Prebiotic Improves Gut Health in 14 Days

CoQ10 Combats Heart Failure

How Silymarin Eases COPD

Shocking Facts Behind Today's Opioid Crisis

Carnosine Promotes Clear Eye Vision

Olive Oil Can Extend Human Lifespans

CoQ10 Combats Heart Failure

How Silymarin Eases COPD

Shocking Facts Behind Today's Opioid Crisis

Carnosine Promotes Clear Eye Vision
No Time Like The Present
to enjoy
SUPER $ALE

Super Sale is here and it’s the ONLY time of year to save
on every Life Extension® supplement, including BRAND NEW formulations!
Call 1-888-672-4344 toll-free or visit LifeExtension.com/SuperJan
So shop now!

QUALITY • SAVINGS • EVERYTHING

Life Extension®
AS WE SEE IT: FDA FUELED OPIOID EPIDEMIC
New reports reveal 300,000 Americans have died of overdoses since the FDA approved semi-synthetic opioid drugs like OxyContin®. Find out the FDA’s insidious role in approving these addicting drugs for routine pain relief and better ways to address inflammation and pain signals received by the brain.

OPIATE DRUGS

7 AS WE SEE IT: FDA FUELED OPIOID EPIDEMIC
New reports reveal 300,000 Americans have died of overdoses since the FDA approved semi-synthetic opioid drugs like OxyContin®. Find out the FDA’s insidious role in approving these addicting drugs for routine pain relief and better ways to address inflammation and pain signals received by the brain.

19 IN THE NEWS
Experts promote insurance for alternative pain treatments; AMPK enhances LDL benefits; opioid overdose antidote cost soars; olive oil boosts memory; vitamin D inhibits breast cancer; and supplements provide cancer defense.

19 IN THE NEWS
Experts promote insurance for alternative pain treatments; AMPK enhances LDL benefits; opioid overdose antidote cost soars; olive oil boosts memory; vitamin D inhibits breast cancer; and supplements provide cancer defense.

26 ROLE OF BIFIDOBACTERIA IN LONG-TERM HEALTH
With age, beneficial bacteria in the gut decline to just 5% of youthful levels. The impact is reduced protection against allergies, infections, respiratory disorders, and anxiety. New studies at UCLA School of Medicine show that a novel prebiotic boosts beneficial flora and reduces harmful intestinal bacteria.

59 RESEARCH UPDATE: MILK THISTLE MAY PROTECT AGAINST SECOND-HAND CIGARETTE SMOKE
According to the Centers for Disease Control, there is no acceptable safe level of exposure to second-hand smoke. Chronic obstructive pulmonary disease (COPD) is often caused by second-hand smoke. Milk thistle extracts may help protect against COPD.

66 COQ10 REDUCES HEART FAILURE DEATHS
Coenzyme Q10 works with conventional medications to improve cardiac function in heart failure patients.

76 GOVERNMENT-DRIVEN OPIOID EPIDEMIC
Today’s opioid crisis was caused by the pharmaceutical industry colluding with government agencies and Congress to downplay addiction risks.

85 ASK THE DOCTOR: SCOTT FOGLE
Dr. Scott Fogle explains helpful lab tests that assess health issues related to the stress and overeating of the holidays—from insulin resistance and blood-sugar tests to those for cortisol, thyroid function, and more.

91 SUPER FOODS: AVOCADOS
Avocados’ high fiber content and monounsaturated fats power its ability to promote beneficial gut bacteria, blunt blood-sugar spikes, lower inflammation, improve cholesterol profile, and enhance nutrient absorption.

95 PROFILE: HOW SHARING WEALTH CREATES PLANETARY HEALTH
Bert Ball, founder of an environmentally focused organization that donates $180 million in goods and materials to 5,000 nonprofit organizations and schools, thrives on his healthy lifestyle and supplement program.
Connect with Life Extension on the Web!

Facebook.com/LifeExtension
For instant access to special offers and promotions, product news, and exclusive health and wellness information.

Twitter.com/LifeExtension
For up-to-the-minute health tips, breaking industry news, and the latest updates in medical research.

Customer care is available to take your calls 24 hours a day, 7 days a week.

Visit the Life Extension Nutrition Center Store
- The Most Complete Line of Life Extension Supplements
- Blood Testing and Analysis
- Personal Consultation with Life Extension Product/Wellness Specialist

Nutrition Center of Florida, Inc.
5990 North Federal Highway,
Fort Lauderdale, FL 33308-2633 • 954-766-8144
Monday-Friday 9 am-8 pm, Saturday 9 am-6 pm, Sunday 11 am-5 pm

Publisher • LE Publications, Inc.
Editorial
Editor-in-Chief • Philip Smith
Executive Managing Editor • Renee Price
Medical Editor • Hernando Latorre, MD, MSc
Senior Copy Editor • Laurie Mathena
Senior Staff Writer • Michael Downey
Associate Writer • Garry Messick
Creative Director • Robert Vergara
Art Director • Alexandra Maldonado

Chief Medical Officer
Steven Joyal, MD

Scientific Advisory Board
Orn Adalsteinsson, PhD • Richard Black, DO • John Boik, PhD • Aubrey de Grey, PhD
Frank Eichhorn, MD • Deborah F. Harding, MD • Steven B. Harris, MD
Peter H. Langsjoen, MD, FACC • Dipnarine Maharaj, MD • Ralph W. Moss, PhD
Michael D. Ozner, MD, FACC • Jonathan V. Wright, MD, Xiaoji Wei, PhD

