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* If you have a thyroid condition or are taking antithyroid medications, do not use without consulting your healthcare practitioner.
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When Does Cholesterol Cause Heart Disease?

A genetic defect causes some Americans to have very high cholesterol levels.¹

These recent findings validate the desirability of keeping cholesterol-related blood markers in optimal ranges.

Since the late 1960s people have become more heart-health conscious. This contributed to sharp declines in midlife heart attack and ischemic stroke prevalence.⁴

Today’s dilemma is that those who escaped arterial blockages in midlife are encountering these issues as they age past 70 years. We are seeing this in maturing people who have otherwise followed a heart-healthy lifestyle. They sometimes fall victim to occlusive vascular disorders later in life.

One culprit is elevated levels of small dense LDL particles and related blood lipid factors.⁵,⁶

This editorial describes safer ways to bring dangerous lipids under control and new data about the risk statin drugs may pose to heart failure patients.

If these high cholesterol levels are not reduced, some victims require coronary artery stents or bypass surgery before age 50.¹

We present these data because there has been a debate about the artery-clogging risks posed by LDL cholesterol and its related sub-factors.

The public gets confused when they hear claims that cholesterol plays no role in coronary or cerebral atherosclerosis.

New studies show reductions in cardiovascular deaths and all-cause mortality over the long term when elevated LDL blood levels are reduced.²,³

WILLIAM FALOON

Cholesterol-related arterial blockage
Back in the 1980s, conventional cardiology did not consider LDL cholesterol (LDL) to be a risk factor until blood levels exceeded 159 mg/dL.7 We at Life Extension® argued back then that the optimal LDL level was under 100 mg/dL.

We were challenged by both sides.

Many alternative practitioners did not believe cholesterol was related to occlusive arterial disease, while the conventional crowd stuck to the argument that only people with LDL levels above 159 mg/dL were at highest risk.

The consensus today in most of the conventional world is that LDL blood levels should be below 100 mg/dL in normal aging people and below 70 mg/dL for individuals with higher atherosclerotic cardiovascular disease risk.

Some proactive cardiologists strive to use diet and medication to lower LDL to as little as 30 mg/dL in an attempt to control risk and possibly reverse atherosclerotic disease.

Why the Debate?

It is true, as many have argued, that many heart attacks occur in people with normal cholesterol or LDL cholesterol levels.

This is because cholesterol-related atherogenic risk factors are not the only ones. Multiple other abnormalities increase the risk of atherosclerosis that can lead to a heart attack or stroke.

In other words, arterial blockages can be initiated and promoted by factors other than excess LDL and various related lipid imbalances.

While elevated LDL does not explain all heart attacks and strokes, the role of blood lipids cannot be overlooked.

Low HDL (protective form of cholesterol) combined with elevated LDL, small dense LDL particles, and oxidized LDL all contribute to arterial blockages.

The Statin Drug Dilemma

Statin drugs robustly lower total cholesterol, LDL, and in some trials C-reactive protein. Statins have demonstrated cardiovascular risk-reducing effects in certain specific but large populations.8-10 Statins can cause some people to suffer muscle pain (myalgia) and other side effects when used at the higher doses commonly prescribed.

One of the world’s leading experts on heart failure and CoQ10 has published data on the dangers that statin drugs may present for heart failure patients.

We present info in this month’s issue of Life Extension® suggesting safer ways of lowering excess LDL without inflicting heart damage.

Practical Solutions

Other than in those with a genetic predisposition for very high cholesterol, artery-clogging lipids can be reduced by adhering to strict dietary patterns.

The problem is that few are willing to give up atherogenic foods that include saturated fats (and certain other fats like trans-fat) and high-glycemic starches/sugars.

A practical solution long advocated in this publication, and now supported by a recent clinical trial, indicates that one can achieve desired LDL blood levels by taking a modest statin dose and supplementing with coenzyme Q10.

Lower Dose Statin + CoQ10

A study published in 2019 evaluated participants who suffered from statin-induced muscle pain but needed a statin drug to control LDL cholesterol.

When the statin drug dose was reduced by 50% and CoQ10 supplementation initiated, patients experienced a 29% reduction in...
pain scores compared to baseline. They also achieved better cholesterol and LDL levels.\textsuperscript{11}

In this study, about 47% of the statin drug users in the CoQ10 group reported a reduction in muscle pain after three months, while only about 7% of statin drug subjects taking placebo (no CoQ10) experienced pain relief.

This study used a less effective form of CoQ10 (ubiquinone) that does not boost CoQ10 blood levels as much as the ubiquinol form of CoQ10, but nonetheless demonstrated remarkable benefits.

**CoQ10 Blood Levels**

The average baseline CoQ10 blood level in this study (showing reduced statin side effects) was a low 0.759 \text{ug/mL}. It increased to 0.875 \text{ug/mL} in those supplemented with 100 mg a day of ubiquinone.

Despite the modest 15% boost in CoQ10 blood levels, reductions in statin-induced side effects occurred, along with reduced total cholesterol and LDL in CoQ10-supplemented patients who cut their statin dose in half.

This study shows that reductions in statin drug dose along with CoQ10 therapy can yield similar LDL-lowering benefits and mitigate statin-induced myalgia.\textsuperscript{11}

Not all data indicate that statin drug doses can be cut in half, which is why low-cost blood tests should be utilized to individually manage blood lipid levels.

Studies reported on decades ago in *Life Extension*\textsuperscript{\textregistered} magazine indicate that people should strive for CoQ10 blood levels of around 3.0 \text{ug/mL}.\textsuperscript{12}

Those with heart failure should aim to achieve a CoQ10 blood levels of 4.0 \text{ug/mL} and higher.\textsuperscript{13}

Any reduction in energy production can cause cardiac dysfunction.

The authors suggest the existence of a clinical entity designated statin-associated cardiomyopathy and define it as:

"an impairment in heart muscle function secondary to statin drug therapy of a severity sufficient to cause HF [heart failure]."\textsuperscript{14}

Heart failure patients should ask their cardiologists about reducing (or eliminating) statin drug use and increasing their intake of a highly absorbable form of CoQ10 such as ubiquinol.

**Landmark Findings on Heart Failure Patients**

**Peter Langsjoen, MD,** is a practicing cardiologist based in Tyler, Texas. He has successfully used high-dose CoQ10 supplements to improve severe heart failure in his patients for decades.\textsuperscript{14-18}

Dr. Langsjoen is a vocal critic of doctors who continue to prescribe statin drugs to heart failure patients without CoQ10 supplementation.
Despite the frequency of cardiovascular disorders that occur in older population groups, the risk of heart attack and stroke in the elderly remains under-appreciated and under-treated.

For decades, Life Extension has argued that blood pressure levels have been allowed to remain too high and urged customers to target their blood pressure below 115/75 mmHg.

We fear the same may be true of atherogenic forms of cholesterol. Too many people are still neglecting to optimize their blood lipid levels.

Tell Your Doctor You Do Not Accept “Normal Aging”

Atherosclerosis is a pathological manifestation of aging.

Statin drugs deplete the body’s natural production of coenzyme Q10. This fact is universally accepted.

CoQ10 deficit inflicts horrific effects in cells throughout the body, particularly in the heart, brain and kidneys.\(^\text{11,19-23}\)

With aging, CoQ10 levels in the body decline.\(^\text{24}\)

Add the CoQ10-depleting impact of statin drugs, and the toxic impact of a CoQ10 deficit can become catastrophic.

**Aging and Cardiovascular Disease**

Elderly persons suffer epidemic cardiovascular diseases that include:

- Atrial fibrillation
- Aortic valve stenosis
- Slow or rapid heartbeat (bradycardia or tachycardia)
- Coronary artery and capillary occlusion
- Unstable atherosclerotic plaque
- Cerebral artery and capillary blockages
- Chronic heart failure
- Carotid artery stenosis
- Hypercoagulation
- Hypertension
- Vascular inflammation

**CoQ10 Decline with Age**

100%

95%

83%

73%

65%

68%

43%

Liver

Kidneys

Heart

20 years

40 years

60 years

80 years

Coenzyme Q10 levels decline with aging. For example, the heart of an 80-year-old person may only contain 43% of the CoQ10 it had at age 20.

It’s even been observed in ancient mummified bodies. Since people before year 1900 often died under age 50, heart disease was not a leading cause of death as it is today (when lifespans often exceed 80 years in health-conscious individuals).

Adequate protection against heart disease requires blood pressure control along with optimal levels of artery-damaging blood markers such as:

- Homocysteine
- C-reactive protein
- Glucose
- Insulin
- Triglycerides
- Healthy omega ratios
- Cholesterol markers such as: total cholesterol, LDL, small, dense LDL particles, apolipoprotein B, and oxidized LDL.

Most of you make a concerted effort to maintain robust whole-body circulation. This not only reduces mortality risk, but also enhances quality-of-life including healthy cognition.

I hope the data presented in this issue of Life Extension magazine will motivate more readers to optimize ALL cardiovascular risk factors.

In This Month’s Issue...

The article on page 50 describes Dr. Langsjoen’s research into the dangers of statin drugs in patients with chronic heart failure and how ubiquinol CoQ10 can enable dramatic improvements in these patients.

For those suffering advanced heart failure, the article on page 43 describes an experimental hypothesis that involves the removal of senescent cells in the heart. Published data suggest that toxic secretions from senescent cells impede the ability of cardiac progenitor cells to regenerate damaged heart muscles.25

If this concept proves effective, it might remove a biological roadblock that currently prevents cardiac function from being fully restored in heart failure patients.

According to a 2020 report by the American Heart Association one million Americans aged 55 and over are diagnosed with heart failure each year.26

Much of this is preventable in those who maintain healthy coronary artery circulation by keeping vascular risk factors in optimal ranges.

As you will read in this month’s issue, statin drugs are more toxic than most people realize, but so are atherogenic LDL cholesterol particles.

The encouraging news is that one can strike a balance to improve LDL status and reduce statin side effects, if a statin is needed.

The Lab Test Super Sale has been extended to October 5, 2020.

To view the many tests included in the Male or Female Panels, please turn to the next page.

To order blood tests call 1-800-208-3444 (24 hours) or log on to: LifeExtension.com/blood

For longer life,

William Faloone, Co-Founder
Life Extension Buyers Club
For those who question the atherogenic impact of cholesterol, half of men with familial hypercholesterinemia who are untreated will have a heart attack or suffer angina before they turn age 50. Some suffer cardiac disease in their 20s.¹

This genetic disorder (familial hypercholesterinemia) causes total cholesterol levels to exceed 300 mg/dL.

Men with familial hypercholesterinemia get coronary artery disease 20 years earlier, and women up to 30 years earlier than normal individuals.¹

When heart attack prevalence peaked around year 1968, cholesterol levels of around 300 mg/dL were not uncommon.

Those seeking healthy longevity, such as readers of Life Extension® magazine, should optimize all known risk factors, including elevated LDL and related atherogenic factors such as excess apolipoprotein B.

References

Male or Female Blood Test Panel at Low Lab Sale Prices

Commercial labs charge over $2,000 for blood tests needed to evaluate vascular, inflammatory, immune, and other degenerative risk factors.

Once a year, Life Extension® offers these same tests in comprehensive Male and Female Panels for $224... a savings of about 90%. (This year magnesium is added to the Male and Female Panels.)

