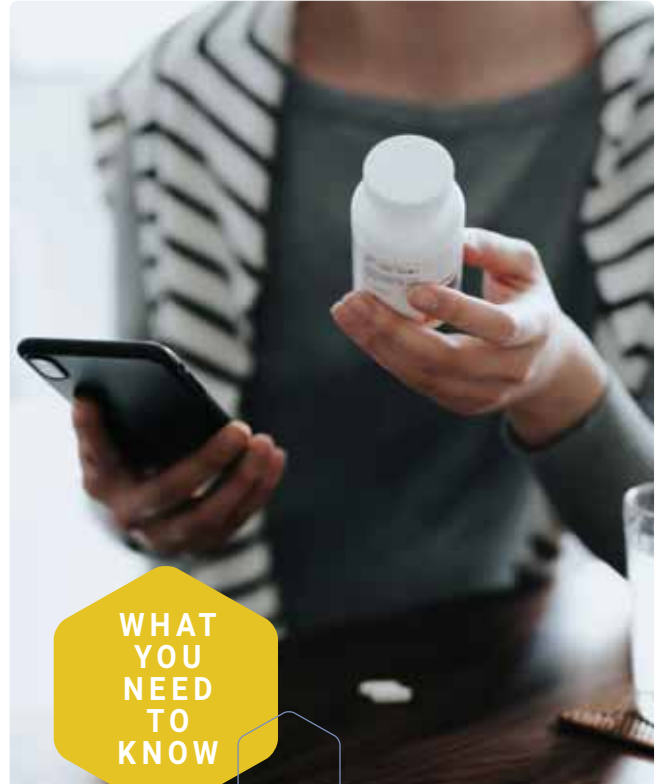
The use of **benzodiazepines** to promote sleep comes with potential side effects and may lead to dependence.

Clinical trials show that melatonin **improves sleep** quality, helps people fall asleep faster, helps them stay asleep longer, and can help **benzodiazepine** users discontinue their use of these drugs.

The dilemma is that melatonin does not work for everyone and better methods to improve sleep quality, especially in older individuals, is urgently needed.

Please consult with your treating physician before discontinuing use of any medication. •

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



WHAT
YOU
NEED
TO
KNOW

Melatonin Compared to Prescription Sleep Medications

- Many people turn to **benzodiazepine** drugs to help promote sleep. But benzodiazepines cause sedation and are often addictive.
- Research has revealed that even a *single* dose of a benzodiazepine significantly lowers levels of **melatonin**, the sleep hormone that is integral to sleep control in the body.
- Trials show that **oral melatonin** promotes sleep without side effects or the risk for dependence associated with benzodiazepines.



Common Benzodiazepines

The **benzodiazepines**, often referred to as “benzos,” are a group of drugs that induce sedation and sleep.

Below is a list of the most commonly used benzodiazepines:²⁶

- Alprazolam (Xanax®)
- Diazepam (Valium®)
- Lorazepam (Ativan®)
- Clonazepam (Klonopin®)
- Chlordiazepoxide (Librium®)
- Temazepam (Restoril®)
- Clorazepate (Tranxene®)
- Halazepam (Paxipam®)
- Estazolam (ProSom®)
- Flurazepam (Dalmane®)
- Triazolam (Halcion®)
- Oxazepam (Serax®)
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- Quazepam (Doral®)

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Bloated? Get Relief

BY LAURIE MATHENA



Sometimes, the foods you love *don't love you back*.

Between **16% to 31%** of adults complain of **bloating**, which produces uncomfortable feelings of excessive fullness, gas, abdominal pressure, and pain. A whopping **66% to 90%** of those with irritable bowel syndrome (IBS) suffer from the same symptoms.¹

Bloating also often goes hand-in-hand with other gastrointestinal disorders, such as **dyspepsia** (indigestion), celiac disease, and constipation.¹

Fortunately, **four plant compounds** have been shown to provide effective relief from occasional digestive discomfort.

Decreased Bloating

Fennel and **curcumin** have traditionally been used to aid digestion.

In a clinical trial, researchers combined **fennel seed oil** and **low-dose curcumin** to test their effect in patients with **irritable bowel syndrome**.²

After 30 days, those taking the **fennel-curcumin** blend reported an average **50%** decrease in a rating score of bloating, abdominal pain, and other irritable bowel syndrome symptoms. This was nearly *double* the **26.1%** decrease in the placebo group.

Even better, **all symptoms** were *improved* by treatment with fennel and curcumin, and **25.9%** of the **fennel-curcumin** group became **completely symptom-free** (compared to just **6.8%** of placebo recipients).

The treated group also reported a significant improvement in irritable bowel syndrome-related quality of life, with no adverse effects.

Improved Digestive Symptoms

Two additional extracts, **artichoke** and **ginger**, have been shown to substantially improve **digestive symptoms** like bloating, nausea, vomiting, upper abdominal pain, and feeling overly full after eating only a small amount of food.

In a clinical trial, 126 patients with **functional dyspepsia** (recurring and unexplained indigestion) received either **20 mg** of ginger root extract and **100 mg** of artichoke leaf extract or a placebo.³

In just two weeks, **44.6%** of participants taking the artichoke-ginger blend had **significant improvement** in digestive symptoms, compared to **13.1%** of placebo recipients.

After **four weeks**, **63.1%** of those in the treatment group reported **marked reductions** in digestive symptoms, compared to only **24.6%** in the placebo group.

Summary

After-meal **bloating** and other gastrointestinal disturbances can impair our quality of life.

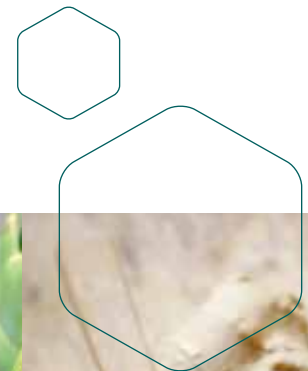
Ginger, artichoke leaf, fennel, and curcumin have shown clinical effectiveness in decreasing bloating, gas, nausea, abdominal pain, and other symptoms typical of irritable bowel syndrome as well as other gastrointestinal problems.

Together, extracts from these four plants may promote a healthier digestive system. •

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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DIGESTIVE UPSETS?

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William

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Vitamin C



NUTRIENTS that IMPACT IMMUNITY

BY MICHAEL DOWNEY

Normal **aging** results in a progressive decline in **immune function** with a sharp fall occurring after age 65-70 years.