Director of Scientific Affairs
Anita Boddie, PhD, FACN, RDN

Contributors
Jonathan Chasen • Chancellor Faloon • Garry Messick • Linda Oppenheimer
Roger Price • Cynthia Rackov • Kyle Roderick • Jon VanZile

Advertising
Vice President of Marketing • Rey Searles • rsearles@lifeextension.com
National Advertising Manager • Leslie Stockton • 404-347-1755

Vice President of Sales and Business Development
Ron Antriasian • rantriasian@lifeextension.com • 781-271-0089

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

Customer Service: 800-678-8989
Email: customerservice@LifeExtension.com
Wellness specialists: 800-226-2370 • Wellness email: wellness@LifeExtension.com

At Life Extension Magazine® we value your opinion and welcome feedback.
Please mail your comments to Life Extension Magazine, Attn: Letters to the Editor, PO Box 407198, Fort Lauderdale, FL 33340 or email us: LEmagazine@LifeExtension.com

Ratings based on results of the 2017 ConsumerLab.com Survey of Supplement Users.
POWER UP!
TURN ON YOUR CELLULAR ENERGY

Optimized NAD+ Cell Regenerator™ combines 250 mg of nicotinamide riboside with resveratrol and other plant extracts.

For resveratrol to deliver functional results, it requires NAD+.

NAD+ levels plummet with age but increase in response to nicotinamide riboside.

For those already taking resveratrol, we also offer NAD+ Regenerator™ that provides 250 mg of nicotinamide riboside.

Optimized NAD+ Cell Regenerator™
Item #02145 • 30 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$50</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$30.60 each</td>
</tr>
</tbody>
</table>

Retail Super Sale Price
1 bottle $33.75
4 bottles $30.60 each

Non-GMO

NAD+ Cell Regenerator™
Item #02144 • 30 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$42</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$25.20 each</td>
</tr>
</tbody>
</table>

Retail Super Sale Price
1 bottle $28.35
4 bottles $25.20 each

Non-GMO

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

pTeroPure® and NIAGEN® are registered trademarks of ChromaDex, Inc., Patents see: www.ChromaDexPatents.com

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.
Gustavo Tovar Baez, MD, operates the Life Extension Clinic in Caracas, Venezuela. He is the first physician in Caracas to specialize in anti-aging medicine.

Ricardo Bernales, MD, is a board-certified pediatrician and general practitioner in Chicago, IL, focusing on allergies, bronchial asthma, and immunodeficiency.

Mark S. Bezzek, MD, FACP, FAARM, FAAEM, is board-certified in internal medicine, emergency medicine, and anti-aging/regenerative medicine. He is the director of Med-Link Consulting, which specializes in bioidentical hormone replacement therapy, natural alternatives, anti-aging, and degenerative diseases. He holds US patents for a multivitamin/mineral supplement, an Alzheimer’s/dementia compilation, and a diabetic regimen.

Thomas F. Crais, MD, FACS, a board-certified plastic surgeon, was medical director of the microsurgical center in Donetsk, Ukraine. Dr. Dzugan’s current primary interests are anti-aging and biological therapy for cancer, cholesterol, and hormonal disorders.

John DeLuca, MD, DC, was formerly chief of cardiovascular surgery at the Donetsk Regional Medical Center in Donetsk, Ukraine. Dr. Dzugan’s current primary interests are anti-aging and biological therapy for cancer, cholesterol, and hormonal disorders.

William Davis, MD, is a preventive cardiologist and author of Wheat Belly: Lose the Wheat, Lose the Weight and Find Your Path Back to Health. He is also medical director of the online heart disease prevention and reversal program, Track Your Plaque (www.trackyourplaque.com).

Martin Dayton, MD, DO, practices at the Sunny Isles Medical Center in North Miami Beach, FL. His focus is on nutrition, aging, chelation therapy, holistic medicine, and oxidative medicine.

John DeLuca, MD, DC, is a 2005 graduate of St. George’s University School of Medicine. He completed his internal medicine residency at Monmouth Medical Center in Long Branch, NJ, in 2008 and is board-certified by the American Board of Internal Medicine. Dr. DeLuca is a Diplomate of the American Academy of Anti-Aging Medicine and has obtained certifications in hyperbaric medicine, pain management, nutrition, strength and conditioning, and manipulation under anesthesia.

Sergey A. Dzugan, MD, PhD, was formerly chief of cardiovascular surgery at the Donetsk Regional Medical Center in Donetsk, Ukraine. Dr. Dzugan’s current primary interests are anti-aging and biological therapy for cancer, cholesterol, and hormonal disorders.

Patrick M. Fratellone, MD, is the founder and executive medical director of Fratellone Associates. He completed his internal medicine and cardiology fellowship at Lenox Hill Hospital in 1994, before becoming the medical director for the Atkins Center for Complementary Medicine.

Carmen Fusco, MS, RN, CNS, is a research scientist and clinical nutritionist in New York City who has lectured and written numerous articles on the biochemical approach to the prevention of aging and degenerative diseases.

Norman R. Gay, MD, is proprietor of the Bahamas Anti-Aging Medical Institute in Nassau, Bahamas. A former member of the Bahamian Parliament, he served as Minister of Health and Minister of Youth and Sports.

Mitchell J. Ghen, DO, PhD, holds a doctorate in holistic health and anti-aging and serves on the faculty of medicine at the Benemerita Universidad Autonoma De Puebla, Mexico, as a professor of cellular hemapoetic studies.

Gary Goldfaden, MD, is a clinical dermatologist and a lifetime member of the American Academy of Dermatology. He is the founder of Academy Dermatology of Hollywood, FL, and COSMESIS Skin Care.