**MALE PANEL**

**CARDIAC MARKERS**
- Apolipoprotein B (ApoB)
- Homocysteine
- C-Reactive Protein (high sensitivity)

**LIPID PROFILE**
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

**METABOLIC PROFILE**
- Glucose
- Insulin
- Hemoglobin A1c
- Serum Magnesium
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio

**COMPLETE BLOOD COUNT (CBC)**
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

**CANCER MARKER**
- PSA (Prostate Specific Antigen)

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

**NEW**
- MALE AND FEMALE PANELS include an assessment of vitamin D status called 25-hydroxyvitamin D.

**FEMALE PANEL**

**CARDIAC MARKERS**
- Apolipoprotein B (ApoB)
- Homocysteine
- C-Reactive Protein (high sensitivity)

**LIPID PROFILE**
- Total Cholesterol
- LDL (low-density lipoprotein)
- HDL (high-density lipoprotein)
- Triglycerides

**METABOLIC PROFILE**
- Glucose
- Insulin
- Hemoglobin A1c
- Serum Magnesium
- Kidney function tests: creatinine, BUN, uric acid, BUN/creatinine ratio
- Liver function tests: AST, ALT, LDH, GGT, bilirubin, alkaline phosphatase
- Blood minerals: calcium, potassium, phosphorus, sodium, chloride, iron
- Blood proteins: albumin, globulin, total protein, albumin/globulin ratio

**COMPLETE BLOOD COUNT (CBC)**
- Red Blood Cell count including: hemoglobin, hematocrit, MCV, MCH, MCHC, RDW
- White Blood Cell count including: lymphocytes, monocytes, eosinophils, neutrophils, basophils
- Platelet count

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

**NEW**
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Sleep is Important for the Immune System

Getting adequate sleep is important for well-being and health in many ways. Recently, a major international, interdisciplinary workshop sponsored by the National Institutes of Health highlighted the importance of sleep for regulating the immune system. A summary of the workshop was published in JCI Insight.*

Lack of sleep has been associated with an increased vulnerability to infection, reduced antibody titers (a measurement of the level of antibodies in the blood) after vaccination, and reduced lifespan.

Sleep deprivation has been shown to reduce the efficacy of the flu vaccine. And animal studies have demonstrated that sleep is connected to the body’s ability to resist infection.

Studies have revealed that sleep deprivation impairs the function of natural killer cells (part of the innate immune system). Lack of sleep also disrupts the circadian rhythm, which encourages inflammation and functional immunocompromise, making organisms more vulnerable to disease.

Editor’s Note: The authors concluded that, “While connections to adaptive immunity and neuroinflammatory reflexes represent some highly opportune areas for study in the present, there are many areas of disease physiology for which the insights of circadian and sleep biology have yet to be considered.”

Low Vitamin D Linked to Lower-Back Pain in Postmenopausal Women

A retrospective study reported in Menopause, the Journal of The North American Menopause Society, uncovered an association between deficient levels of vitamin D and disc degeneration, with resulting lower-back pain, in postmenopausal women.*

Researchers evaluated data concerning lumbar disc degeneration, serum 25-hydroxyvitamin D levels, and markers of bone turnover in 232 postmenopausal women.

Vitamin D levels of more than 30 ng/mL, categorized as normal, were present in 12.5% of the subjects, and severely deficient levels of less than 10 ng/mL were found in 12.9%.

Women who were severely deficient in vitamin D had higher scores for low-back pain and lower bone-mineral-density scores than the remainder of the participants. Decreased vitamin D levels were associated with increasing severity of disc degeneration.

Editor’s Note: “Smoking, severe vitamin D deficiency, lack of vitamin D supplementation, high body-mass index, and osteoporosis are associated with a higher prevalence of moderate to severe pain,” the authors concluded.

Eating More Olive Oil May Lower Heart Disease Risk

Higher consumption of olive oil is associated with a lower risk of heart disease, according to a study published in the *Journal of the American College of Cardiology.*

The study included more than 61,000 women from the Nurse’s Health Study and over 31,000 men from the Health Professionals Follow-up Study. Both studies lasted 24 years, and people completed food-frequency questionnaires at the beginning of the study, and every four years thereafter.

The results showed that people with a *higher* intake of olive oil had a 14% lower risk of cardiovascular disease and an 18% lower risk of coronary heart disease, compared to those who consumed less.

Higher intake was defined as greater than 0.5 tablespoons (or greater than 7 grams) per day. In addition, replacing just 5 grams per day of margarine, butter, mayonnaise, or dairy fat, with an equivalent amount of olive oil, was associated with a 5% lower risk of cardiovascular disease, and a 7% lower risk of coronary heart disease.

*Editor’s Note:* Potent antioxidant compounds called polyphenols contribute many of olive oil’s beneficial effects.

Adding Spices to Meals May Benefit Health

A recent study published in The Journal of Nutrition suggests that people may be able to lower post-meal inflammation by spicing up the food.*

In a crossover study, overweight men with risk factors for cardiovascular disease were provided with a high-fat, high-carbohydrate meal, with or without the addition of two grams or six grams of a mixture of basil, bay leaf, black pepper, cinnamon, coriander, cumin, ginger, oregano, parsley, red pepper, rosemary, thyme and turmeric. The experiment was repeated on two following days in which the administration of the meal/spice combinations were rotated among the participants to enable each to receive all three combinations during the study.

Blood samples collected prior to and hourly for four hours after the meal were analyzed for factors relating to inflammation. Four hours after consumption, the meal that contained six grams of the spices was associated with a reduction in the secretion of a proinflammatory cytokine known as interleukin-1beta.

Editor’s Note: Postprandial proinflammatory cytokine secretion, which describes the increase in inflammatory factors that occurs after consuming a high-fat or high-carbohydrate meal, is associated with an elevated risk of cardiovascular disease.

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**Enhanced IMMUNITY Against ALLERGIES and COLDS**

BY MICHAEL DOWNEY

**Allergies** and **colds** affect people of various age groups.

Drugs target symptoms without correcting underlying causes of these miseries.

Scientists have discovered **two** ingredients that **reduce the severity** of allergy and cold symptoms and help **prevent them** from occurring.

**Human** studies show that these ingredients lead to:\(^1,^3\)

- **55% decreased** cold and flu occurrence,
- **43% fewer** days with nasal congestion,
- **17% reduced** duration of cold and flu-like symptoms, and
- **47% increased** salivary immunoglobulin A, an antibody that provides immune defense against viruses and bacteria.

This article describes how one may reduce frequency and duration of allergy and cold symptoms.
Colds, Allergies, and Other Infections

American adults get an average of two to three colds annually, and as many as 30% of U.S. adults suffer from allergies. Sometimes it feels like we spend half our lives sneezing, coughing, and blowing our noses. This has a major impact on quality of life, but there’s a more serious danger: Allergies have been associated with other conditions, such as asthma, and sinus and ear infections.

Preventing and Reducing Symptoms

Medications provide mild relief of symptoms but do nothing to reduce the number of colds and allergy bouts per year or how long they last.

Side effects from these drugs can include drowsiness, constipation, headaches, rapid heartbeat, and sleep problems. One class of allergy drugs, anticholinergics, has even been linked to an increased risk of Alzheimer’s disease.

Scientists have identified two ingredients that help prevent colds, flu, and allergic episodes, and lessen the severity and duration of symptoms when they do occur.

The ingredients are:

- A dried yeast fermentate and
- A probiotic called *Lactobacillus rhamnosus CRL1505.*

Each of these ingredients boosts activity of immunoglobulin A (IgA), an antibody that provides immune defense against viruses and bacteria.

Discovery of Yeast’s Immune Benefits

The immune effects of yeast fermentate were discovered by accident.

A company in Cedar Rapids, Iowa, had been producing a specialized yeast culture when it became apparent that its factory workers—who were exposed to the yeast daily through inhalation—were taking far fewer sick days than its office workers.

Scientists took note. A pilot study showed that, compared to the office staff, the factory personnel had significantly higher levels of secretory IgA, an antibody that blocks pathogens from penetrating mucosal surfaces.

They also had increased activity of natural killer cells, immune cells that can kill cells infected with viruses.

The company went on to develop the dried yeast fermentate using a proprietary fermentation process and baker’s yeast. At least six placebo-controlled clinical trials have since validated its protection against allergies and colds.
Defense Against Allergies

Scientists first conducted a small pilot study on 25 healthy individuals, giving them either a placebo or 500 mg of dried yeast fermentate daily for five weeks during the beginning of allergy season.¹⁰

Seasonal allergies did not change in the placebo group.

In the group taking the yeast fermentate there were improvements. Half of the treated male volunteers reported a complete absence of allergy symptoms, which returned within two weeks once they stopped taking the yeast fermentate.¹⁰

Researchers then conducted a clinical study on 96 volunteers with a history of seasonal allergies and hay fever. Participants took either a placebo or 500 mg of dried yeast fermentate once daily.¹

The first six weeks of the 12-week study took place during the year’s highest pollen-count period. Compared to the placebo group, those taking yeast had 43% fewer days with nasal congestion. They also had a reduction in the severity of runny noses and nasal congestion.

By the study’s end, those taking yeast fermentate showed decreased levels of white blood cells in their nasal mucus, indicating reduced activation of allergy-triggering cells.¹

Yeast Fermentate Fights Colds and Flu

Scientists next set up two clinical studies to examine yeast fermentate’s effect on cold and flu-like symptoms.

In the first, they gave a daily dose of 500 mg of dried yeast fermentate to 116 people with a mean age of 37. The 12-week trial was conducted from January through March, during the height of cold and flu season.

At the end of the study, the yeast group had experienced a 13% reduction in the occurrence of cold or flu-like symptoms (including headache, fever, general aches and pains, fatigue, nasal stuffiness, sore throat, cough, and chills) compared to the placebo group.¹⁴

The second study was virtually identical to the first, except that the 116 participants had an average age of 44. They received the same dosages of the dried yeast fermentate or a placebo and recorded the incidence and duration of symptoms.²

Compared to the placebo group, the yeast-treated group had 11% fewer incidences of common cold or flu-like symptoms, and a 17% reduction in the duration of symptoms.

WHAT YOU NEED TO KNOW

Defending Against Allergies, Colds, and Infections Year-Round

- Clinical studies show that a yeast fermentate and the probiotic Lactobacillus rhamnosus CRL1505 decrease the frequency, duration, and severity of allergy and cold symptoms.

- These ingredients also boost natural killer cell activity and immunoglobulin A (IgA) immune defenses against viruses and bacteria.

- Combining these two ingredients provides a safe and effective way for cold, flu, and allergy sufferers to improve their quality of life and may reduce risk of infection.
How Yeast Fermentate Works

Antibodies called immunoglobulin E (IgE) are a main cause of allergy symptoms. IgE causes the body to release chemicals, such as histamines, that trigger an allergic reaction and produce symptoms that affect the eyes, nose, throat, lungs, or skin.

In the small pilot study that first showed yeast fermentate’s ability to relieve allergy symptoms, blood levels of IgE steadily increased among placebo recipients as allergy season went into full swing, indicating heightened allergic responses.

In subjects taking the yeast, IgE levels barely changed, indicating a reduced allergic reaction.

The study concluded that yeast fermentate calms allergic responses by stabilizing IgE levels.10

Yeast’s ability to help prevent colds and flu comes from a different property. When given a single dose of 500 mg of dried yeast fermentate, volunteers had significantly increased activity of natural killer cells within just one hour.13 These immune cells specifically target and kill cells infected by viruses, such as those that cause colds and flu.