Experimental studies seek to restore **stem cells** in bone marrow, where all **immune cells** originate.^{1,2}

The dilemma is that these **stem cell renewal** therapies are not yet available outside research settings.

Healthy immunity at any age, however, can be supported using **nutrients** that function via multiple pathways.

This article summarizes what many readers of this publication are doing to optimize their **immune function**.

Garlic

Garlic

A recent review found that **garlic** compounds show strong **antibacterial** activity against a wide range of harmful bacteria, including drug-resistant strains.³

Another review reported that **garlic** offers **anti-microbial**, antifungal, anticancer, wound-healing, anti-oxidant, anti-inflammatory, and other protective effects.⁴

Compounds in garlic boost proliferation of **T cells** and function of **natural killer** cells.⁵⁻⁸

Garlic's **antiviral** defense was demonstrated when volunteers took **oral garlic** containing the protective garlic compound **allicin** from November through February.⁹

The garlic group suffered **63% fewer cold infections** than the placebo group. Those in the garlic group who *did* catch colds had symptoms for just **1.52 days** on average, compared to **5.01 days** for the placebo group.⁹

Although it contains no allicin, aged garlic extract has demonstrated potent **antiviral** and **immune-enhancing** properties.

In individuals taking an **aged garlic extract**, T cells and NK cells showed greater proliferation, compared to individuals taking placebo. After 90 days, the garlic group had experienced **21% fewer cold and flu symptoms** and **58% fewer work/school days missed** due to illness.⁵



Lactoferrin

Lactoferrin is a protein found in milk and produced in tears, saliva, mucus, and by some **immune cells**.¹⁰

It helps *prevent* a wide range of pathogens from entering through the linings of the oral cavity, nasal cavity, airways, and digestive system. This includes **viruses** that cause the common cold, flu, and hepatitis B and C.¹⁰

Lactoferrin **disrupts viruses' ability to bind to cells**.¹¹ If a virus cannot attach to cells, it cannot cause illness.

Lactoferrin's *indirect* antiviral effects include:

- Activating and increasing **natural killer** cells, which eliminate abnormal cells,^{12,13} and
- Stimulating production of other antiviral compounds, including **interferons**, which trigger immune mechanisms.^{10,14}

If viruses are already *inside* body cells, lactoferrin may block these pathogens from **reproducing**, limiting the spread of an illness and reducing its severity.^{10,15}

Lactoferrin also enhances the immune system's ability to monitor for potential **carcinogenic** cells.¹²

A **2022** study concluded that, by **sequestering iron**, lactoferrin reduces the pathogenic potential of microorganisms, which *require* iron to grow and reproduce. The study concluded that lactoferrin may help maintain health at **all stages** of life.¹⁶

Vitamin D

Vitamin D fortifies immunity and has anti-microbial effects.¹⁷⁻²¹

Published studies show that vitamin D:

- Interferes with some forms of **viral** replication,
- Helps repair cell linings, including those in the **lung airways**,
- Boosts production of proteins that protect against **infection**, and
- Helps prevent production of excess **pro-inflammatory** compounds in the lungs.

Meta-analyses of clinical trials have shown that vitamin D helps protect against **respiratory tract infections**.^{22,23}

Low vitamin D levels have been associated with *higher* rates of many **chronic diseases**, including cancer.²⁴

In **2022**, two reviews were published documenting vitamin D's capacity to enhance protection against both **infections** and **cancer**.^{25,26}

The first review noted that studies support vitamin D's role in preventing *and* reducing the severity of several **infectious diseases**.²⁵

It also found that *higher* blood *25-hydroxyvitamin D* levels (a measure of vitamin D levels in the body) may benefit some **autoimmune rheumatic diseases**.²⁵

The second review found that vitamin D provides **multi-level anti-cancer action** and protects against several **cancer** types.²⁶

Zinc

Zinc deficiency, which is common among the elderly,²⁷ may compromise immune function and contribute to atherosclerosis, **cancer**, autoimmune diseases, and other age-related conditions.^{28,29}

Aging adults who *replenish* zinc levels may slow normal immune decline and protect against **chronic inflammation**.³⁰

Oral zinc intake in the elderly boosts the stress response of **white blood cells**, providing an immune anti-aging mechanism.³¹

A **2022** review study found that zinc's **anti-viral** properties can *disrupt* the **replication** and **infectivity** of some respiratory viruses and help regulate immune response in the respiratory tract.³²

Mushrooms

A **2022** review article concluded that medicinal **mushrooms** possess anticancer, anti-aging, antiviral, anti-parasitic, antimicrobial, and other beneficial properties.³³

Another recent review concluded that mushrooms' ability to inhibit **tumor** cells makes them a "**natural pharmaceutical**".³⁴

Among the most powerful of mushrooms' immune-supporting compounds are **beta glucans**.

They bind to receptors on cells important for **immunity**,^{35,36} boosting their function and helping defend against infection. Beta glucans activate *both* the **innate** (the immediate, general defense) and **adaptive** (a later defense against specific threats) immune responses.^{35,37-40}



Support Immunity as You Age

- The **immune system** weakens with age, increasing risk of infectious disease, cancer, and other life-shortening illnesses.
- Oral intake of **vitamin D, zinc, lactoferrin, mushrooms, garlic, melatonin, and vitamin C** has been shown to enhance immune function.
- Daily use of these nutrients may help fight disease and maintain health well into old age.



Preclinical studies show that melatonin improves immune response to infection by viruses, bacteria, and parasites by stimulating production and activity of **T cells**, **natural killer** cells, and **macrophages** that engulf and destroy invaders.⁵⁴

Melatonin has also been found to support the immune system's protection against **cancer**, inhibiting it at **every stage**.⁶²⁻⁶⁶

A recent review study concluded that melatonin was a potential **oncostatic**, an agent that blocks cancer spread.⁶⁷ Another **2022** report found that **melatonin** could mitigate cancer's development, growth, and spread.⁶⁸

Vitamin C

The activity of **phagocytes** (cells that surround and kill invaders), **T cells**, and many other immune cells is closely tied to their **vitamin C** content.⁶⁹

So, it makes sense that **immune functions** are improved by taking **vitamin C**.^{70,71}

A clinical trial showed that oral vitamin C reduced duration of **colds** by **9.4%** on average and may decrease the severity of **respiratory tract infections**.⁷² (Not all studies show vitamin C to be effective against the common cold.)