Miguelangelo Gonzalez, MD, is a certified plastic and reconstructive surgeon at the Miguelangelo Plastic Surgery Clinic, Cabo San Lucas.

Garry F. Gordon, MD, DO, is a Payson, AZ-based researcher of alternative approaches to medical problems that are unresponsive to traditional therapies. He is president of the International College of Advanced Longevity Medicine.

Richard Heifetz, MD, is a board-certified anesthesiologist in Santa Rosa, CA, specializing in the delivery of anesthesia for office-based plastic/cosmetic surgery, chelation therapy, and pain management.

Roberto Marasi, MD, is a psychiatrist in Brescia and in Piacenza, Italy. He is involved in anti-aging strategies and weight management.

Maurice D. Marholin, DC, DO, is a licensed chiropractic physician and board-certified osteopathic family physician. While training at the University of Alabama, he completed fellowships in Clinical Nutrition and Behavioral Medicine. He is currently in private practice in Clermont, FL.

Prof. Francesco Marotta, MD, PhD, of Montenapoleone Medical Center, Milan, Italy, is a gastroenterologist and nutrigenomics expert with extensive international university experience. He is also a consulting professor at the WHO-affiliated Center for Biotech & Traditional Medicine, University of Milano, Italy and hon. res. professor, Human Nutrition Dept, TWU, USA. He is the author of over 130 papers and 400 congress lectures.

Philip Lee Miller, MD, is founder and medical director of the Los Gatos Longevity Institute in Los Gatos, CA.

Michele G. Morrow, DO, FAACP, is a board-certified family physician who merges mainstream and alternative medicine using functional medicine concepts, nutrition, and natural approaches.

Filippo Ongaro, MD, is board-certified in anti-aging medicine and has worked for many years as flight surgeon at the European Space Agency. He is considered a pioneer in functional and anti-aging medicine in Italy where he also works as a journalist and a writer.

Herbert Pardell, DO, FAAIM, practices internal medicine at the Emerald Hills Medical Center in Hollywood, FL. He is a medical director of the Life Extension Foundation.

Lambert Titus K. Parker, MD, is an internist and a board-certified anti-aging physician, practices integrative medicine from a human ecology perspective with emphasis on personalized brain health, biomarkers, genomics and total health optimization. He serves as the Medical Director of Integrative Longevity Institute of Virginia, a 501(c)3 Non-Profit Medical Research Institute. He also collaborates on education and research for Hampton Roads Hyperbaric Therapy.

Ross Pelton, RPh, PhD, CCN, is scientific director for Essential Formulas, Inc.

Patrick Quillin, PhD, RD, CNS, is a clinical nutritionist in Carlsbad, CA, and formerly served as vice president of nutrition for Cancer Treatment Centers of America, where he was a consultant to the National Institutes of Health.

Allan Rashford, MD, graduated from the University of Iowa Medical School. Upon completing medical training, he became chief of medicine at St. Francis Hospital in South Carolina, and he was later named president of the Charleston Medical Society.

Marc R. Rose, MD, practices ophthalmology in Los Angeles, CA, and is president of the Rose Eye Medical Group. He is on the staff of Pacific Alliance Medical Center, Los Angeles, and other area hospitals.

Michael R. Rose, MD, a board-certified ophthalmologist with the Rose Eye Medical Group in Los Angeles, CA, is on the staff of the University of Southern California and UCLA.

Ron Rothenberg, MD, is a full clinical professor at the University of California San Diego School of Medicine and founder of California HealthSpan Institute in San Diego, CA.

Roman Rozencwaig, MD, is a pioneer in research on melatonin and aging. He practices in Montreal, Canada, as research associate at Montreal General Hospital, Department of Medicine, McGill University.

Michael D. Seidman, MD, FACS, is the director of skull base surgery and wellness for the Adventist Health System in Celebration, FL.

Ronald L. Shuler, BS, DDS, CCN, RN, is involved in immunoncology for the prevention and treatment of cancer, human growth hormone secretagogues, and osteoporosis. He is board-certified in anti-aging medicine.

Paul Wand, MD, Fort Lauderdale, FL, is a clinical neurologist with special expertise in treating and reversing diabetic peripheral neuropathy and brain injuries from various causes.
Örn Adalsteinsson, PhD, is chairman of the Life Extension Scientific Advisory board. He holds a master’s and doctorate from the Massachusetts Institute of Technology (MIT). He has specialized in human therapeutics including vaccines, monoclonal antibodies, product development, nutraceuticals, formulations, artificial intelligence, hormones, and nutritional supplementation. He has also authored articles and contributed to peer-reviewed publications and served as an editor for the Journal of Medicinal Food.

Richard Black, DO, is a dedicated nuclear medicine physician practicing as an independent contractor out of Cleveland, Ohio. Dr. Black is board certified in internal medicine and nuclear medicine, and is licensed to practice medicine in multiple states throughout the United States.

John Boik, PhD, is the author of two books on cancer therapy, Cancer and Natural Medicine (1996) and Natural Compounds in Cancer Therapy (2001). He obtained his doctorate at the University of Texas Graduate School of Biomedical Sciences with research at the MD Anderson Cancer Center, focusing on screening models to identify promising new anti-cancer drugs. He conducted his postdoctoral training at Stanford University Department of Statistics.

Aubrey de Grey, PhD, is a biomedical gerontologist and Editor-in-Chief of Rejuvenation Research, the world’s highest-impact peer-reviewed journal focused on intervention in aging. He received his BA and PhD from the University of Cambridge in 1985 and 2000 respectively. Dr. de Grey is a Fellow of both the Gerontological Society of America and the American Aging Association and sits on the editorial and scientific advisory boards of numerous journals and organizations.