Healthy individuals given 500 mg of yeast fermentate daily also had a significant increase in salivary IgA, which defends against viruses and bacteria, after eight weeks.10

A Probiotic’s Cold and Flu Defense

Probiotics are beneficial live microorganisms. A specific strain of probiotic, the bacterium *Lactobacillus rhamnosus* CRL1505, was originally isolated from goat’s milk by scientists in northwestern Argentina.16

A series of studies showed that it decreased respiratory infections in children. Results were so impressive, the government of Argentina has been proactively providing *L. rhamnosus* CRL1505 to over 300,000 school children annually since 2008.3,16,17

Preclinical studies show that this probiotic strain may help fight the viruses and bacteria that cause the common cold, influenza, bronchitis, and pneumonia.17,18

A team of nutritionists, pediatricians, and immunologists designed a randomized, double-blind, placebo-controlled clinical trial. They enlisted 298 healthy male and female children between two and five years of age.3 This population is particularly susceptible to respiratory infections.

Five days a week, the treatment group was given 100 million CFU (colony-forming units) of *L. rhamnosus* CRL1505 in a yogurt drink. The placebo group received a drink without the probiotic.
Research shows that *L. rhamnosus CRL1505* significantly increases levels of secretory IgA, boosting the immune system’s initial ability to fight cold and flu viruses. Along with yeast fermentate, this probiotic has demonstrated a reduction in severity, frequency, and duration of cold and flu symptoms and may offer protection against infections.

**Summary**

**Allergies** and **colds** are more than an inconvenience. Human studies show that a **yeast fermentate** and the probiotic *Lactobacillus rhamnosus CRL1505* reduce the severity, occurrence, and duration of allergy, cold, and flu-like symptoms.

These two ingredients work in multiple ways to enhance **immune defenses** against viruses and bacteria.

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

After six months, when compared to the placebo group, the children in the **probiotic** group had experienced:

- **49% fewer** infections,
- **55% fewer** cases of cold or flu,
- **46% fewer** cases of fever,
- **47% increase** in levels of salivary IgA, and
- **33% less** need for antibiotic use.

The treatment group also had **61% fewer** cases of **tonsillitis** and **pharyngitis**, an infection in the back of the throat.³

**How the Probiotic Works**

*IgA* antibodies are a major part of the immune system. Secreted from **mucous membranes** in the mouth, nose, and lungs, they bind to respiratory viruses, blocking them from invading human cells and producing symptoms of colds and flu.
References

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<thead>
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<th>Vitamin/Coenzyme</th>
<th>Amount</th>
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<tr>
<td>5-MTHF (activated folate)</td>
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</tr>
<tr>
<td>Methylcobalamin (activated vitamin B12)</td>
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</tr>
<tr>
<td>Pyridoxal 5'-phosphate (activated vitamin B6)</td>
<td>100 mg</td>
</tr>
<tr>
<td>Riboflavin (vitamin B2)</td>
<td>25 mg</td>
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I have devoted my career as a cardiologist to finding ways to treat *atherosclerosis* — the buildup of *plaque* in artery walls.

I’ve relied primarily on healthy lifestyle changes, diet, and supplements.

A few years ago, a *human* study found that a combination of two *plant extracts* significantly reduced *arterial plaque* in the carotid arteries when added to diet, exercise, and healthy lifestyle counseling.¹

I have recommended these plant extracts to thousands of patients and have seen the favorable results firsthand.

Larger studies provide *new* evidence that arterial *calcification* and blockages are *reversible*. 
My Clinical Practice

I spent seven years after medical school completing my training in interventional cardiology or using catheters to treat heart disease.

Much of my practice involved inserting stents to prop open coronary arteries that were occluded with atherosclerotic plaque.

But three weeks into my first job, I decided there was a better, more comprehensive approach.

At that time, I read a study in a respected medical journal focusing on atherosclerosis, which often leads to heart attacks and strokes.

The study reported that atherosclerosis had been reversed using lifestyle and diet changes.2

Since then, I’ve combined interventional cardiology with a search for lifestyle and supplement-based methods to stabilize and reverse plaque buildup.

I was particularly impressed by a published study that reported on a combination of extracts of French maritime pine bark and an herbal extract called Centella asiatica.

When added to standard diet, exercise, and lifestyle counseling, these two plant extracts improved plaque stability and reduced size and numbers of arterial plaques.1

The study involved 50 patients with plaque in the carotid arteries, which supply blood to the brain, neck, and face. These patients had no history of cardiovascular events, and did not have diabetes or metabolic problems.1

Over the three-month study period, pine bark + Centella asiatica extracts reduced carotid artery plaque and lowered the number of plaques compared to a control group.

After these scientific findings were published, this pine bark-Centella extract combination became a routine part of my atherosclerosis reversal program.

The Evidence Mounts

I grew more convinced of the effectiveness of this plant combination when a larger, longer-term study was published in 2017.3

This time, 391 subjects were followed for four years. All had asymptomatic atherosclerosis of either the carotid artery or the femoral artery (which provides blood to the leg). Atherosclerotic lesions extended 50%-60% into the arteries in at least one location.

Three treatment groups were formed. One was treated with extract of pine bark alone, another was treated with pine bark and Centella asiatica, and a third control group received no extracts. All groups received standard diet, exercise, and lifestyle counseling.

The rate of plaque progression, measured by ultrasound, was significantly lower in both treatment groups than in the control group. The group that took the combination of the two extracts had the greatest reduction in progression of plaque thickness and length.

The extracts also had a favorable impact on cardiovascular outcomes as follows:

- The occurrence of angina, chest pain caused by reduced blood flow to the heart, was less than 3% in the two extract groups, compared with 6.25% in control patients.
- The rate of heart attacks was significantly lower for the combination therapy.
- Events requiring hospital admission occurred in 16.4% of control subjects, 8.9% of subjects using only French maritime pine bark extract, and just 3.3% of patients using the combination of pine bark and Centella extracts.
Pine Bark - *Centella* Extracts in Practice

I have used this combination with countless patients in my clinic who have plaques clogging their carotid arteries.

I use the *carotid intima-media thickness* (ultrasound) test to identify and track carotid plaque status. This test measures the thickness of the inner layers of the carotid artery, the *intima* and the *media*.4

*Increased* plaque means *greater* thickness, enabling this carotid ultrasound test to reveal atherosclerosis even in people with no symptoms.

I routinely observe reversal of plaque in patients taking the *pine bark + Centella extract* combination. I have even seen arterial age drop 10 to 20 years after only one or two years of therapy.

Preventing Arterial Plaque Progression

My use of these extracts has recently expanded again, based on data published in 2020. This Italian trial involved 84 normal weight to mildly overweight subjects with asymptomatic *atherosclerosis* in their *carotid* and *femoral arteries*, determined by high-resolution ultrasound.

These atherosclerotic subjects were treated with similar interventions as the studies already discussed. The duration of this trial was three years.5

Patients with an atherosclerotic plaque that was blocking less than 50% of an artery and those with an atherosclerotic plaque blocking more than 50% of an artery were included in this trial.

All patients were given diet, exercise, and lifestyle counseling.

One group received no additional treatment, a second took 100 mg a day of *aspirin*, and a third received the aspirin plus the combination of extracts of French maritime *pine bark* (150 mg/day) and *Centella asiatica* (450 mg/day).

At the end of the three years, more than 20% of patients in the *standard management* and the *aspirin* group had progressed to more severe and extensive atherosclerotic plaque.

Among patients treated with *aspirin + pine bark + Centella*, only 5.3% of patients experienced plaque progression.

In the diet, exercise, and lifestyle-counseling group, 22% suffered a cardiovascular event requiring hospitalization. That number declined to 12% in the *aspirin* group and to just 3.5% in the group taking aspirin plus the two *plant extracts*.

---

Reducing and Reversing Plaque Progression

- *Atherosclerosis* is the buildup of *plaque* in artery walls.
- A combination of two *plant extracts* significantly reduced *arterial plaque* in the carotid arteries.
- French maritime *pine bark-Centella asiatica* extracts prevent plaque progression.
- This combination of plant extracts may reverse the progression of *atherosclerosis*.

Oxidative stress, a driver of atherosclerosis, was measured in the blood of all subjects and was lower in the group taking the *pine bark* and *Centella* extracts. This makes sense since both these plant nutrients are free-radical scavengers.

Decrease of Coronary Artery Calcification

The same research team evaluated the efficacy of the *pine bark-Centella* combination in asymptomatic atherosclerotic patients with coronary artery *calcifications*.6

Patients with atherosclerosis in the *coronary arteries* — those that supply the heart with blood — can experience angina, shortness of breath, and even a heart attack.7
The study included three groups of 30 men each with asymptomatic coronary artery calcifications. Although they didn’t have angina or shortness of breath, the calcification in their arteries indicated progressive atherosclerosis.

All subjects received standard diet, exercise, and lifestyle counseling and took 100 mg/day of aspirin.

The first group received no additional treatment. The second added 150 mg/day of French maritime pine bark extract. The third used the combination of 150 mg/day pine bark and 450 mg/day of Centella asiatica extracts.

After one year, there was a 35% increase in the number of coronary artery calcifications in the group that received diet, lifestyle, and exercise counseling plus aspirin. In those also taking pine bark alone, new calcifications were halted.

In those using the pine bark + Centella there was a significant 10% decrease in the number of calcifications, a remarkable result.

Testing in Patients with Stents

To evaluate the impact of pine bark and Centella asiatica extracts on atherosclerotic plaque progression in stented arteries, 160 stented patients with partial arterial blockage due to atherosclerotic changes (as determined by ultrasound) were grouped into one of three treatment arms.

The study began 6-10 months after successful stent procedures, and patients were followed for 12 months. All groups received diet, exercise, and lifestyle advice along with anti-platelet medication and low-dose statin. A second group received, in addition, the pine bark extract; and a third group received extracts of pine bark and Centella.

After 12 months, progression of atherosclerotic lesions on inner artery walls occurred in 6.7 times more patients in the diet, exercise, lifestyle, and medication only group compared to the group that also received the combined pine bark + Centella extracts.

In fact, in just one year, nearly 60% of patients in the group that did not receive the plant extracts had marked progression of their atherosclerosis.

By contrast, among subjects who received the additional pine bark extract without Centella, only 18.5% experienced atherosclerosis progression.

Most remarkable of all, though, were the results in the pine bark + Centella extracts group. Just 8.9% of these patients had progression of atherosclerotic plaques.

In both groups that received extracts, there was a significant reduction in oxidative stress. No side effects or tolerability problems were observed with the plant extracts.

Summary

These studies consistently show that the combination of French maritime pine bark and Centella asiatica extracts slows and may reverse the progression of atherosclerosis.

The published findings reveal significant reductions in adverse cardiovascular outcomes.

I’ve observed these powerful results in my clinic as well.

The combination of these plant extracts (pine bark + Centella) has promise for millions of people with atherosclerosis.

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

Joel Kahn, MD, is the founder of the Kahn Center for Cardiac Longevity in Bingham Farms, Michigan.

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(Just 30 cents a day or less when 4 bottles are purchased)

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5. Saffron to help support vision, based on study subjects seeing an average of two additional lines on eye chart used by doctors to test vision.¹

References

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Heart failure occurs when the heart is unable to pump enough blood to fully oxygenate the body.