Researchers have found that vitamin C:

- Boosts function, growth, and survival of **infection-fighting** cells,^{73,74}
- Increases levels of immune-activating **interferons**,^{75,76}
- Neutralizes excess **free radicals** caused by infections, reducing illness severity,⁷⁷
- Promotes production of **collagen**, which maintains a barrier against infection,⁷⁶
- Reduces **histamine**, a pro-inflammatory compound⁷⁶ that plays a role in infections⁷⁸ and causes allergy symptoms,⁷⁹ and
- Lowers **pro-inflammatory** compounds caused by infection, promoting tissue healing.⁸⁰

Optimal immunity requires **daily** intake of vitamin C and other immune-supporting nutrients.

In animal models of aging, **beta glucans** help prevent or **reverse immunosenescence**.^{39,41}

They boost immune cell numbers *and* improve their function.⁴¹

In **humans**, beta glucans demonstrate **infection-fighting** effects, particularly against upper respiratory tract infections like cold and flu.⁴²

Ragweed **allergy** sufferers also had significant reductions in symptoms and severity after **beta glucans** intake.⁴³

Four mushroom strains that support the immune system are **shiitake**, **maitake**, **reishi**, and **chaga**.^{38,44-52}

Combining **beta glucans** with immune-supporting **mushrooms** may maximize immune support.

Melatonin

With aging, the **thymus gland**—which produces **T cells**—shrinks, diminishing immune function.

But in aged mice, the hormone **melatonin** stimulates *new* thymus growth, producing *new T cells*.⁵³

Melatonin also counters immune decline by:⁵⁴⁻⁶¹

- Enhancing responses of **antibodies** that “tag” viruses, bacteria, and other invaders for destruction by immune system components,
- Improving **T cell activity**, and
- Reducing **chronic inflammation**, a cause of most age-related, chronic disease.

Summary

Age-related immune system dysfunction increases risk of infectious disease, cancer, and chronic inflammatory conditions.

Oral intake of the key immune-supporting nutrients **vitamin D, zinc, lactoferrin, mushrooms, garlic, melatonin, and vitamin C** can enhance immune function and partially offset age-related immune decline. •

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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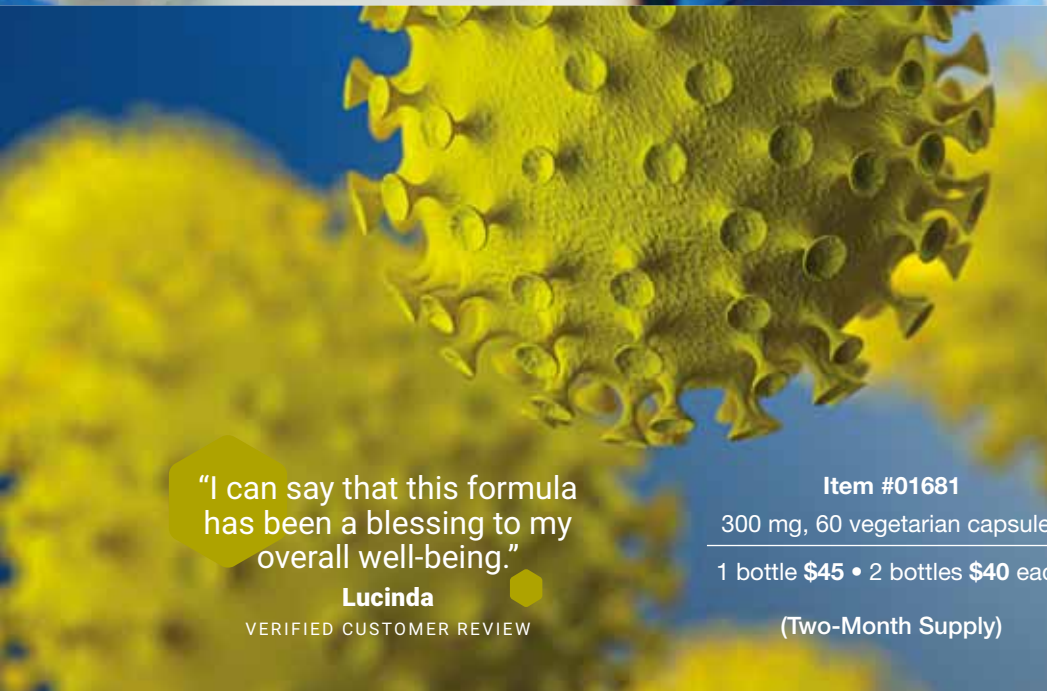
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What Is Chlorophyllin?

BY LAURIE MATHENA



We are surrounded by environmental toxins.

Currently, there are more than **80,000** chemicals registered or listed under the Toxic Substance Control Act.¹

In 2020, approximately **three billion** pounds of these toxic chemicals—many known carcinogens—were released into the environment.²

More disturbing is the fact that most of these chemicals were never adequately tested by any government agency regarding their effects on human health.³

Studies now show that these chemicals can contribute to diabetes, heart disease, and cancer by causing **mutations** to our DNA.⁴⁻⁸

You can't avoid exposure to these toxins, but you *can* take steps to minimize their harmful impact on your body.

An inexpensive compound called **chlorophyllin** helps **detoxify** these deadly chemicals from your body, while offering critical protection for your DNA.

Protection Against Numerous Types of Cancer

Chlorophyllin is a water-soluble derivative of the green plant substance **chlorophyll**.

Life Extension® reported on the **antimutagenic** properties of chlorophyllin in the mid-1980s. Since then, numerous studies have been published showing chlorophyllin's ability to protect against multiple types of cancer.

The liver is especially at risk because its job is to cleanse the body of these harmful toxins.

Out of the 600,000 new cases of **liver cancer** diagnosed yearly, it is estimated that up to **28%** of them are caused by **aflatoxin**, which is found in multiple improperly stored foods, including peanuts, corn, pistachios, and rice.⁹

Chlorophyllin binds to the carcinogenic byproducts of aflatoxin metabolism, which decreases the **bioavailability** of these cancer-causing chemicals.^{10,11}



In this way, chlorophyllin has the potential to **significantly reduce the risk of liver cancer** induced by aflatoxin.