Frank Eichhorn, MD, is a urologist specializing in prostate cancer for 10 years. He has a private practice in Bad Reichenhall, Germany, and is prostate cancer consultant at the Urologische Klinik Castringius, Planegg, Munich. In his integrative approach to prostate cancer he works together with an international network of experts to improve treatment outcomes for prostate cancer patients with a special focus on natural and translational medicine.

Deborah F. Harding, MD, is founder of the Harding Anti-Aging Center. She is double board-certified in internal medicine and sleep disorder medicine. She also earned the Cenegenics certification in age management medicine. She is a faculty member of the new University of Central Florida Medical School.

Steven B. Harris, MD, is president and director of research at Critical Care Research, a company that grew out of 21st Century Medicine in Rancho Cucamonga, CA. Dr. Harris participates in groundbreaking hypothermia, cryoablation, and ischemia research. His research interests include antioxidant and dietary-restriction effects in animals and humans.

Peter H. Langsjoen, MD, FACC, is a cardiologist specializing in congestive heart failure, primary and statin-induced diastolic dysfunction, and other heart diseases. A leading authority on coenzyme Q10, Dr. Langsjoen has been involved with its clinical application since 1983. He is a founding member of the executive committee of the International Coenzyme Q10 Association, a fellow of the American College of Cardiology, and a member of numerous other medical associations.

Dipnarine Maharaj MD, MB, ChB, FRCP (Glasgow), FRCP (Edinburgh), FRCPath., FACP Dr. Dipnarine Maharaj is the Medical Director of the South Florida Bone Marrow Stem Cell Transplant Institute and is regarded as one of the world’s foremost experts on adult stem cells. He received his medical degree in 1978 from the University of Glasgow Medical School, Scotland. He completed his internship and residency in Internal Medicine and Hematology at the University’s Royal Infirmary.

Ralph W. Moss, PhD, is the author of books such as Antioxidants Against Cancer, Cancer Therapy, Questioning Chemotherapy, and The Cancer Industry, as well as the award-winning PBS documentary The Cancer War. Dr. Moss has independently evaluated the claims of various cancer treatments and currently directs The Moss Reports, an updated library of detailed reports on more than 200 varieties of cancer diagnoses.

Michael D. Ozner, MD, FACC, FAHA, is a board-certified cardiologist who specializes in cardiovascular disease prevention. He serves as medical director for the Cardiovascular Prevention Institute of South Florida and is a noted national speaker on heart disease prevention. Dr. Ozner is also author of The Great American Heart Hoax: The Complete Mediterranean Diet and Heart Attack Proof. For more information visit www.drozner.com.

Jonathan V. Wright, MD, is medical director of the Tahoma Clinic in Tukwila, WA. He received his MD from the University of Michigan and has taught natural biochemical medical treatments since 1983. Dr. Wright pioneered the use of bioidentical estrogens and DHEA in daily medical practice. He has authored or co-authored 14 books, selling over 1.5 million copies.

Xiaoxi Wei, PhD, is a chemist expert in supramolecular assembly and development of synthetic transmembrane nanoparticles with distinguished selectivity via biomimetic nanoscience. She has expertise in ion channel function and characterization. She founded X-Therma Inc., a company developing a radical new highway towards non-toxic, hyper-effective antifreeze agents to fight unwanted ice formation in regenerative medicine and reduce mechanical icing.
Bone-Building NUTRIENTS In a Tasty CHEWABLE TABLET

To obtain enough calcium and other bone-building nutrients requires swallowing four capsules a day.

You can now ingest these potencies with two Chewable Chocolate Tablets of the new Bone Restore.

You’ll be pleasantly surprised how good these Chocolate Chewables taste.

Just two of the new Bone Restore Chewable Tablets provide:
- Calcium: 700 mg
- Magnesium: 300 mg
- Silicon: 5 mg
- Boron: 3 mg
- Zinc: 2 mg
- Manganese: 1 mg
- Vitamin D3: 1000 IU

Note: Recent recommendations for supplemental calcium dosing are around 700 mg based on typical amounts of dietary calcium consumed.

ITEM # 02123 • 60 chewable tablets • Non-GMO • Retail price $22 • Super Sale price $14.85 • 4 bottles $12.83 each

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

Chew tablets before swallowing. Keep out of reach of children. Do not exceed recommended dose.

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.
Heroin is one of the most addictive substances on earth.

When deprived of opioid drugs like heroin or oxycodone, addicts endure harsh withdrawal that often requires medical intervention. The addict may then undergo long-term treatment to reduce odds of relapsing.¹

Recovering opioid addicts may not sleep properly for years. Relentless physical and mental cravings result in over 90% of treated users resuming opioid addiction.² The final exit for many is recovery or death. Opioid addiction has skyrocketed in the United States as have fatal overdoses.³

To meet the surging demand, synthetic opioids (like fentanyl) are smuggled into the United States. Those convicted of trafficking opioids can face decades of incarceration.⁴,⁵

What if, instead of risking prison, you duped the FDA into approving a synthetic opioid drug for routine pain relief?

That way doctors would widely prescribe your opioid drug with insurance companies paying for it. Having physicians inadvertently hook their patients creates a large base of addicts who will do anything to avoid the horrors of opioid withdrawal.

That’s what a pharmaceutical company accomplished when it got the FDA to approve their time-released oxycodone in 1995.⁶

With FDA’s approval in hand, the company launched a marketing campaign to mislead doctors and patients about the risk for addiction and abuse of their opioid drug.⁶

This article will open your eyes to facts that should have precluded OxyContin® from ever being approved for widespread use.