As it progresses, heart failure patients may lose the ability to walk, speak, or carry out basic activities without pausing for breath or stopping to rest.

In advanced stages, vital organs stop functioning. Unless the clinical course of chronic heart failure is reversed, death ensues.

According to a 2020 report by the American Heart Association, one million new heart failure cases are diagnosed in the U.S. each year.¹

Heart failure is associated with a cumulative burden of senescent cells that don’t function normally. Instead, senescent cells emit pro-inflammatory and protein-degrading factors that damage healthy heart cells.

In a compelling study, researchers found that the senolytic cocktail of dasatinib + quercetin cleared senescent cells effectively in lab cultures of human senescent heart tissue and promoted survival of crucial cardiac progenitor cells.²

Senolytics are a promising therapy that may allow the heart to heal itself.
Senescent Cells Damage the Heart

Old, dysfunctional senescent cells contribute to heart failure and prevent damaged heart tissue from healing.2,3

Among people older than 70 with cardiovascular disease, more than half of cardiac progenitor cells—cells capable of producing fresh, new heart muscle tissue—are senescent.2

In recent years, anti-aging research has increasingly focused on compounds called senolytics that remove senescent cells while leaving healthy cells to flourish.

Senolytics Slow Aging and Fight Disease

Many age-related diseases are associated with an accruing senescent cell burden.4-6

These aged, damaged cells accumulate in our tissues, refusing to die off. They instead secrete inflammatory molecules that damage surrounding healthy cells.

Within the last few years, scientists have discovered that compounds called senolytics have the power to selectively trigger senescent cells to self-destruct, while leaving most normal cells unharmed. Using senolytics to eliminate those “zombie” cells improves health and extends life in animals.7

Decreasing the senescent cell burden has been shown to:

- Reduce glucose levels, raise insulin sensitivity, lower inflammation, and improve kidney and heart function in obese mice,8
- Restore memory loss in a mouse model of Alzheimer’s disease and decrease the toxic proteins that make up the amyloid plaques found in the brains of Alzheimer’s patients,9
- Increase lifespan, promote youthful body type, and reduce age-related diseases in mice,10
- Reverse age-related damage to heart muscle, including stiffening and over-growth of tissue, in aged mice.11

Senolytics were initially studied in animals or lab cultures.

Recent human studies on the experimental senolytic cocktail—dasatinib and quercetin—have shown some early promise as an effective clinical therapy.

The First Human Study

Dasatinib is a prescription drug developed to treat certain forms of leukemia.12

It is on the latest report of the World Health Organization’s Model List of Essential Medicines.13

Quercetin is a bioflavonoid found in apples, honey, berries, onions, red grapes, cherries, citrus fruits, green leafy vegetables, tea, and other food sources.14

The combination of these two compounds has been used as senolytic therapy to eliminate senescent cells in multiple animal and lab studies.15

Scientists at the Mayo Clinic expanded this research into patients with idiopathic pulmonary fibrosis. This progressive lung disease, once diagnosed, carries a median survival of 3.8 years in adults aged 65 and over.16

Cellular senescence has been identified as a major contributing factor to this disease.

In a three-week study, 100 mg/day dasatinib and 1,250 mg/day quercetin, taken three consecutive days per week for three weeks, improved:15

- Distance walked in six minutes,
- Speed of gait in a four-meter walk, and
- Time to complete five consecutive stand-up/sit-down cycles on a chair.
None of the subjects experienced adverse effects requiring discontinuation of treatment.15

Though it was a preliminary study, it showed that the dasatinib-quercetin cocktail may have a positive impact on health.

**Dasatinib and Quercetin in Heart Failure**

Intriguing evidence that senescent cells are involved in cardiovascular disease has led scientists to look for ways to use senolytics to clear out those cells from heart muscle and restore youthful heart function.

In a compelling study, researchers from Kings College London and the Mayo Clinic tested the dasatinib-quercetin combination in lab cultures of human senescent heart tissue.2

The combination not only cleared senescent cells effectively, but also promoted survival of crucial cardiac progenitor cells, those that produce fresh, new heart muscle tissue.2

The researchers also tested the dasatinib-quercetin cocktail in an animal model of age-related human heart failure.

Previous mouse studies showed that this combination led to decreased numbers of senescent cells in heart muscle, aorta, lung, liver, bone, fat, and skeletal muscle.2

The treated mice also showed a burst of growth of fresh, new heart muscle cells that was accompanied by a sharp decrease in fibrosis (stiffening and thickening) of the main pumping chamber of the heart.2

In other words, the dasatinib-quercetin combination effectively cleared out senescent heart muscle cells, showing great promise for the maintenance of a healthy heart function.

None of the subjects experienced adverse effects requiring discontinuation of treatment.15

Urgent Need for Clinical Trials

**Chronic heart failure** remains a major threat for older Americans.

We’ve recently learned that aging heart muscle, like other tissues, is riddled with old, damaged cells that weaken cardiac function and contribute to heart failure.

Multiple studies show that removing senescent cells can make room for healthy, tissue-healing cells to emerge and function normally.

Studies indicate that a combination of two compounds, the drug dasatinib and the plant pigment quercetin may be effective in treating people suffering chronic heart failure.

Clinical trials are urgently needed as over 80,000 Americans die each year of heart failure.1

*Continued on next page.*
Summary

At this point, the dasatinib-quer-ecetin combination is still experimental. Anyone who uses it should report results to Life Extension® so we can include them in future issues.

Those concerned about taking a chemotherapy drug like dasatinib, even on the limited basis used in experimental research, have been using a black tea extract called theaflavins combined with high-dose quercetin on a once-weekly basis. Theaflavins function via some similar mechanisms as does dasatinib.17,18

Even more exciting, anticipated later this year is the introduction of bioavailable fisetin, a plant extract that some scientists believe may be the most effective senolytic compound.19

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

References

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Consumer Confusion about CHOLESTEROL and STATIN DRUGS

BY CHANCELLOR FALOON

Statin drugs remain controversial because they are often overprescribed and present side effects such as fatigue and muscle pain.

Few physicians advise their patients that statins deplete CoQ10 from the body.

Restoring healthy levels of CoQ10 through supplementation has been shown to alleviate side effects as well as reduce the symptoms of heart failure.

If you or someone you know is on a statin, this article can help the patient and their physician make more educated decisions.
Lifestyle factors including tobacco usage, unhealthy diet, and sedentary lifestyle are thought to account for as much as 80% of cardiovascular risk.2,4

The sum of published research shows that:
• Simple ways exist to diminish the most common statin-drug side effect,
• In high-risk individuals, statins do reduce heart disease deaths and mortality from other causes, and
• Comprehensive evaluation and control of cholesterol and other risk factors achieve the greatest reduction in heart disease risk.

Aging often results in an increase in cholesterol. This age-related increase in cholesterol is primarily composed of small, dense LDL particles, especially those oxidized, which promote the formation of harmful plaque in the arteries.5

As the decades add up, the damage inflicted by these cholesterol particles injures blood vessels, eventually obstructing blood flow to the heart muscle, brain, and other organs.6

If an aging individual with poor and worsening cholesterol does not want to make radical lifestyle and dietary changes, then proper statin drug therapy (usually at a much lower dose than commonly prescribed) should be considered.
CoQ10 Provides Support

A meta-analysis published in 2018 combined the results of 12 randomized, controlled trials that included a total of 575 patients.

This study concluded that coenzyme Q10 (CoQ10) supplementation ameliorated the muscle pain, cramps, weakness, and tiredness associated with statin drugs. It also showed that statins reduce CoQ10 levels by 16%-54%.14

In high-risk individuals (which includes a significant portion of the aging population), statin drugs help protect against cardiovascular disease,15 including coronary artery occlusion and cerebral vascular insufficiency. In some observational studies, statin use showed potential in slowing aortic stenosis progression.16 Statins also reduce CoQ10 levels.11

WHAT YOU NEED TO KNOW

Cholesterol and Statins

- Statins have clearly defined benefits for individuals at high risk for cardiovascular events.
- Statins lead to significant reduction in LDL (“bad”) cholesterol.
- The body’s levels of coenzyme Q10 are depleted by statins.
- Low CoQ10 blood levels have been associated with higher mortality in heart failure patients.
- Statins interfere with the synthesis of vitamin K2, which helps promote arterial health.

Reducing Statin Side Effects

Cholesterol is carried through the blood by transporters called lipoproteins, of which LDL (low-density lipoprotein) is one.

Statins lead to robust reductions in LDL (“bad”) cholesterol and decreases in C-reactive protein, a marker of inflammation.7

Statins have clearly defined benefits for high-risk individuals, but their use in prevention in low-risk individuals is not supported by that science.

Researchers and clinicians have pointed out that in individuals at low risk of cardiovascular events, side effects of statins outweigh benefits.1,8

Life Extension® was among the first to note that statin drugs were being overprescribed, often at unnecessarily high doses.

Statins deplete the body’s levels of coenzyme Q10, which causes many outward side effects, like muscle pain (myalgias) along with potential multi-organ damage.

Evidence also shows that statins interfere with the synthesis of vitamin K2.9,10

The encouraging news is muscle pain caused by statins can be significantly reduced with the addition of coenzyme Q10.11-14

The statin-induced decrease in coenzyme Q10 and vitamin K2 can be corrected by taking supplemental CoQ10 and vitamin K2.
Low CoQ10 blood levels have been associated with higher mortality in heart failure patients.\textsuperscript{17} Continuing research shows that CoQ10 supplementation can effectively boost levels of this heart-essential nutrient, improving outcomes for heart failure patients.

In a recent study, researchers selected 142 patients who developed heart failure while on statins.\textsuperscript{12} Of these patients, 94\% had diastolic heart failure (inability of their left ventricle to relax normally and properly fill) and 6\% had systolic heart failure (lack of their left ventricle contracting normally and pumping blood out into circulation).

The patients were taken off statins and put on an average dose of 300 mg/day of CoQ10. The study primarily used the ubiquinol form of CoQ10, which is more readily absorbed into the bloodstream than ubiquinone.

By the end of follow-up (mean 2.8 years) the number of patients who had no limitations of physical activity increased from 8\% to an astounding 79\%.

For the patients with diastolic heart failure who received CoQ10, at final follow-up:

- Approximately 34\% had complete normalization of diastolic function,
- 60\% had sustained improvement in diastolic function, and
- 25\% showed improvement but not normalization of diastolic function.

For the patients who had systolic heart failure, ejection fraction increased by a mean of 12\%.

Ejection fraction is the percentage of blood pumped out of the heart’s left ventricle with each beat. Measuring this percentage is essential to the proper evaluation and management of those with systolic heart failure.\textsuperscript{18}

### Why Early Statin Trials Were Short Term

Some critics of statins contend the research does not consistently show they reduce cardiovascular or all-cause mortality.

However, real-world obstacles stand in the way of long-term, placebo-controlled human trials designed to test the effects of statins or other interventions on mortality, which is the proof we need to establish a life-extending benefit.
A study evaluating human mortality would require many decades to produce meaningful results. Humans live longer than lab animals, which makes us more difficult to study, and makes such research prohibitively costly.

Other factors add to the complexity. People often change their diet, exercise, and lifestyle habits. Compliance with any nutritional or pharmaceutical intervention tends to be inconsistent. Additional confounding factors that are difficult to control are stress levels, environment, and individual genetics.

For these reasons, long-term, randomized, placebo-controlled trials of potentially life-extending interventions—such as statins—present an enormous challenge to the scientific community.