Additionally, chlorophyllin has been shown to protect against the following:

- **Oral Cancer:** A study in hamsters showed that chlorophyllin can prevent genetic mutations and reverse gene expression linked to oral cancer caused by the chemical dimethylbenzanthracene (DMBA).^{7,12}
- **Pancreatic Cancer:** Chlorophyllin has antiproliferative effects on pancreatic cells.¹³
- **Colon Cancer:** When colon cancer cells were treated with chlorophyllin, it inhibited the enzyme ribonucleotide reductase (RR), which made these cancer cells less able to grow and more receptive to mainstream cancer chemotherapeutic agents.¹⁴
- **Bladder Cancer:** The combination of chlorophyllin with photodynamic therapy resulted in approximately **85%** destruction of bladder cancer cells.¹⁵
- **Breast Cancer:** When human breast cells were exposed to the carcinogen dibenzopyrene (DBP), dangerous and unstable DNA adducts were formed. However, adding chlorophyllin to the breast cells led to a **65%** decrease in the number of DNA adducts.¹⁶ Formation of DNA adducts is an early step in the formation of cancer-causing DNA mutations.¹⁷
- **Stomach Cancer:** Chlorophyllin has been shown to help stop the growth and metastasis of stomach cancer in rats.¹⁸

Anticarcinogenic Pathways

Chlorophyllin protects against many types of cancer because it targets multiple pathways involved in cancer development.

This compound, associated with healthy green plants, has demonstrated **anticarcinogenic effects** against a variety of widespread environmental toxins.¹⁹

- **Chlorophyllin** helps prevent carcinogens such as **heterocyclic amines** from altering DNA to inflict malignant changes.²⁰
- It limits the formation of DNA adducts caused by known carcinogens, including dibenzanthracene, dibenzopyrene and benzophenanthrene.²¹
- It functions as an **antimutagenic agent** against chemicals such as **PhIP**, which are known to be involved in colon, prostate, pancreatic, and breast cancer.^{21,22}
- It protects against **mutations** of the **p53 tumor suppressor gene**. Protecting healthy expression of **p53** is a critical factor that helps guard against **cancerous** changes.²³

Proper use of **chlorophyllin** affords considerable defense against the natural and man-made toxins that permeate our food and environment.

Health-conscious individuals sometimes take around **100 mg of chlorophyllin** with heavy meals to protect DNA from environmental and dietary **mutagens**. •

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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- > **Alpha-carotene** further helps support **macular density**.¹



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REVIEW

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DETOX YOUR DNA

"Love this stuff."

Andrew

VERIFIED CUSTOMER REVIEW



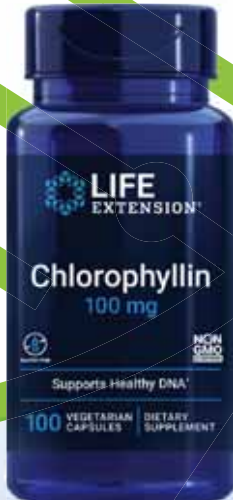
DNA is under constant attack from environmental and food toxins that can cause unwanted changes.

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* Supplier Internal Study. Data on File. 2017



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Cook for Your Gut Health:

Quiet Your Gut, Boost Fiber, and Reduce Inflammation



Gut health is vital to your overall health and longevity. Beyond influencing your digestive system, it plays a role in immunity, emotions, and in how well you absorb nutrients from food.

The cookbook, *Cook for Your Gut Health*, from America's Test Kitchen, provides recipes designed to encourage a healthy microbiome.

These recipes are packed with fiber to help keep you regular, provide prebiotics that help feed the good bacteria in your gut, and help prevent chronic inflammation in your GI tract.

All the recipes can be adjusted to be gluten-free, lactose-free, or wheat-free. And 60 of the recipes in *Cook for Your Gut Health* are naturally low FODMAP, while others can be easily customized to be low FODMAP.

FODMAPs are fermentable carbohydrates that are notorious for triggering digestive symptoms like pain, gas, and bloating. A low-FODMAP diet is recommended for anyone suffering from irritable bowel syndrome (IBS) and other digestive disorders.

In addition to its gut-friendly recipes, *Cook for Your Gut Health* provides an in-depth education on the science of gut health, how to eat to support a healthy gut, and information on the low-FODMAP diet.

The following recipes from the book prove that you don't have to sacrifice flavor or variety to support a healthy gut.

—LAURIE MATHENA

Pea and Feta Frittata

SERVES 4

12 large eggs

1/3 cup whole milk

1/2 teaspoon plus pinch table salt, divided

2 ounces feta cheese, crumbled into 1/2-inch pieces (1/2 cup)

2 tablespoons minced fresh oregano

2 tablespoons extra-virgin olive oil, divided

2 cups frozen peas

Pinch red pepper flakes (optional)

1/2 teaspoon grated lemon zest plus 2 1/2 teaspoons juice, divided

6 ounces (6 cups) baby arugula

1 fennel bulb, stalks discarded, bulb halved, cored, and sliced thin

1. Adjust oven rack to middle position and heat oven to 350 degrees. Whisk eggs, milk, and 1/2 teaspoon salt in bowl until well combined. Stir in feta and oregano.

2. Heat 1 teaspoon oil in 12-inch oven-safe nonstick skillet over medium-high heat until shimmering. Add peas, pepper flakes, and 1/4 cup water. Cover and cook until peas are bright green and just tender, 3 to 5 minutes. Uncover, stir in lemon zest and 1/2 teaspoon juice and cook until skillet is dry, about 1 minute.

3. Add egg mixture and cook, using rubber spatula to stir and scrape bottom of skillet until large curds form and spatula leaves trail through eggs but eggs are still very wet,



about 30 seconds. Smooth curds into even layer and cook, without stirring, for 30 seconds. Transfer skillet to oven and bake until frittata is slightly puffy and surface bounces back when lightly pressed, 6 to 9 minutes.

4. Using rubber spatula, loosen frittata from skillet and transfer to cutting board. Let sit for 5 minutes. Meanwhile, whisk remaining 5 teaspoons oil, remaining 2 teaspoons lemon juice, and remaining pinch salt together in large bowl.

Add arugula and fennel and toss to coat. Season with salt and pepper to taste. Serve.

Make it Low FODMAP Substitute dairy-free or lactose-free milk for whole milk. Substitute 2 cups frozen broccoli florets, thawed and chopped, for peas. Increase arugula to 8 ounces and reduce fennel to 1/2 bulb.

Make it Dairy Free Substitute dairy-free milk for the whole milk. Omit feta.