For those with persistent discomforts, help is available. Greater use of natural alternatives may reduce the growing population of Americans who become dependent on opioid drugs that are approved by the FDA.
As We See It

An estimated 100 million Americans suffer **chronic pain.**

Pain prevalence increases with age due partly to chronic **inflammatory** issues that exacerbate degenerative diseases such as arthritis and traumatic injury.

Opioid drugs provide immediate relief, but fail to correct the underlying **inflammatory** problem.

As pain sufferers become tolerant to narcotic drugs, they need to increase their dose. Increased dosage is required to keep their pain in abeyance and to satisfy their unintended addiction to the **synthetic opioid** their doctor prescribed.

Patients who thought they were going to take “pain pills” for a limited period find themselves hooked on a **narcotic** drug, something they might refuse if they knew of its **addiction** risk.

The complex factors that create **opioid addiction** are incompletely understood. The public gets confused when terms like “**detoxification**” are used to describe what an addict endures to get off opioid drugs.

As you’ll read next, opioid addiction is more difficult to cure than merely removing a “toxin.”

### How the Brain Gets Addicted

Brain cells contain **opioid receptors**. When a person takes an **opioid drug**, it quickly fills **opioid receptor sites** to relieve pain while inducing calmness and **euphoria** in many people.

Continued opioid drug use (be it heroin or oxycodone) causes opioid receptors to become desensitized in a way that often necessitates higher doses of the opioid drug to keep the brain from going into a **physical withdrawal**.

In the state of acute withdrawal, the opioid receptor sites in the brain scream for more **opioids**. With insufficient opioids, the addict can experience intense pain throughout their body that is already **agitated** because their desensitized **opioid receptors** are unable to transmit neuronal **signals** the addict needs to feel normal.

Acute withdrawal is a **physical** phenomenon that can require medical intervention to prevent possible death. During the acute and chronic withdrawal period, the opioid addict may be unable to achieve normal **sleep** and is likely to suffer from relentless discomfort and intense agitation, along with craving for **opioid drugs**.

Over a multi-year recovery period, the opioid receptor sites can become re-sensitized to the low levels of natural opioids produced in the body. This in turn slowly enables the opioid addict to regain a sense of normalcy.

Sleep deprivation, however, can last for years as the brain is unable to achieve sufficient relief from the anxiety because their opioid receptor sites were so damaged. Instant relief can be found by reaching for a **heroin** or **oxycodone** “fix,” which can ignite another vicious addiction cycle.

---

*Image: Recovering Opioid Addicts May Not Sleep Properly For Years*
The body produces natural opioids that help mitigate pain and reduce anxiety. There are not enough natural opioids produced, however, to compensate for the loss of receptor site sensitivity caused by prior abuse of the opioid drug.

Understanding how opioids create physical addiction makes the FDA’s approval of opioid drugs (like OxyContin®) all the more abhorrent.

How Heroin Abuse was Temporarily Curbed

In the 1960’s, compelling film footage of heroin addicts twisting and screaming as they were strapped to hospital gurneys was shown to high school students. This film footage vividly revealed the horrors that heroin addicts endure as they fight through the acute withdrawal phase.

These films often depicted addicts cooking heroin in rusty spoons and using dirty needles to inject it into their quivering bodies. The visual impact was significant.

Much of society back then viewed heroin (opioid) junkies with disdain. Educated individuals said no to needles and opioids.

The reason for the resurgence of addiction and overdose deaths is the FDA approved an opioid drug that was illegally marketed to physicians as a relatively “safe” pain reliever.

Where Today’s Opioid Epidemic Started

In the early 1990s, a company called Purdue Pharma developed a highly-addictive semi-synthetic opioid drug and named it OxyContin®. The company funded clinical trials showing that OxyContin® in long-acting form relieved pain for up to 12 hours with few of the side effects associated with opioid drugs.

The Food and Drug Administration (FDA) reviewed the company-funded clinical studies on the use of OxyContin® and approved it. The FDA was told that because OxyContin® was in a “time-release” tablet, it posed a lower threat of abuse and addiction.

The FDA reviewer (Curtis Wright, MD) who led the approval of OxyContin® left the FDA and within 2 years was working for Purdue Pharma. The FDA reviewer (Curtis Wright, MD) who led the approval of OxyContin® left the FDA and within 2 years was working for Purdue Pharma.

This kind of revolving door between the FDA and pharmaceutical companies has been previously exposed in this magazine, and more recently in the Washington Post and on the CBS TV program 60 Minutes.

We view this revolving door as deferred bribery or “business as usual” as it relates to how the FDA approves new drugs and allows dangerous ones to remain on the market.

Purdue Pharma heavily promoted their OxyContin® to primary-care physicians who had little training in the treatment of serious pain or in recognizing signs of drug abuse. OxyContin® rapidly became the instant fix for patients complaining of any kind of discomfort since the drug usually provided immediate relief.

OxyContin® does this by occupying the opioid receptor on brain cells. As pain returned, so did the patient for a refill of higher-dose OxyContin® to counteract the desensitized (less responsive) brain cell opioid receptors caused by their prior use of OxyContin®.

It did not take long for experienced drug abusers and novices to discover that chewing an OxyContin® tablet, crushing it and snorting the powder, or injecting it with a needle produced a high as powerful as heroin.

The body produces natural opioids that help mitigate pain and reduce anxiety. There are not enough natural opioids produced, however, to compensate for the loss of receptor site sensitivity caused by prior abuse of the opioid drug.