Newer Trials Show Reduced Mortality

But statin critics may be overlooking newer studies that are showing meaningful mortality benefits.

One large-scale meta-analysis published in 2016 showed that statins were significantly more effective for patients in reducing the odds of dying from coronary heart disease and from any cause, compared to control groups.21

Specifically, statin users had 31% lower odds of dying from coronary heart disease and 16% lower odds of dying from any cause, compared to controls.

20-Year Study Yields Robust Mortality Benefit

A study published in 2017 was one of the first to truly examine the impact of statin use over the long term.

This study analyzed evidence after the termination of a randomized, placebo-controlled statin trial. One arm of this study evaluated the effects of statins in men with LDL of 190 mg/dL or higher and without preexisting vascular disease.

This analysis divided a total of 5,529 men into two groups, those with LDL levels under 190 mg/dL and those with LDL levels at 190 mg/dL or higher.

The randomized, controlled phase of this trial was about five years and used a statin drug called pravastatin.

What makes this study significant is that the observational follow-up on patients was an additional 15 years, meaning the whole study population was followed for 20 years.22
At the end of the 20-year follow-up, an analysis was done comparing the placebo group to men with LDL ≥ 190 mg/dL and originally assigned to the pravastatin group in the initial trial. Here are the findings over this 20-year period:

- The risk of coronary heart disease mortality was reduced by 28% in pravastatin drug users,
- There was a 19% reduced risk of major adverse cardiovascular events (defined as the composite of cardiovascular death, non-fatal heart attack, and non-fatal stroke), and
- Cardiovascular death was reduced by 25% and all-cause mortality by 18% respectively, in people remaining on pravastatin over this 20-year period.

In the participants whose LDL was lower than 190 mg/dL, deaths from all causes including cardiovascular disease were also lower in the pravastatin group compared to the placebo group. The participants with LDL ≥190 mg/dL had greater reductions in cardiovascular and all-cause mortality from pravastatin treatment compared to placebo.

The average LDL cholesterol level dropped by 23.3% from its baseline value in the treatment group of those with LDL ≥190 mg/dL.

This 23.3% reduction is still a considerable distance from what is generally accepted as a healthy LDL range, which is below 100 mg/dL for primary prevention of cardiovascular disease in people with low risk.23

For people with high risk, such as individuals who have already suffered a cardiovascular event, some experts recommended that they achieve LDL levels below 70 mg/dL.24

If LDL cholesterol had been brought down even further in the patients in the 20-year study using pravastatin, the risk of cardiovascular events and all-cause mortality would likely have fallen with it.

It is important to note that these relatively recent studies were published after many decades of criticism were lodged against statin drugs. No one questions the side effects statins can inflict. Much has to do with excess dosing and prescribeing statins to patients who did not need them, and not advising patients to supplement with CoQ10 and vitamin K2.

Increased Risk When LDL Particles Are Small and Dense

A high number of small, dense LDL particles has been associated with elevated heart disease risk.30

The reason is that circulating, small, dense LDL particles easily penetrate and damage the blood vessel wall. In addition, they are more prone to atherogenic modification, including oxidation.31

Oxidized LDL damages the delicate endothelial cells lining the blood vessel wall.32 Once the integrity of the endothelial barrier is compromised, additional oxidized LDL accumulates behind the arterial wall.

A critical step in the development of atherosclerosis is the adhesion of monocytes (a type of white blood cell) to the endothelial cells that line the artery walls.33,34

These monocytes enter the blood vessel lining and develop into macrophages whose job is to engulf oxidized LDL cholesterol. Accumulation of oxidized LDL particles in the macrophage leads to the formation of foam cells.33,34

The accumulation of foam cells, along with the proliferation of smooth muscle cells and excess connective tissue, are key drivers of atherosclerosis.33,34

Foam cells play a central role in the inflammation that drives the atherosclerosis process.35
Despite intensive educational efforts, apolipoprotein B blood tests are not routinely incorporated into primary care medicine. The tragic result is a failure to prevent heart attacks, strokes, and other occlusive arterial diseases.

For Life Extension® readers, this problem was resolved when apolipoprotein B was added to the comprehensive Male and Female Panel blood tests they undergo each year.

Summary
Published data define the importance of maintaining optimal LDL and HDL cholesterol levels to lower heart disease risk.

Statins can help keep cholesterol levels in optimal ranges in those for whom diet and lifestyle measures aren’t enough.

To achieve the most significant heart disease risk reduction, one must monitor and address every risk factor related to heart diseases. That includes testing for apolipoprotein B and other atherogenic risk factors.

Controlling the vascular damage created by elevated LDL cholesterol levels is challenging. Altering one’s diet to reduce excess saturated fat intake might enable a lower statin drug dose to achieve optimal cholesterol levels.4,36-38

Anyone using a statin must ensure their coenzyme Q10 levels are not compromised.

This can be achieved by taking 100-200 mg a day of CoQ10, preferably the ubiquinol form. CoQ10 should be taken with the heaviest meal of the day that contains some fat, to facilitate its absorption.

Those with heart failure usually need to take around 400 mg of ubiquinol a day to achieve optimal CoQ10 blood levels.

Recent data also point to the value of vitamin K2 use with statin drugs. For those interested in supplementing with vitamin K who are taking Coumadin® or Jantoven® (warfarin), please discuss with your doctor first. The box on the next page describes what some warfarin users are doing to supplement with low-dose vitamin K2 under physician supervision.

These steps can lessen the side effects of statins and help to lower the risk of cardiovascular disease.

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
CONSUMER CONFUSION ABOUT CHOLESTEROL AND STATIN DRUGS

References


Vitamin K Antagonists, Food Sources of Vitamin K, and INR Variability

Warfarin is a drug that inhibits unwanted coagulation by interfering with vitamin K activity in the liver.

A frequently encountered problem with patients prescribed warfarin, a vitamin K antagonist, is the variability of INR.

INR (international normalization ratio) is a measure of warfarin's effect upon the tendency of the blood to clot through the extrinsic clotting pathway. This can be due to variation of dietary intake of rich food sources of vitamin K (e.g. green leafy vegetables).

Too much vitamin K can diminish the anticoagulant effects of warfarin and produce unstable INR measurements.

In patients receiving warfarin with a goal INR of 2-3, the addition of low-dose oral vitamin K supplementation may help increase INR stability.

Some published research suggests that low-dose (around 45 mcg) vitamin K may help improve the stability of INR measurements—however, such a strategy should only be contemplated after full discussion with a patient's physician and frequent blood testing (to include INR) to assess for the intended effect (i.e. INR stability).

Warfarin users seeking more details about this should log on to: LifeExtension.com/warfarin
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Suggested dose is one capsule a day with or without food, or as recommended by a healthcare practitioner.

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About 20% of Americans do not feel energized throughout the day.

So much so that it interferes with normal life.¹

Despite adequate sleep and nutrition, this feeling of fatigue results in complaints ranging from depression, to physical weakness, and body pain.

Scientists have found that an extract of French oak wood contains compounds that fight fatigue by working at the cellular level.³
In human studies, an oak wood extract reduced symptoms of fatigue, including weakness and exhaustion.\textsuperscript{3-5} Among the most significant results, this extract led to a:\textsuperscript{6}

- 44% reduction in un-refreshing sleep,
- 63% reduction in muscle pain,
- 51% reduction in joint pain,
- 51% reduction in sensitivity to noise, foods, medications, and chemicals,
- 58% reduction in depression, and
- 49% reduction in mood swings.

This can help people with chronic fatigue syndrome or with less severe symptoms of fatigue.

How Oak Wood Works

Oak trees are known for their strength and durability. They can live for centuries.

Their resilience comes, in part, from their production of compounds called roburins. These are protective tannins found only in oak trees.\textsuperscript{7}

Researchers have recently studied how roburins affect human cells.

They discovered that roburins modulate genes involved in the production of ribosomes,\textsuperscript{8} tiny cellular structures that create proteins and are closely involved in the functioning of every tissue, organ, and system.\textsuperscript{9-11}

Fighting Fatigue

A team of Italian scientists conducted a study to assess the effects of oak wood extract in people with fatigue.\textsuperscript{6}

One group of patients was treated with 200 mg daily of French oak wood extract for at least six months. A second group received no treatment.

The oak wood extract group experienced a:\textsuperscript{6}

- 44% reduction in un-refreshing sleep,
- 18% reduction in weakness and exhaustion,
- 29% reduction in short-term memory impairment,
- 63% reduction in muscle pain,
- 51% reduction in joint pain,
- 51% reduction in sensitivity to noise, foods, medications, and chemicals,
- 58% reduction in depression, and
- 49% reduction in mood swings.

Untreated patients showed no significant changes.

The patients taking the oak wood extract were also found to have a:\textsuperscript{6}

- 51% reduction in sensitivity to noise, foods, medications, and chemicals,
- 38% reduction in dizziness,
- 58% reduction in depression,
- 49% reduction in mood swings,
- 40% reduction in weight fluctuation,
- 24% reduction in alcohol intolerance,
- 39% reduction in allergies, and
- 29% reduction in visual disturbances.

The participants were then evaluated using a standardized mood scale.
Patients taking oak wood extract had significant reductions in negative items such as feeling gloomy, fed-up, grouchy, sad, or tired. These patients also reported significant increases in positive items, like feeling active, happy, peppy, caring, calm, and loving.

On this scale, average overall mood scores in treated subjects rose from -6.93 at baseline to +4.32 after six months. For the untreated group, the average score only rose from -6.5 to -3.4.

**Alleviating Mononucleosis-Related Fatigue**

It's often difficult to pinpoint a cause of fatigue. But a common one is infectious mononucleosis, or “mono.” Though it’s most widespread among teenagers, it can strike at any age, and affects older adults with intense symptoms such as fatigue and body pain.

Scientists designed a clinical study to specifically evaluate the impact of oak wood on these symptoms.

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**Oak Wood Relieves Fatigue**

- Over 836,000 people in the U.S. may have chronic fatigue syndrome, a debilitating condition with no established treatment. Many people simply feel tired so much of the time that it interferes with their ability to function.

- Scientists have recently shown that compounds in oak wood extract known as roburins can help with the symptoms of chronic fatigue.

- These compounds boost production of ribosomes, our cellular protein factories.

- A standardized French oak wood extract has been shown in clinical trials to significantly alleviate many fatigue-related symptoms caused by a variety of conditions.
All enrolled patients had recently experienced an episode of infectious mononucleosis that led to fatigue, high levels of oxidative stress, feelings of unwellness, and diffuse body pain.

For four weeks, all patients received a program of diet and sleep hygiene counseling, along with a multi-vitamin supplement. One group also received 300 mg of oak wood extract daily.13

After four weeks, reductions in fatigue, malaise, body aches, and swollen neck lymph nodes were all significantly lower in the oak wood extract group compared to controls. Additionally, participants who received oak wood extract were able to return to normal activities 44% sooner than controls.