Salmon, Avocado, Orange, and Watercress Salad

SERVES 4

2 (6- to 8-ounce) skin-on salmon fillets, 1 inch thick

3 tablespoons plus 1 teaspoon extra-virgin olive oil, divided

$\frac{3}{4}$ teaspoon table salt, divided

$\frac{1}{8}$ teaspoon pepper

3 oranges

1 teaspoon white wine vinegar

1 teaspoon Dijon mustard

4 ounces (4 cups) watercress, torn into bite-size pieces

1 avocado, halved, pitted, and sliced thin

$\frac{1}{4}$ cup fresh mint leaves, torn

$\frac{1}{4}$ cup hazelnuts, toasted and chopped

1. Adjust oven rack to lowest position, place aluminum foil-lined rimmed baking sheet on rack, and heat oven to 500 degrees. Make 4 or 5 shallow slashes, about 1 inch apart, on skin side of each fillet, being careful not to cut into flesh. Pat salmon dry with paper towels, rub with 1 teaspoon oil, and sprinkle with $\frac{1}{4}$ teaspoon salt and pepper.

2. Reduce oven temperature to 275 degrees and remove sheet from oven. Carefully place salmon skin side down on hot sheet. Roast until center is still translucent when checked with tip of paring knife and registers 125 degrees (for medium-rare), 8 to 12 minutes. Transfer

salmon to plate. Let cool completely, about 20 minutes. Using 2 forks, flake salmon into rough 2-inch pieces; discard skin.

3. Meanwhile, cut away peel and pith from oranges. Holding fruit over bowl, use paring knife to slice between membranes to release segments. Measure out 2 tablespoons orange juice and transfer to separate bowl.

4. Add vinegar, mustard, remaining 3 tablespoons oil, and remaining $\frac{1}{2}$ teaspoon salt to bowl with orange juice and whisk until smooth.

Arrange watercress in even layer on serving platter. Top with salmon pieces, orange segments, and avocado. Drizzle vinaigrette over top, then sprinkle with mint and hazelnuts. Serve.

Make it Low FODMAP Reduce avocado to $\frac{1}{2}$ avocado (4 ounces).



Pan-Seared Chicken Breasts with Artichoke, Tomato, and Bulgur Pilaf

SERVES 4

- ½ teaspoon ground cumin
- ¼ teaspoon plus ⅛ teaspoon table salt, divided
- ⅛ teaspoon pepper
- 4 (6-ounce) boneless, skinless chicken breasts, trimmed
- ¼ cup extra-virgin olive oil, divided
- 1½ cups jarred whole baby artichokes packed in water, rinsed, patted dry, and quartered
- 2¼ cups water
- 1½ cups medium-grind bulgur
- 10 ounces cherry tomatoes, halved
- 3 ounces feta cheese, crumbled (¾ cup)
- ¾ cup minced fresh parsley
- ⅓ cup pitted kalamata olives, chopped
- 1 tablespoon lemon juice

1. Combine cumin, ¼ teaspoon salt, and pepper in bowl. Cover chicken breasts with plastic wrap and pound to uniform thickness as needed. Pat dry with paper towels and sprinkle with cumin mixture.

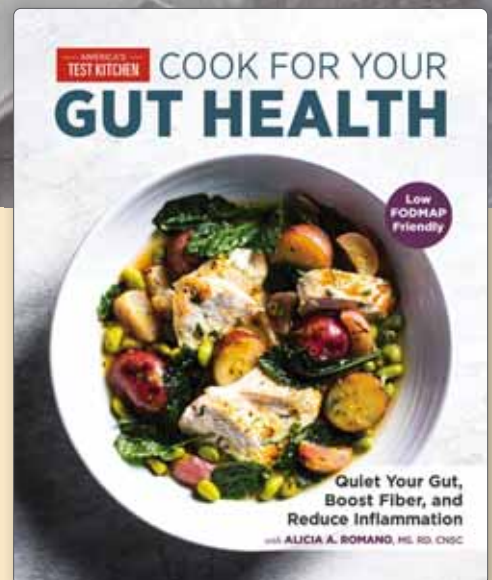
2. Heat 1 tablespoon oil in 12-inch skillet over medium-high heat until just smoking. Cook breasts, turning as needed, until golden brown and register 160 degrees, about 10 minutes. Transfer breasts to plate, tent with aluminum foil, and let rest while preparing pilaf.



3. Heat 1 tablespoon oil in now-empty skillet over medium-high heat until shimmering. Add artichoke hearts and cook, without stirring, until spotty brown, about 2 minutes. Stir in water, scraping up any browned bits, and bring to boil. Stir in bulgur and remaining ⅛ teaspoon salt. Off heat, cover and let sit until grains are softened and liquid is fully absorbed, about 5 minutes.

4. Add tomatoes, feta, parsley, olives, lemon juice, and remaining 2 tablespoons oil to pilaf and gently fluff with fork to combine. Season with pepper to taste. Serve chicken with pilaf.

Make It Dairy Free Omit feta.



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

To order a copy of *Cook for Your Gut Health*, call 1-800-544-4440 or visit www.LifeExtension.com

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- 02121 Homocysteine Resist
- 02018 Optimized Carnitine
- 01949 Super-Absorbable CoQ10 Ubiquinone with *d*-Limonene • 50 mg, 60 softgels
- 01951 Super-Absorbable CoQ10 Ubiquinone with *d*-Limonene • 100 mg, 60 softgels
- 01929 Super Ubiquinol CoQ10
- 01427 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 30 softgels
- 01425 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 50 mg, 100 softgels
- 01437 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 30 softgels
- 01426 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 100 mg, 60 softgels
- 01431 Super Ubiquinol CoQ10 with Enh Mitochondrial Support™ • 200 mg, 30 softgels
- 01733 Super Ubiquinol CoQ10 with PQQ
- 01859 TMG Liquid Capsules
- 00349 TMG Powder

HORMONE BALANCE

- 00454 DHEA • 15 mg, 100 capsules
- 00335 DHEA • 25 mg, 100 capsules
- 00882 DHEA • 50 mg, 60 capsules
- 00607 DHEA • 25 mg, 100 vegetarian dissolve in mouth tablets
- 01689 DHEA • 100 mg, 60 veg capsules
- 02368 Optimized Broccoli and Cruciferous Blend
- 00302 Pregnenolone • 50 mg, 100 capsules
- 00700 Pregnenolone • 100 mg, 100 capsules
- 01468 Triple Action Cruciferous Vegetable Extract
- 01469 Triple Action Cruciferous Vegetable Extract and Resveratrol