Understanding how opioids create physical addiction makes the FDA’s approval of opioid drugs (like OxyContin®) all the more abhorrent.

How Heroin Abuse was Temporarily Curbed

In the 1960’s, compelling film footage of heroin addicts twisting and screaming as they were strapped to hospital gurneys was shown to high school students. This film footage vividly revealed the horrors that heroin addicts endure as they fight through the acute withdrawal phase.

These films often depicted addicts cooking heroin in rusty spoons and using dirty needles to inject it into their quivering bodies. The visual impact was significant.

Much of society back then viewed heroin (opioid) junkies with disdain. Educated individuals said no to needles and opioids.

The reason for the resurgence of addiction and overdose deaths is the FDA approved an opioid drug that was illegally marketed to physicians as a relatively “safe” pain reliever.

Where Today’s Opioid Epidemic Started

In the early 1990s, a company called Purdue Pharma developed a highly-addictive semi-synthetic opioid drug and named it OxyContin®. The company funded clinical trials showing that OxyContin® in long-acting form relieved pain for up to 12 hours with few of the side effects associated with opioid drugs.

The Food and Drug Administration (FDA) reviewed the company-funded clinical studies on the use of OxyContin® and approved it. The FDA was told that because OxyContin® was in a “time-release” tablet, it posed a lower threat of abuse and addiction.

The FDA reviewer (Curtis Wright, MD) who led the approval of OxyContin® left the FDA and within 2 years was working for Purdue Pharma.

This kind of revolving door between the FDA and pharmaceutical companies has been previously exposed in this magazine, and more recently in the Washington Post and on the CBS TV program 60 Minutes.

We view this revolving door as deferred bribery or “business as usual” as it relates to how the FDA approves new drugs and allows dangerous ones to remain on the market.

Purdue Pharma heavily promoted their OxyContin® to primary-care physicians who had little training in the treatment of serious pain or in recognizing signs of drug abuse. OxyContin® rapidly became the instant fix for patients complaining of any kind of discomfort since the drug usually provided immediate relief.

OxyContin® does this by occupying the opioid receptor on brain cells. As pain returned, so did the patient for a refill of higher-dose OxyContin® to counteract the desensitized (less responsive) brain cell opioid receptors caused by their prior use of OxyContin®.

It did not take long for experienced drug abusers and novices to discover that chewing an OxyContin® tablet, crushing it and snorting the powder, or injecting it with a needle produced a high as powerful as heroin.
By year 2000, parts of the United States began to see skyrocketing rates of addiction and crime related to OxyContin®,¹¹,¹² which has severely worsened in recent years.

**Purdue Pharma Gets Indicted**¹³

Between 1995 and 2001, Purdue Pharma brought in revenue of $2.8 billion from sales of its FDA-approved OxyContin® drug.¹³

The active ingredient in OxyContin® is oxycodone, which is a semi-synthetic opioid narcotic.

Unlike drugs such as Percocet® that contain oxycodone and other ingredients, OxyContin® contained large amounts of pure oxycodone in each time-released tablet.

Purdue Pharma recognized they would face resistance from doctors who were concerned about the potential for OxyContin® to cause addiction.¹³

To counter this, the company developed a fraudulent marketing campaign designed to promote OxyContin® as a time-released drug that was less prone to such problems.¹³

As addiction rates soared, Purdue Pharma and its executives were criminally charged for misrepresenting the addiction potential of OxyContin® to physicians.

In 2007, Purdue Pharma settled the criminal charges by paying a $634 million fine.² The executives who perpetrated the crimes were not sentenced to serve any jail time and the company was allowed to continue selling different versions of oxycodone-containing drugs.¹⁴,¹⁵

As had been widely reported in recent years, neither Purdue Pharma nor the FDA has effectively stopped what has been an explosive growth in America’s addiction for opioid drugs that Purdue conned the FDA into approving 23 years ago.

The charts on these pages speak for themselves.²²,²³


**Unequal Justice**

While heroin dealers forfeit their property and personal liberty, those responsible for today’s opioid addiction epidemic continue to profit enormously. This is courtesy of the FDA approving and allowing ongoing sale of opioid prescription drugs.

FDA fuels this epidemic further by approving lower-cost generic opioid narcotics.

Yet the public does not understand how easy it is for brain cells to develop a physical craving for opioid drugs (and not everyone prescribed opioids becomes dependent or addicted).

**Opioid Epidemic Reaches All-Time High in 2017**

The FDA initially allowed Purdue Pharma to market a theory that OxyContin® was less prone to addiction than typical opioids.

This bureaucratic blunder in 1995 is the genesis of today’s nationwide crisis of opioid addiction, overdoses, and deaths. This includes heroin (from poppies), oxycodone, and more powerful opioid-receptor site occupiers such as fentanyl (which is an opioid drug sometimes used for general anesthesia).¹⁶⁻¹⁹

The charts on these pages speak for themselves.²⁰,²¹

These bleak numbers reflect over 200,000 lost lives caused by opioid drugs that never should have been approved for widespread use.

The Centers for Disease Control and Prevention (CDC) revealed research in 2017 suggesting that the numbers of deaths attributed to opioid abuse are grossly underestimated.²²⁻²⁴
I cannot tell you how many times I’ve said NO to doctors and dentists who have offered me OxyContin® prescriptions with lots of refills.

I angrily bark back at these doctors by asking, “Are you out of your mind?” for trying to prescribe me a narcotic for something that is not particularly painful.

But how would a typical patient know to refuse an opioid prescription?

After all, the drug is approved by the FDA to treat pain. And since much of the public still thinks the FDA protects the public health, people generally follow their doctors prescribing orders.