Also, after four weeks, high levels of oxidative stress were present in over 50% of controls but in only 16.6% of oak wood extract recipients. Importantly, levels of inflammation-related white blood cells were significantly lower after four weeks in the oak wood extract group, and fewer in the oak wood group had excessive numbers of leukocytes, a specific type of white blood cell.13

Targeting Burnout

Fatigue and exhaustion are characteristic symptoms of burnout, a syndrome resulting from chronic workplace stress.14

To evaluate the effects of oak wood extract on this condition, scientists selected 108 people with burnout syndrome. For four weeks, half of them received 300 mg of the extract daily, while the others did not. All 108 received dietary counseling, one gram of vitamin C per day, supplemental minerals including magnesium, and electrolyte drinks.15

The groups taking oak wood extract had improved symptoms. Compared to the untreated group, they showed:15

• Reduced strain from interactions at work,
• More effectiveness in their work and work relationships,
• Decreased emotional drain and intolerance,
• Decreased need for giving up,
• Higher levels of satisfaction, and
• Greater enthusiasm and interest.

Oxidative stress was also significantly reduced in the treated group.16

Summary

Roburins from oak wood boost production of ribosomes needed for cellular protein synthesis.

Daily doses of 200-300 mg of roburins found in French oak wood extract have been shown to improve many fatigue-related symptoms and syndromes.

Human studies further demonstrate that this oak wood extract can reduce exhaustion, improve sleep, boost mood, and more. •
In 2015, the Institute of Medicine (now called the National Academy of Medicine) proposed an updated set of diagnostic criteria for chronic fatigue syndrome.\textsuperscript{16}

Three symptoms are required for diagnosis:

- A significant loss of the ability to engage in pre-illness levels of regular activities, that lasts for more than six months and occurs with serious and new-onset fatigue that isn’t a result of exertion, and that is not resolved after rest.

- Post-exertional malaise* (PEM) – symptoms get worse after physical, mental, or emotional exertion at levels that, before the illness, would not have been a problem. PEM often causes relapses that can last days, weeks, or longer. In some patients, something as simple as sensory overload (light and sound) can cause PEM. PEM symptoms typically get worse 12 to 48 hours after the activity or exposure.

- Unrefreshing sleep* – patients with CFS may not feel rested or better even after a full night of sleep.

At least one of the following two manifestations must also be present:

- Cognitive impairment* – problems with thinking, memory, attention, coordination, and information processing. Cognitive problems can be made worse by exertion, effort, prolonged upright posture, stress, or time pressure, and may seriously compromise a patient’s ability to work or attend school full-time.

- Intolerance of upright posture – certain symptoms get worse with upright posture, which can be measured with vital signs (heart rate and blood pressure, for instance), or head-up tilt testing. These symptoms include lightheadedness, fainting, increased fatigue, worsening of cognitive symptoms, headaches, or nausea. These symptoms improve, not necessarily completely, when lying down.

* These symptoms must be present at least half the time and be of moderate to severe intensity.

Additional common symptoms include:

- Muscle pain
- Joint pain without swelling or redness
- Headaches of a new type, pattern, or severity
- Swollen or tender lymph nodes in the neck or armpit
- A sore throat that is frequent or recurring
- Chills and night sweats
- Visual disturbances
- Sensitivity to light and sound
- Nausea
- Allergies or sensitivities to foods, odors, chemicals, or medications

Many patients have difficulty working, attending school, exercising, and carrying out daily activities.

Too often, doctors tend to overlook this condition, and up to 80% of those suffering from chronic fatigue syndrome may not receive an accurate diagnosis. Some physicians even regard its symptoms as largely psychological or imagined.\textsuperscript{2}

No effective drug exists to treat chronic fatigue syndrome. But French oak wood extract provides a safe way to relieve a number of these symptoms, without a prescription.
CONSTANTLY TIRED? OAK WOOD FIGHTS FATIGUE

References

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Dr. Ralph Moss is a renowned investigative medical journalist who has been exposing corruption within the cancer industry for over 40 years.

While working at Memorial Sloan-Kettering Cancer Center in the 1970s, he blew the whistle when the favorable results of a plant-based substance were covered up.

He was promptly fired.

Since that time, Moss has written 12 books and countless articles, and been featured on radio, webcasts, and TV shows, including "60 Minutes."

In his latest book, Cancer, Incorporated, Moss is once again calling attention to the corruption and lies that are the true "cancer" in the cancer industry, including the "revolving door" that exists between "Big Pharma" and the FDA.

He reveals the inside story of how the pharmaceutical industry has managed to manipulate every aspect of drug development and has bought and paid for good opinions about mediocre drugs by key oncology leaders.

He also provides evidence of how Big Pharma has paid millions to doctors to downplay drug side effects and play up non-existent benefits in rigged clinical trials.

In this interview with Life Extension®, Moss discusses how Big Pharma has hijacked the clinical-trial system, resulting in a flood of unproven, highly toxic, and outrageously priced drugs that have little to no benefit for the average patient.

— LAURIE MATHENA
**LE:** Are we making progress in the war against cancer?

**Dr. Moss:** We are told that steady progress is being made. In particular, it is said that the current system is producing effective ‘targeted’ drugs almost every day. New drugs are bringing a supposed “world without cancer” into view.

This is wishful thinking.

In fact, there is massive deception and manipulation underway, to convince us that steady progress is being made.

This is to get us to continue to consume—in fact, to demand—the products of the pharmaceutical industry, and to keep us from investigating less profitable treatments that could upset the multi-billion-dollar plans and ploys of the drug industry.

**LE:** What did a study published in the *Journal of Clinical Oncology* reveal about the effectiveness of conventional cancer drugs?

**Dr. Moss:** The authors reviewed 570 phase II single-agent studies involving over 30,000 patients, that were published between 2010 and 2012. They then looked at the response rates, progression-free survival and overall survival.

When it came to non-personalized cancer treatments, the results in numerous phase II trials were shocking:

1. The median overall response rate (tumor shrinkages) was **10.5%**.
2. The median progression-free survival was **2.7 months**.
3. The median overall survival was **8.9 months**.

Almost nothing that oncologists did would budge cancer’s stubborn bottom line.

But there was worse news. Even using the most advanced techniques, at some of the world’s finest hospitals, some patients were still dying from the treatment itself.

In these carefully controlled clinical trials, with billions of dollars riding on the outcome, the drug-related death rate on average was **2.3%**.

The authors suggested the obvious, that this was “perhaps because of the known adverse effects often accompanying the administration of cytotoxic agents.”

**LE:** How has Big Pharma changed what it means for a drug to be “effective”?

**Dr. Moss:** Very few treatments are proven to deliver any actual benefit to cancer patients. That is because they are based on dubious measurements, or what scientists call surrogate endpoints.

The *NCI Cancer Dictionary* defines a surrogate endpoint this way: “In clinical trials, [it is] an indicator or sign used in place of another to tell if a treatment works. Surrogate endpoints include a shrinking tumor or lower biomarker levels. They may be used instead of stronger indicators, such as longer survival or improved quality of life, because the results of the trial can be measured sooner.”

The use of surrogate endpoints may increase the speed and efficiency of getting new drugs to market. But many experts warn that these surrogate endpoints have little or nothing to do with actual patient benefit.

From the beginning, shrinking tumors was not a major goal itself, but simply a convenient tool for tracking a drug’s contribution to the real goal, which is increased overall survival with a good quality of life.

Surrogate endpoints are thus not a sufficient basis for the FDA to approve a new drug. They are not true indicators of how well a treatment works but are in fact...
unreliable substitutes that allow drug companies to gain rapid approval of unproven remedies.

**LE:** Why does Big Pharma rush the approval process, and why does the FDA allow accelerated approvals?

**Dr. Moss:** In drug development, every month counts. The profitability of a new drug is based on the company’s exploitation of its patents. A patent excludes anyone else from marketing that agent for 20 years. It is a legal monopoly. During that time, according to current U.S. law, one can charge patients whatever the market will bear.

It is not only cheaper to do smaller phase II trials, but such trials are much quicker to perform. A phase II trial generally takes about two years, while a phase III trial can take up to five. So, naturally, companies, and Big Pharma in general, are always trying to shorten the testing period by weakening the FDA’s requirements of proof.

It is often claimed that the FDA lowered its standards in order to speed effective new drugs to market. This was the takeaway message from the HIV/AIDS pandemic.

But fewer than half of the cancer drugs it approves actually extend survival, even by as little as one month. The other approvals merely promote the bottom line of Big Pharma, while providing an illusion of effectiveness to patients and doctors.

Since 1992, [the FDA] has given accelerated approval to drugs based on dubious markers of alleged benefit.

Why have they lowered their standards in this way? To quote MedPageToday: “The FDA does not make decisions in a vacuum—it is under constant pressure from politicians, pharmaceutical companies, and advocacy groups to speed up the drug approval process.”

**LE:** How are clinical trials rigged against the older population?

**Dr. Moss:** Cancer is largely a disease of seniors. At the same time, seniors only represent one third of the adult participants in cancer clinical studies.

What impact does advanced age have on the outcome of trials? Elderly people in a clinical trial are at increased risk of more frequent and severe side effects and are therefore more likely to need delays in their treatment or might even drop out or die.

There is evidence that many cancer drugs do not work as advertised in older patients. For example, a 2018 study of the cancer drug Xeloda found that patients aged 70 years or older experienced more serious adverse effects than younger patients. The drug dosage had to be reduced in one-third of the younger patients versus in 82.5% of the elderly ones.

In cases like this, the severe side effects of an experimental treatment almost certainly led to the death of some older participants. Beside the human tragedy, this would depress the survival rate and possibly cause a delay, suspension or cancellation of the trial. Thus, a drug’s proponents have a practical reason to keep the elderly out of their trial.

A 2018 study at The Mount Sinai Hospital, New York, found that elderly patients with metastatic bladder cancer who were treated in the community setting did much worse than patients enrolled in a clinical trial. Elderly patients treated in the community setting who were receiving chemotherapy had a survival of 8.5 months. But in the clinical trial, the median overall survival was 18.5 months.

At the very least, one cannot assume that a treatment that was approved based on a younger population will perform as expected in older people.

**LE:** Of course, there are financial ties between Big Pharma and medical doctors as well. Is anyone keeping tabs on this?

**Dr. Moss:** For details on payments by Big Pharma to American doctors you need to consult a U.S. government website named Open Payments.
I sincerely believe that we will never reach that universally desired “world without cancer” unless we root out the corruption that has overtaken much of the leadership of the oncology profession.

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

Dr. Ralph W. Moss has been writing about cancer treatments and the cancer industry since 1974. He is the author of 12 books and four film documentaries on cancer-related topics. Dr. Moss produces ‘Moss Reports.’ These 500+ page documents offer unbiased, up-to-date, and in-depth analysis of conventional, alternative, and complementary cancer treatments.

The Moss Reports website, www.mossreports.com, has a wealth of valuable information for cancer patients, caregivers, and industry professionals.

To order a copy of Cancer, Incorporated, call 1-800-544-4440 or visit www.LifeExtension.com

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Grow Fruit & Vegetables in Pots

BY AARON BERTELSEN

Whether you’re pinching a few sprigs of oregano to add to pasta sauce, gathering arugula and spinach for a leafy green salad, or simply enjoying cherry tomatoes straight from the vine—there’s nothing quite like vine-ripened, freshly picked produce grown in your own garden.

Many people believe they don’t have enough space to grow their own fruit and vegetables, but acclaimed gardener Aaron Bertelsen has just published a book showing that there’s no place too small to grow your own produce.

Grow Fruit & Vegetables in Pots is a how-to book that gives detailed information on growing produce everywhere, from window boxes, to Juliet balconies, to back patios.

The book provides practical advice on gardening basics (including choosing the correct containers, soil, and equipment), directions on growing specific produce (including tomatoes, eggplant, arugula, basil, and 21 others), and 50 simple recipes that feature those home-grown ingredients.