IMMUNE SUPPORT

- 02411 5 Day Elderberry Immune
- 00681 AHCC®
- 02302 Bio-Quercetin®
- 02410 Black Elderberry + Vitamin C
- 01961 Enhanced Zinc Lozenges
- 01704 Immune Modulator with Tinofend®
- 02425 Immune Packs with Vitamin C & D, Zinc and Probiotic

- 02005 Immune Senescence Protection Formula™
- 00316 Kyolic® Garlic Formula 102
- 00789 Kyolic® Reserve
- 01681 Lactoferrin (Apolactoferrin) Caps
- 02426 Mushroom Immune with Beta Glucans
- 01903 NK Cell Activator™
- 01394 Optimized Garlic
- 01309 Optimized Quercetin
- 01811 Peony Immune
- 00525 ProBoost Thymic Protein A
- 01708 Reishi Extract Mushroom Complex
- 01906 Standardized Cistanche
- 13685 Ten Mushroom Formula®
- 01097 Ultra Soy Extract
- 01561 Zinc Lozenges

INFLAMMATION MANAGEMENT

- 01639 5-LOX Inhibitor with AprèsFlex®
- 02324 Advanced Curcumin Elite™
Turmeric Extract, Ginger & Turmerones
- 01709 Black Cumin Seed Oil
- 02310 Black Cumin Seed Oil and Curcumin Elite™
- 00202 Boswella
- 02467 Curcumin Elite™ Turmeric Extract • 30 veg capsules
- 02407 Curcumin Elite™ Turmeric Extract • 60 veg capsules
- 01804 Cytokine Suppress® with EGCG
- 02223 Pro-Resolving Mediators
- 00318 Serrafazyme
- 01203 Specially-Coated Bromelain
- 00407 Super Bio-Curcumin® Turmeric Extract
- 01254 Zyflamend™ Whole Body

JOINT SUPPORT

- 02404 Arthro-Immune Joint Support
- 02238 ArthroMax® Advanced NT2 Collagen™ & AprèsFlex®
- 01617 ArthroMax® with Theaflavins & AprèsFlex®
- 02138 ArthroMax® Elite
- 00965 Fast-Acting Joint Formula
- 02430 Fast Acting Relief
- 00522 Glucosamine/Chondroitin Capsules
- 02420 Glucosamine Sulfate
- 02424 Joint Mobility
- 01600 Krill Healthy Joint Formula
- 01050 Krill Oil
- 00451 MSM (Methylsulfonylmethane)
- 02231 NT2 Collagen™

KIDNEY & BLADDER SUPPORT

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

LIVER HEALTH & DETOXIFICATION

- 01922 Advanced Milk Thistle • 60 softgels
- 01925 Advanced Milk Thistle • 120 softgels
- 02240 Anti-Alcohol Complex
- 01651 Calcium D-Glucarate
- 01571 Chlorophyllin
- 01522 Milk Thistle • 60 veg capsules
- 02402 FLORASSIST® Liver Restore™
- 01541 Glutathione, Cysteine & C
- 01393 HepatoPro
- 01608 Liver Efficiency Formula
- 01534 N-Acetyl-L-Cysteine
- 00342 PectaSol-C® Modified Citrus Pectin Powder
- 01080 PectaSol-C® Modified Citrus Pectin Capsules
- 01884 Silymarin
- 02361 SOD Booster

LONGEVITY & WELLNESS

- 00457 Alpha-Lipoic Acid
- 01625 AppleWise
- 02414 Bio-Fisetin
- 01214 Blueberry Extract
- 01438 Blueberry Extract and Pomegranate
- 02270 DNA Protection Formula
- 02431 Essential Youth - L-Ergothioneine
- 02119 GEROPROTECT® Ageless Cell™
- 02415 GEROPROTECT® Autophagy Renew
- 02401 GEROPROTECT® Stem Cell
- 02211 Grapeseed Extract
- 00954 Mega Green Tea Extract (decaffeinated)
- 00953 Mega Green Tea Extract (lightly caffeinated)
- 01513 Optimized Fucoidan with Maritech® 926
- 02230 Optimized Resveratrol Elite™
- 01637 Pycnogenol® French Maritime Pine Bark Extract
- 02210 Resveratrol Elite™
- 00070 RNA (Ribonucleic Acid)
- 02301 Senolytic Activator®
- 01208 Super R-Lipoic Acid
- 01919 X-R Shield

MEN'S HEALTH

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

MINERALS

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

MISCELLANEOUS

- 00577 Potassium Iodide
- 00657 Solarshield® Sunglasses

MOOD & STRESS MANAGEMENT

- 02434 Calm-Mag
- 02312 Cortisol-Stress Balance
- 00987 Enhanced Stress Relief
- 01074 5 HTP
- 01683 L-Theanine
- 02175 SAMe (S-Adenosyl-Methionine)
200 mg, 30 enteric coated vegetarian tablets
- 02176 SAMe (S-Adenosyl-Methionine)
400 mg, 30 enteric coated vegetarian tablets
- 02174 SAMe (S-Adenosyl-Methionine)
400 mg, 60 enteric coated vegetarian tablets
- 02429 Theanine XR™ Stress Relief

MULTIVITAMINS

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

NERVE & COMFORT SUPPORT

- 02202 ComfortMAX™
- 02303 Discomfort Relief

PERSONAL CARE

- 01006 Biosil™ • 5 mg, 30 veg capsules
- 01007 Biosil™ • 1 fl oz
- 00321 Dr. Proctor's Advanced Hair Formula
- 00320 Dr. Proctor's Shampoo
- 02322 Hair, Skin & Nails Collagen Plus Formula
- 01278 Life Extension Toothpaste
- 00408 Venotone
- 00409 Xyliwhite Mouthwash
- 02304 Youthful Collagen
- 02252 Youthful Legs

PET CARE

- 01932 Cat Mix
- 01931 Dog Mix

PROBIOTICS

- 01622 Bifido GI Balance
- 01825 FLORASSIST® Balance
- 02421 FLORASSIST® Daily Bowel Regularity
- 02125 FLORASSIST® GI with Phage Technology
- 01821 FLORASSIST® Heart Health
- 02250 FLORASSIST® Mood Improve
- 02208 FLORASSIST® Immune & Nasal Defense
- 02120 FLORASSIST® Oral Hygiene
- 02203 FLORASSIST® Prebiotic
- 02505 FLORASSIST® Probiotic Women's Health
- 01920 FLORASSIST® Throat Health
- 52142 Jarro-Dophilus® for Women
- 00056 Jarro-Dophilus EPS® • 60 veg capsules
- 21201 Jarro-Dophilus EPS® • 120 veg capsules
- 01038 Theralac® Probiotics
- 01389 TruFlora® Probiotics