The reality is the FDA should have known if you give a person an opioid drug, some will become addicted in a way that their brain cells constantly crave more of the opioid compound.8

Opioid addiction has reached crisis levels despite record numbers of people being incarcerated for its illicit distribution.

Education Over Incarceration

I continue to advocate education over incarceration as the nearly 40-year “war on drugs” has been an abysmal failure. This is evidenced by massive numbers of:

- Opioid addicts25-27
- Opioid overdose fatalities28-30
- Drug addiction treatment centers31
- Incarcerated drug traffickers (who are often addicts themselves)32,33

Educating school children about the mechanisms of opioid tolerance, dependence, addiction, and withdrawal will go a long way to dissuade them from considering an opioid compound.

Opioids need to regain the stigma that was successfully imparted on my generation in the 1960s/1970s era.

Drug Overdose Deaths per Year Involving...

- Heroin and Fentanyl
- Common Prescription Opioids

Source: National Center for Health Statistics, Centers for Disease Control and Prevention

Horrors of Opioid Withdrawal

When an addict acutely stops taking their opioid drug, they can endure multiple physical withdrawal symptoms including:8,34

- Systemic pain as the opioid receptors in their brain are no longer occupied by the opioid drug.
- Flu symptoms like runny nose, watery eyes, diarrhea, and nausea.
- Hot and cold sweats that involve feeling cold and shivering uncontrollably while simultaneously profusely sweating.
- Persistent insomnia that can last for years before normal sleep is restored.

These physical-withdrawal agonies can be vanquished by resuming the opioid drug.

In addition to the acute withdrawal agonies, there is a constant craving to have those brain opioid receptors occupied by an opioid drug, without which the addict cannot feel normal.

Is it any wonder that up to 90% of addicts who undergo medical intervention resume their opioid drug use?2

The horrific consequences of opioid withdrawal, including the skyrocketing numbers of lethal overdoses, makes the FDA’s approval of OxyContin® even more heinous.
Dealing With Reality

It is estimated that one-third of Americans suffer chronic pain.7 Drugs like OxyContin® effectively treat serious short- and long-lasting pain.

The problem is that some people become addicted with their very first opioid prescription. This can occur as opioid receptors become less responsive to the drug, triggering a vicious cycle where more drug is needed to achieve desired effect.

Last month we introduced an alternative solution for those who suffer chronic pain. This dual-nutrient formula is capable of modulating pain signals and modifying inflammatory responses that lead to systemic pain sensation.

There is no escape, however, from the agonies of acute and long-lasting opioid withdraw. In this month’s issue, we publish a brief review of the carnage of opioid addiction and overdose deaths that are sweeping the United States.

This would not have happened had the FDA bothered to look at the underlying mechanism of opioid addiction before approving a controlled-release opioid for widespread use in 1995.

We also introduce this month a new prebiotic chewable tablet that feeds the beneficial bacteria in your gastrointestinal tract. This special prebiotic is designed to help boost healthy bifidobacteria levels that critically decline with age.

Obtain Nutrient Formulas at Year’s Lowest Prices

This is the time of year when we discount prices on every one of our advanced nutritional formulas. Longtime supporters take advantage of the once-a-year Super Sale to stock up on their favorite nutrient formulas.

To order nutrients you need at Super Sale prices, call 1-800-544-4440 (24 hours).

For longer life,

William Faloon

As This Article Was Being Finalized…

Most of this article was written in April 2017. Before it could appear in Life Extension Magazine®, the media woke up to the opioid crisis that is causing horrific human suffering and record-setting overdose deaths.

In October 2017, CBS News’s 60 Minutes in conjunction with the Washington Post aired an investigative report exposing federal government corruption that continues to fuel “the worst drug epidemic in American history.”35,36

The FDA is responsible for initiating this addiction crisis and intensifying it by approving more opioid drugs for sale at your local pharmacy. The FDA is now trying to remove some of the generic opioid drugs that are most likely to create addiction.

As body counts rose from overdose deaths, however, the Drug Enforcement Agency (DEA) tried to stop the illicit distribution of FDA-approved opioid drugs. Big Pharma responded by hiring away DEA’s top attorneys and enforcement staff.

Big Pharma went further and lobbied Congress for new legislation that impedes the ability of the DEA to curb illicit distribution of FDA-approved opioids.

The bill, written and sponsored by Big Pharma, passed Congress by unanimous consent in 2016 and was signed into law by the president.

To view this CBS News/Washington Post joint expose on federal corruption, visit: www.LifeExtension.com/opioid

We at Life Extension have exposed FDA incompetence and corruption relating to fraudulent drug approvals dating back to the 1980s.

The new scandal revealing how our federal government initiated and fuels the opioid crisis is a sad but accurate vindication of our long-standing revolving-door allegations, whereby federal employees view their work as paving the way to lucrative careers in the industry they supposedly “regulate” under the deceitful guise of consumer protection.

Recall that the FDA reviewer who led the approval of OxyContin® left the FDA and within two years was working for Purdue Pharma (maker of OxyContin®).
HOW I AM FIGHTING BACK

I’ve written hundreds of articles that meticulously describe how misguided FDA policies are the leading causes of disability and death.

Every few years, a publisher chronicles my articles into a book that is widely disseminated.

The first exposé book was titled: **FDA: Fraud, Deception and Abuse** (2009)
Item#33816 • Retail price $20
Super Sale price $13.50
(only a few copies left)

My second rendering is titled: **Pharmacology** (2011)
Item#33835
Retail price $24
Super Sale price $8.64
(Note many chapters in Pharmacology are also in FDA: Fraud, Deception and Abuse. So, if you buy Pharmacology, you don’t necessarily need to purchase FDA: Fraud, Deception and Abuse.)