Growing your own produce allows you to eat seasonally, reduce waste, and include more fruit and vegetables in your daily diet—and Bertelsen shows that it’s something anyone can do.

The following pages contain four recipes from Grow Fruit & Vegetables in Pots, highlighting fresh ingredients like carrots, seasonal greens, fennel, dill, parsley, and many more.

—Laurie Mathena
OVEN-BAKED LENTIL SOUP WITH GREENS

SERVES 6-8
PREPARATION: 10 minutes
COOKING: 1 hour

2 litres/3½ pints (8 cups) chicken stock (broth) (or you could use vegetable stock/broth)
225 g/8 oz (1¼ cups) dried yellow split peas
225 g/8 oz (1¼ cups) dried green or brown lentils
4 carrots (about 450 g/1 lb), scrubbed, trimmed and chopped into 2.5-cm/1-inch pieces
4 celery stalks, chopped into 2.5-cm/1-inch pieces
1 leek, trimmed and chopped into 2.5-cm/1-inch pieces
2 bay leaves
1½ teaspoons ground cumin
½ teaspoon salt
1 teaspoon pepper
large bunch seasonal greens (about 250 g/9 oz), stripped away from any large stems, then sliced
chopped herbs, to garnish
crusty bread and butter, to serve (optional)

Preheat the oven to 180°C/350°F/Gas Mark 4.

Put the stock (broth), dried peas and lentils, vegetables, bay leaves, cumin, salt and pepper into a large heavy casserole dish (Dutch oven) and stir to combine. Cover and bake in the oven for 1 hour, or until the peas and lentils are tender.

Remove from the oven and fish out and discard the bay leaves. Stir through the seasonal greens until wilted. Just before serving, garnish with chopped herbs, then ladle the soup into warmed soup plates and serve with bread and butter, if desired.
Heat the oil in a large frying pan or skillet over medium heat. Add the onion, cover and leave for 10 minutes to sweat down, stirring every so often.

Meanwhile, prepare the globe artichokes, if using. Remove the leaves until only the innermost leaves and hearts remain. (You can keep the outer leaves to steam and then eat with vinaigrette or aioli – delicious.) Trim the stems and hard leaf remnants around the bottoms, and use a vegetable peeler to peel the stems, removing the tough exterior. Chop the hearts in half and use a spoon to remove the hairy chokes. Cut in half again so you are left with quarters of artichoke heart. If you are not using them immediately, rub with a little lemon juice to stop discoloration.

Add the garlic, spring onions (scallions), fennel, aubergine (eggplant), tomatoes (fresh and canned), artichoke hearts, vinegar, capers and pumpkin seeds to the frying pan with the onion, cover and simmer for 10 minutes, or until all the vegetables are tender but not too soft.

Add the herbs and cook, uncovered, for another 5 minutes to allow the flavours to combine. Season with salt and pepper and serve warm or at room temperature, spooned over toasted bread.

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**FENNEL, AUBERGINE AND ARTICHOKE CAPONATA**

**SERVES 4**

**PREPARATION: 20 minutes**

**COOKING: 25 minutes**

4 tablespoons rapeseed (canola) oil

½ onion, finely chopped

4 globe artichokes (or 200 g/7 oz prepared artichoke hearts in olive oil, drained)

lemon juice, to prevent discolouration (if using fresh artichokes)

2 cloves garlic, finely chopped

2 spring onions (scallions), chopped

1 small fennel bulb, trimmed and thinly sliced

1 aubergine (eggplant), peeled using a vegetable peeler, then cut into 1.5-cm/¾-inch dice

3 tomatoes, diced

4 tablespoons canned chopped tomatoes

4 tablespoons red wine vinegar

2 tablespoons capers, drained and rinsed

2 tablespoons toasted pumpkin seeds

1 tablespoon finely chopped basil

1 tablespoon finely chopped flat-leaf parsley

1 tablespoon finely chopped lemon thyme

salt and pepper

toasted bread, to serve
**SHAVED FENNEL AND APPLE SALAD WITH SMOKED MACKEREL**

**SERVES 2**

**PREPARATION:** 15 minutes, plus cooling

**COOKING:** 10 minutes

- 75 g/3 oz (½ cup) whole almonds, with skins on
- Grated zest and juice of 1 lemon
- 2 small fennel bulbs, trimmed and thinly sliced
- 2 apples, cored and diced
- 1 tablespoon capers, coarsely chopped
- 1 bunch dill, coarsely chopped
- 1 bunch flat-leaf parsley, coarsely chopped
- 175 g/6 oz smoked mackerel fillets

**FOR THE VINAIGRETTE**

- 1 tablespoon (apple) cider vinegar
- Juice of 1 lemon
- 1-2 tablespoons Dijon mustard
- 4 tablespoons olive oil
- ¼ teaspoon sugar
- Salt and pepper

Preheat the oven to 180°C/350°F/Gas Mark 4.

Put the almonds into a small roasting pan with the lemon zest and juice. Place in the oven and roast until the nuts are browned, about 10 minutes. Let cool, then coarsely chop.

Make the vinaigrette. Whisk together the vinegar, lemon juice, mustard, oil and sugar in a small bowl. Season with salt and pepper, and add a little more lemon juice or mustard, to taste.

Put the chopped almonds, fennel, apples, capers, dill and parsley into a bowl. Break up the mackerel fillets into chunks and add to the salad. Pour over the vinaigrette, toss gently and serve.
STUFFED ARTICHOSES

SERVES 6

PREPARATION: 20 minutes

COOKING: 30-35 minutes

6 large globe artichokes
juice of 1 lemon
100 g/3½ oz (1 cup) dried bread crumbs (preferably made with sourdough bread)
4 cloves garlic, finely chopped
good handful flat-leaf parsley, chopped
100 ml/3½ fl oz (scant ½ cup) white wine
good glug (1–2 tablespoons) of olive oil
200 g/7 oz podded (shelled) broad (fava) beans (½ cup prepared)
200 g/7 oz podded (shelled) peas (½ cup prepared)
salt and pepper

Wash the artichokes and remove the stems – you’re trying to create a stable bottom so they can stand up when you put them in the pan. Slice about 2.5 cm/1 inch off the top of each artichoke, then use a spoon to scoop out its hairy choke.

Put the artichokes into a large pan of water with half the lemon juice. Bring to a boil, then reduce the heat and simmer for 7–10 minutes for younger chokes, longer for older ones. Test for doneness with a fork: the choke should be firm but soft. Drain. (The cooking liquid is useful as a base for stock/broth or can be drunk for its health benefits.)

Meanwhile, prepare the filling. Put the breadcrumbs, garlic and parsley in a bowl with the wine, oil and the remaining lemon juice. Season well with salt and pepper and mix together thoroughly.

Place the artichokes upright in a shallow pan, making sure they are packed in snugly. Stuff the breadcrumb mix in between the leaves and also between the chokes themselves, packing it down.

Blanch the broad (fava) beans in a separate pan of boiling water for 3 minutes, then drain. When they are cool enough to handle, slip off the outer skins and mix with the peas. Stuff the bean and pea mixture in and around the artichokes.

Half-fill the pan with water (so the artichokes are half immersed) and place over low heat. Partially cover the pan and simmer for about 20 minutes, checking regularly for enough water that the chokes don’t burn. The breadcrumb will absorb the water, while the beans and peas steam.

Preheat the grill (broiler) to high. Using a slotted spoon, transfer the artichokes to a heatproof dish and grill for 10 minutes, or until the breadcrumbs are lightly browned.

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

Reprinted from Grow Fruit & Vegetables in Pots (Phaidon 2020).

Photo credit: Andrew Montgomery

To order a copy of Grow Fruit & Vegetables in Pots, call 1-800-544-4440 or visit www.LifeExtension.com

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The annual RAADfest longevity conference will be held online this year. This means you can view the entire event from the comfort and safety of your home.

The purpose of RAADfest is to provide the most current and relevant insights on age reversal in terms a general audience can understand and apply.

Founded in 2016, RAADfest has attracted international recognition by featuring the world’s leaders in the science of age reversal.

This year’s RAADfest features 3 days of world-class presenters speaking on all aspects of longevity, plus live interaction Q & A. You can view this live or recorded.

To view the incredible list of speakers, log on to www.RAADfest.com

Discounted advance pricing still available.

Preregistration for RAADfest 2020 is $147. It goes up to $247 when RAADfest begins.

Register for RAADfest at www.RAADfest.com or call 1-480-345-6554
Support Healthy Immune Function with WHEY Protein

**Whey protein**, packed with vital amino acids promotes **glutathione** synthesis.

**Glutathione** plays an important role in supporting **immune** balance in the body.1-3

Whey fractions help modulate a full range of healthy bodily functions.

References

For full product description and to order Whey Protein Concentrate, Whey Isolate, or Advanced Whey Isolate with Glutamine and Creatine, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

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**Choose the Best Whey for You!**

- **Whey Concentrate** (chocolate or vanilla flavor)
  - Pure whey with the water removed.
  - Contains 80% easy-to-digest protein.
  - Item #02260 Vanilla • Item #02261 Chocolate
  - 1 container $22.50 • 2 containers $19.95 each

- **Whey Isolate** (chocolate or vanilla flavor)
  - Filtered to reduce carbohydrates, lactose and fat.
  - Contains 98% protein with some lactose.
  - Item #02242 Vanilla+ • Item #02243 Chocolate+
  - 1 container $22.50 • 2 containers $19.50 each

- **Advanced Whey Isolate with Glutamine and Creatine**
  - A premium isolate for greater strength and exercise performance.
  - Item #02246 Vanilla+
  - 1 container $22.50 • 2 containers $19.50 each

Contains milk. Use these products as a food supplement only. Do not use for weight reduction.

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* Provon® is a registered trademark of Glanbia plc.

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.
Blueberry Extract

Blueberries provide health-boosting benefits shown to:

- Enhance heart health
- Maintain brain function
- Sustain healthy blood-sugar levels already within normal range
- Support smooth, firm skin
- Improve movement and coordination

Blueberry extract is more potent than the whole berry, providing greater metabolic support throughout the body and without the excess sugar of raw fruit.

Item #01214 • 60 vegetarian capsules
1 bottle $16.88
4 bottles $15 each

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

AuoraBlue® is a registered trademark of Denali Bio Technologies, Inc.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Oregano is an herb from the mint family that plays a prominent role in the Mediterranean diet. It has been used for hundreds of years to treat conditions ranging from diarrhea and indigestion to colds and muscle aches. More recently, when researchers at the U.S. Department of Agriculture compared 39 commonly used herbs, they found that oregano had higher free-radical scavenging activity than the other herbs tested.1

The same compounds that give oregano its distinctive flavor and aroma—like thymol and carvacrol—are also responsible for many of its health benefits. These include potent antiviral and antibacterial activity.

As scientists are exploring the health benefits of oregano, adding this unique herb to your diet can spice up any menu.

**Antiviral**

Several in-vitro studies have shown that two components of oregano have potential antiviral actions.