SKIN CARE

- 80157 Advanced Anti-Glycation Peptide Serum
- 80165 Advanced Growth Factor Serum
- 80170 Advanced Hyaluronic Acid Serum
- 80154 Advanced Lightening Cream
- 80155 Advanced Peptide Hand Therapy
- 80175 Advanced Probiotic-Fermented Eye Serum
- 80177 Advanced Retinol Serum
- 80152 Advanced Triple Peptide Serum
- 80140 Advanced Under Eye Serum with Stem Cells
- 80137 All-Purpose Soothing Relief Cream
- 80139 Amber Self MicroDermAbrasion
- 80118 Anti-Aging Mask
- 80151 Anti-Aging Rejuvenating Face Cream
- 80153 Anti-Aging Rejuvenating Scalp Serum

- 80179 Brightening Peptide Serum
- 80176 Collagen Boosting Peptide Cream
- 80156 Collagen Boosting Peptide Serum
- 02408 Collagen Peptides for Skin & Joints
- 80180 CoQ10 and Stem Cell Rejuvenation Cream
- 80169 Cucumber Hydra Peptide Eye Cream
- 02423 Daily Skin Defense
- 80141 DNA Support Cream
- 80163 Eye Lift Cream
- 80123 Face Rejuvenating Anti-Oxidant Cream
- 80109 Hyaluronic Facial Moisturizer
- 80110 Hyaluronic Oil-Free Facial Moisturizer
- 80138 Hydrating Anti-Oxidant Facial Mist
- 00661 Hydroderm
- 55495 Instensive Moisturizing Cream
- 80103 Lifting & Tightening Complex
- 80168 Melatonin Advanced Peptide Cream
- 80114 Mild Facial Cleanser
- 80172 Multi Stem Cell Hydration Cream
- 80159 Multi Stem Cell Skin Tightening Complex
- 80122 Neck Rejuvenating Anti-Oxidant Cream
- 80174 Purifying Facial Mask
- 80150 Renewing Eye Cream
- 80142 Resveratrol Anti-Oxidant Serum
- 01938 Shade Factor™
- 02129 Skin Care Collection Anti-Aging Serum
- 02130 Skin Care Collection Day Cream
- 02131 Skin Care Collection Night Cream
- 80166 Skin Firming Complex
- 02096 Skin Restoring Ceramides
- 80130 Skin Stem Cell Serum
- 80164 Skin Tone Equalizer
- 80143 Stem Cell Cream with Alpine Rose
- 80148 Tightening & Firming Neck Cream
- 80161 Triple-Action Vitamin C Cream
- 80162 Ultimate MicroDermabrasion
- 80173 Ultimate Peptide Serum
- 80178 Ultimate Telomere Cream
- 80160 Ultra Eyelash Booster
- 80101 Ultra Wrinkle Relaxer
- 80113 Under Eye Refining Serum
- 80104 Under Eye Rescue Cream
- 80171 Vitamin C Lip Rejuvenator
- 80129 Vitamin C Serum
- 80136 Vitamin D Lotion
- 80102 Vitamin K Cream

SLEEP

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

- 01786 Melatonin 6 Hour Timed Release 3 mg, 60 veg tablets
- 01721 Optimized Tryptophan Plus
- 01444 Quiet Sleep
- 01445 Quiet Sleep Melatonin
- 02502 Rest & Renew