In one study, carvacrol inactivated norovirus within one hour. Norovirus is a highly contagious viral infection that is the main cause of the stomach flu.2

Another study showed that carvacrol and thymol inactivated herpes simplex virus—also within one hour.3

Oregano oil, which is a concentrated oil extracted from oregano leaves, has also been found to have antiviral activity against respiratory syncytial virus (RSV), a virus that causes respiratory infections.4

**Antibacterial**

Oregano has promising antibacterial properties. In one in-vitro study, oregano was found to have activity against 23 species of bacteria related to three genera (Staphylococcus, Micrococcus, and Bacillus).5

Another study showed that oregano essential oil was effective against different strains of Escherichia coli and Pseudomonas.6

One exciting study showed that oregano oil has significant antibacterial activity against 11 microbes that are resistant to drugs.7

**Incorporating Oregano in Your Diet**

When you add oregano to dishes like pasta sauce and salads, you’ll not only be adding a burst of flavor, you’ll be sprinkling in small amounts of beneficial nutrients like vitamin C, arginine, and minerals like calcium and potassium.

It could be especially beneficial when added to cooked meat, as one of the active ingredients in oregano—carvacrol—has been shown to reduce the formation of potentially cancer-causing heterocyclic amines, chemicals that form in cooked meat, by up to 78%.8

References
ZiNC
SUPPORTS YOUR FIRST LINE OF DEFENSE

Research shows zinc deficiency is common in aging populations—and may contribute to the decline of immune function.¹

Zinc supports and activates:

- **Natural killer** cell function²
- A healthy inflammatory response³
- **Thymic** function needed to make immune T-cells.

Life Extension® combines the superior bioavailability of **zinc monomethionine**⁴ with **zinc citrate** to provide 50 mg of these **absorbable** zins in a single capsule.

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

OptiZinc® is a registered trademark of InterHealth Nutritionals, Inc.

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

Item #01813 • 90 vegetarian capsules

1 bottle $6.75

References

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.
Humans don’t manufacture vitamin C internally, so it must be obtained through dietary sources or supplements.

**Vitamin C** is water soluble and needs to be constantly replenished.*

A highly absorbable form of **quercetin** complements vitamin C’s activity in the body.

Each tablet provides 1,000 mg of **vitamin C** and 15 mg of **Bio-Quercetin Phytosome**.

Item #02227 • 250 vegetarian tablets
1 bottle $22.50 • 4 bottles $20 each

For full product description and to order **Vitamin C and Bio-Quercetin Phytosome**, call 1-800-544-4440 or visit www.LifeExtension.com

* PloS Med. 2005 Sep;2(9):e307; author reply e309.
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<td>02020 Super Carnosine</td>
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<td>02023 Tart Cherry with CherryPURE®</td>
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<td>01500 PQQ Caps • 10 mg</td>
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<td>01992 MacuGuard® Ocular Support with Saffron</td>
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<td>01993 MacuGuard® Ocular Support with Saffron &amp; Astaxanthin</td>
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<td>01873 Standardized European Bilberry Extract</td>
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<td>02311 Clearly EPA/DHA Fish Oil</td>
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<td>00463 Flaxseed Oil</td>
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<td>01937 Mega EPA/DHA</td>
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<td>02218 Mega GLA Sesame Lignans</td>
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<td>01983 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans &amp; Olive Extract</td>
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01988 Super Omega-3 Plus EPA/DHA Fish Oil, Sesame Lignans, Olive Extract, Krill & Astaxanthin
01982 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract - 120 softgels
01985 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract - 60 enteric coated softgels
01984 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract - 120 enteric coated softgels
01986 Super Omega-3 EPA/DHA Fish Oil, Sesame Lignans & Olive Extract - 240 softgels
01812 Provinal® Purified Omega-7
01640 Vegetarian DHA

FOOD
02008 California Estate Extra Virgin Olive Oil
02170 Rainforest Blend Decaf Ground Coffee
02169 Rainforest Blend Ground Coffee
02171 Rainforest Blend Whole Bean Coffee
00438 Stevia™ Organic Liquid Sweetener
00432 Stevia™ Sweetener

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

HEART HEALTH
01066 Aspirin (Enteric Coated)
01842 BioActive Folate & Vitamin B12 Caps
01700 Cardio Peak™ with Standardized Hawthorn and Arjuna
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 (Dehydroepiandrosterone) 15 mg, 100 capsules
00335 DHEA (Dehydroepiandrosterone) 25 mg, 100 capsules
00882 DHEA (Dehydroepiandrosterone) 50 mg, 60 capsules
00607 DHEA (Dehydroepiandrosterone) 25 mg, 100 tablets (dissolve in mouth)
01689 DHEA (Dehydroepiandrosterone) 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 with Resveratrol

IMMUNE SUPPORT
00681 AHCC®
02302 Bio-Quercetin
01961 Enhanced Zinc Lozenges
01704 Immune Modulator with Tinofend®
00955 Immune Protect with PARACTIN®
02005 Immune Senescence Protection Formula™
29727 Kinoko® Gold AHCC
24404 Kinoko® Platinum AHCC
00316 Kyolic® Garlic Formula 102
00789 Kyolic® Reserve
01681 Lactoferrin (Apolactoferrin) Caps
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™ Turmeric Extract
00202 Boswellia
02467 Curcumin Elite™ Turmeric Extract • 30 veg capsules
02407 Curcumin Elite™ Turmeric Extract • 60 veg capsules
01804 Cytokine Supress® with ECGG
02223 Pro-Resolving Mediators
00318 Serraffzyme
01203 Specially-Coated Bromelain
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
00522 Glucosamine/Chondroitin Capsules
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 HepatoProtection Complex
01651 Calcium D-Glucarate
00550 Chlorella
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
### PRODUCTS

#### LONGEVITY & WELLNESS
- **00457** Alpha-Lipoic Acid
- **01625** Applewise Polyphenol Extract
- **01214** Blueberry Extract
- **01438** Blueberry Extract with Pomegranate
- **02270** DNA Protection Formula
- **02119** GEROPROTECT™ Ageless Cell™
- **02133** GEROPROTECT™ Longevity A.I.™
- **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
- **01637** Pycnogenol® French Maritime Pine Bark Extract
- **02210** Resveratrol
- **00070** RNA (Ribonucleic Acid)
- **02301** Senolytic Activator
- **01208** Super P-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 with Beta-Sitosterol
- **01790** PalmettoGuard® Saw Palmetto/Nettle Root Formula with Beta-Sitosterol
- **01837** Pomi-T®
- **01373** Prelox® Enhanced Sex for Men
- **01940** Super MiraForte with Standardized Lignans
- **01909** Triple Strength ProstaPollen™
- **02029** Ultra Prostate Formula

#### MINERALS
- **01661** Boron
- **02107** Extend-Release Magnesium
- **30731** Ionic Selenium
- **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
- **02312** Cortisol-Stress Balance
- **00987** Enhanced Stress Relief
- **01074** 5 HTP
- **01683** L-Theanine
- **02175** SAME (5-Adenosyl-Methionine) 200 mg, 30 enteric coated tablets
- **02176** SAME (5-Adenosyl-Methionine) 400 mg, 30 enteric coated tablets
- **02174** SAME (5-Adenosyl-Methionine) 400 mg, 60 enteric coated tablets

### MULTIVITAMINS
- **02199** Children's Formula Life Extension Mix™
- **02498** Comprehensive Nutrient Packs ADVANCED
- **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
- **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** PEA 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** Xylitolwhite Mouthwash
- **02304** Youthful Collagen
- **02252** Youthful Legs

### PET CARE
- **01932** Cat Mix
- **01931** Dog Mix

### PROBIOTICS
- **01622** Bifido GI Balance
- **01825** FLORASSIST® Balance
- **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
- **01920** FLORASSIST® Throat Health
- **52142** Jarro-Dophilus® for Women
- **00056** Jarro-Dophilus EPS® • 60 veg capsules
- **21201** Jarro-Dophilus EPS® • 120 veg capsules
- **01038** Theracol® 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 Tripeptide 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
- **80176** Collagen Boosting Peptide Cream
LEMOCT20p.indd   95

80101  Ultra Wrin
80162  Ultimate MicroDermabrasion
80161  Triple-
80141  DN
80156
80113  Un
80122  Nec
80109  Hya
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
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
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

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 Liquid Emulsified
02244 Liquid Vitamin D3 • 2,000 IU, 1 fl oz
02232 Liquid Vitamin D3 • 2,000 IU, 1 fl oz, mint
01936 Low-Dose Vitamin K2
01536 Methylcobalamin • 1 mg, 60 veg lozenges
01537 Methylcobalamin • 5 mg, 60 veg lozenges
00065 MK-7
00373 No Flush Niacin
01939 Optimized Folate (L-Methylfolate)
01217 Pyridoxal 5’-Phosphate Caps
01400 Super Absorbable Tocotrienols
02334 Super K
02335 Super K Elite
01863 Super Vitamin E
02028 Vitamin B5 (Pantothenic Acid)
01535 Vitamin B6
00361 Vitamin B12
02228 Vitamin C and Bio-Quercetin Phytosome
1,000 mg, 60 veg tablets
02227 Vitamin C and Bio-Quercetin Phytosome
1,000 mg, 250 veg tablets
01753 Vitamin D3 • 25 mcg (1,000 IU), 90 softgels
01751 Vitamin D3 • 25 mcg (1,000 IU), 250 softgels
01713 Vitamin D3 • 125 mcg (5,000 IU), 60 softgels
01718 Vitamin D3 • 175 mcg (7,000 IU), 60 softgels
01758 Vitamin D3 with Sea-Iodine™
02040 Vitamins D and K with Sea-Iodine™

WEIGHT MANAGEMENT & BODY COMPOSITION

00658 7-Keto® DHEA Metabolite • 25 mg, 100 capsules
02479 7-Keto® DHEA Metabolite • 100 mg, 60 veg capsules
01509 Advanced Anti-Adipocyte Formula
01807 Advanced Appetite Suppress
02207 AMPK Metabolic Activator
02478 DHEA Complete
01738 Garcinia HCA
01292 Integra-Lean®
01908 Mediterranean Trim with Sinetrol™-Xpur
01492 Optimized Irvingia with Phase 3™ Calorie Control Complex
01432 Optimized Safron with Satietreal®
00818 Super CLA Blend with Sesame Lignans
01902 Waist-Line Control™
02151 Wellness Code® Appetite 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
Immune Senescence Protection Formula

Support Your Aging Immune System

Three natural plant extracts—Cistanche, Pu-erh Tea, and Reishi Mushroom—have been shown to support more youthful immune function.

Cistanche
- Supports longer lifespan in animals.¹
- Optimizes ratios for key cells that indicate a more youthful immune system.¹

Pu-erh Tea
- Boosts natural killer and naïve T cells while decreasing interleukin-6 (IL-6).²

Reishi
- Helps reduce biomarkers of immune senescence.³

Item #02005 • 60 vegetarian tablets
1 bottle $28.50
2 bottles $26.50 each

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References
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FOR TIFY YOUR INTESTINAL FLORA

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Item #02125 • 30 liquid vegetarian capsules
1 bottle $24.75
4 bottles $22.50 each
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Long-term reductions in cardiovascular and all-cause mortality occur when elevated LDL cholesterol is reduced.

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A probiotic and yeast fermentate reduces the frequency of colds and flus by 55%.

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A cardiologist observes reduced arterial plaque in patients taking two plant extracts.

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A senolytic cocktail promotes cardiac progenitor cells that may help the heart heal itself.

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Supplementing with CoQ10 and vitamin K can reduce symptoms of heart failure and alleviate statin drugs’ side effects.

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French oak wood contains compounds that fight fatigue at the cellular level.

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