VITAMINS

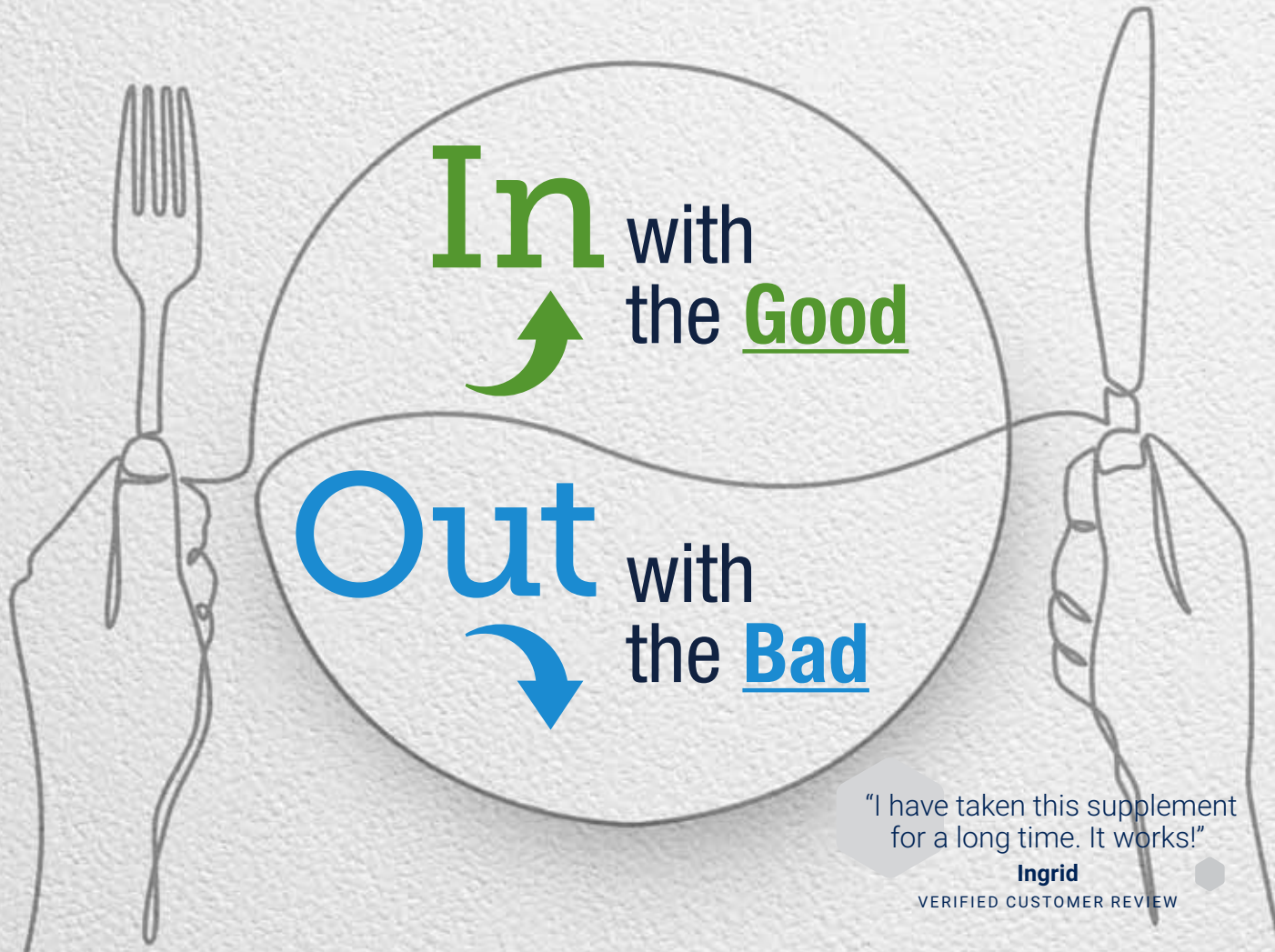
- 01533 Ascorbyl Palmitate
- 00920 Benfotiamine with Thiamine
- 00664 Beta-Carotene
- 01945 BioActive Complete B-Complex
- 00102 Biotin
- 00084 Buffered Vitamin C Powder
- 02229 Fast-C® and Bio-Quercetin Phytosome
- 02075 Gamma E Mixed Tocopherol Enhanced with
Sesame Lignans
- 02070 Gamma E Mixed Tocopherol & Tocotrienols
- 01913 High Potency Optimized Folate
- 01674 Inositol Caps
- 02244 Liquid Vitamin D3 • 50 mcg (2000 IU)
- 02232 Liquid Vitamin D3 (Mint) • 50 mcg (2000 IU)
- 01936 Low-Dose Vitamin K2
- 00065 MK-7
- 00373 No Flush Niacin
- 01939 Optimized Folate (L-Methylfolate)
- 01217 Pyridoxal 5'-Phosphate Caps
- 01400 Super Absorbable Tocotrienols
- 02334 Super K
- 01863 Super Vitamin E
- 02422 Vegan Vitamin D3
- 02028 Vitamin B5 (Pantothenic Acid)
- 01535 Vitamin B6
- 00361 Vitamin B12 Methylcobalamin
- 01536 Vitamin B12 Methylcobalamin • 1 mg, 60 veg lozenges
- 01537 Vitamin B12 Methylcobalamin • 5 mg, 60 veg lozenges
- 02228 Vitamin C and Bio-Quercetin Phytosome • 60 veg tablets
- 02227 Vitamin C and Bio-Quercetin Phytosome • 250 veg tablets
- 01753 Vitamin D3 • 25 mcg (1000 IU), 90 softgels
- 01751 Vitamin D3 • 25 mcg (1000 IU), 250 softgels
- 01713 Vitamin D3 • 125 mcg (5000 IU), 60 softgels
- 01718 Vitamin D3 • 175 mcg (7000 IU), 60 softgels
- 01758 Vitamin D3 with Sea-Iodine™
- 02040 Vitamins D and K with Sea-Iodine™

WEIGHT MANAGEMENT & BODY COMPOSITION

- 02479 7-Keto® DHEA Metabolite • 100 mg, 60 veg capsules
- 01807 Advanced Appetite Suppress
- 02207 AMPK Metabolic Activator
- 02504 Body Trim and Appetite Control
- 02478 DHEA Complete
- 01738 Garcinia HCA
- 02506 Mediterranean Weight Management
- 01432 Optimized Saffron
- 00818 Super CLA Blend with Sesame Lignans
- 02509 Waistline Control™

WOMEN'S HEALTH

- 01942 Breast Health Formula
- 01626 Enhanced Sex for Women 50+
- 01894 Estrogen for Women
- 01064 Femmenessence MacaPause®
- 02204 Menopause 731™
- 02319 Prenatal Advantage
- 01441 Progesta-Care®
- 01649 Super-Absorbable Soy Isoflavones
- 02507 Youthful Woman 40+ with B-Complex



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

Ingrid

VERIFIED CUSTOMER REVIEW

FLORASSIST® GI

for a Healthy Digestion

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

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



Dual-Encapsulation Delivery



Item #02125 • 30 liquid vegetarian capsules
1 bottle **\$24.75** • 4 bottles \$22.50 each

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

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

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

“Mainstay in my prostate health regimen.”

Rick

VERIFIED CUSTOMER REVIEW

PROSTATE HEALTH

The best way to keep YOU in the picture.

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

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

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



Item #02029 • 60 softgels

1 bottle \$29.25 • 4 bottles \$27 each

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

AprèsFlex® is a registered trademark of PLT Health Solutions–Laila Nutraceuticals LLC. HMRIignan™ is a trademark used under sublicense from Linnea S.A. Lyc-O-Mato® is a registered trademark of Lycored Corp. Graminex® is a registered trademark of Graminex LLC.

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.

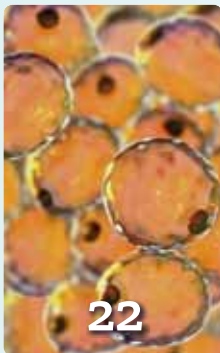


IN THIS EDITION OF *LIFE EXTENSION MAGAZINE*®



7 HUGE DISPARITIES IN HEALTHY LONGEVITY

A British study reveals **19-year** deficits in **healthy longevity** based on socioeconomic and behavioral patterns.



22 CITRUS EXTRACT REDUCES BELLY FAT

In two human trials, a new citrus extract **decreased** waist circumference up to **2.79 inches**.



30 CANCER-INHIBITING EFFECTS OF GYNOSTEMMA

Researchers have identified **anti-cancer** compounds in an Asian vine called *Gynostemma pentaphyllum*.



38 THE PROBLEM WITH SLEEP-AID DRUGS

A single dose of common sleeping pills such as Xanax® can suppress production of **melatonin** and create other health issues.



47 AFTER-MEAL BLOATING

Four plant compounds have been shown to relieve **after-meal bloating** and other GI disturbances.



52 NUTRIENTS THAT IMPACT IMMUNITY

Immune health can be improved with nutrients that function via multiple pathways.