My just-published new book is titled: **Pharmacocracy II** (2017)
Item#34133
Retail price $20
Super Sale price $13.50
Four copies only $9 each

In response to today’s healthcare-price conundrum, **Pharmacocracy II** documents why conventional medicine costs so much and provides practical solutions that Congress (not influenced by pharmaceutical lobbyists) can implement to help resolve this nation’s worsening healthcare cost crisis.

**Pharmacocracy II** advocates for a free market approach that can spare Medicare and other government entitlement programs from insolvency, while improving the health of all Americans.

This book provides a rational basis for removing the compulsory aspect of healthcare regulation and allowing free-market forces to compete against government-sanctioned medicine.

More importantly, **Pharmacocracy II** empowers the citizenry to inundate Congress with a unified demand to tear down corrupt regulations that are bankrupting the United States and suppressing cures for killer diseases.

The cover price for **Pharmacocracy II** is $20. Your price is $13.50 during our annual Super Sale. Please consider buying four or more copies to send to your representative and two senators to educate them about misguided and corrupt government policies that are causing needless loss of human life. These books also make a great holiday gift.

Any of these books can be ordered by calling 1-800-544-4440 (24 hours/7 days).

References

As We See It


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.

Enhanced Zinc Lozenges is a special "ionic formula" that delivers on the original promise of seasonal immune support and comes in natural peppermint flavor.

References:
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.

SUPPORT ARTERIAL HEALTH

Now With a Highly Purified, Natural MK-7

New all-trans form of MK-7.

Just one daily softgel of the new Super K provides:

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin K1</td>
<td>1,500 mcg</td>
</tr>
<tr>
<td>Vitamin K2 (MK-4)</td>
<td>1,000 mcg</td>
</tr>
<tr>
<td>Vitamin K2 (all-trans MK-7)</td>
<td>100 mcg</td>
</tr>
</tbody>
</table>

Super K with Advanced K2 Complex
Item #02034 • 90 softgels • Non GMO

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$30</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$18.23 each</td>
</tr>
</tbody>
</table>

Each bottle lasts for three months.

Optimize your vitamin K and help keep calcium in your bones and out of blood vessels.

Vitamin K1, vitamin K2 (MK-4), and vitamin K2 (MK-7) can also be found in Once-Daily Health Booster. If you take Health Booster, you do not need additional Super K with Advanced K2 formula.

Warning to Coumadin® (warfarin) Drug Users: Patients prescribed vitamin K-antagonist anticoagulant prescription drugs like warfarin should consult their physician before taking vitamin K supplements like Super K and Once-Daily Health Booster. There is evidence, however, that users of drugs like warfarin could benefit from a consistent low dose of supplemental K. Ask your doctor if you can take a low dose (45 mcg a day) of vitamin K2 in the long-acting MK-7 form for the purpose of stabilizing your INR levels and also protecting your body against long-term vitamin K deficit. Do not initiate any form of vitamin K supplementation without full cooperation of your treating doctor, as your doctor may need to increase your dose of warfarin to compensate for your vitamin K supplement. Life Extension® provides several forms of low-dose vitamin K for physician consideration.

For full product description and to order Super K with Advanced K2 Complex, call 1-800-544-4440 or visit www.LifeExtension.com
Safe Relief
Take Pleasure in Everyday Activities

ComfortMAX™

- PEA (palmitoylethanolamide), is naturally produced in the body, to suppress localized discomforts.
- Honokiol supports calming receptors in the brain, which affects the way the brain perceives discomfort.
- Proper morning dose of PEA and evening/nightly dose of honokiol and PEA in each box.

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

ComfortMAX™
Item #02202 • 60 vegetarian tablets

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 box</td>
<td>$44</td>
<td>$29.70</td>
</tr>
<tr>
<td>4 boxes</td>
<td>$26.10 each</td>
<td></td>
</tr>
</tbody>
</table>

30 Palmitoylethanolamide AM vegetarian tablets,
30 Palmitoylethanolamide, Honokiol PM vegetarian tablets.

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.
Premier Premium Rewards

Free Unlimited Shipping

4% Back On Purchases

All Year Long

$50 Bonus Credit
Use now or save for later.

Worry Free
No auto-enrollment. Cancel anytime.

Join Premier Today! Only $49.95 per year

Visit LifeExtension.com/YourPremier • Call 1-866-542-9357 toll-free

Supersale

LifeExtension

Disease Prevention and Treatment Updated 5th Edition A $69.95 value!
Your ultimate medical reference includes the latest evidence-based protocols, addressing 130 different health concerns. FREE upon NEW PREMIER enrollment®

Premier Service is good for a full 12 months from the date of purchase or renewal, and can only be renewed after 6 months from the date of your last Premier purchase or renewal. Redeem LE Dollars to purchase virtually anything we sell, including products, blood tests, sale items, and even shipping fees! At the rate of 1 LE dollar equal to $1 U.S. Dollar at checkout. FREE unlimited standard delivery (3 to 5 business days) to any mailing address within the 50 U.S. states, excluding U.S. territories. Also includes discounts on non-standard shipping and shipping outside of the U.S. International customers can join Premier for $59.95. Existing Premier and international customers are not eligible for the free Disease Prevention and Treatment reference manual.
Vitamin D Linked With Lower Breast Cancer Risk

A recent study has found a lower risk of breast cancer over five years of follow-up in association with higher levels of serum vitamin D or vitamin D supplementation.*

The investigation included participants in the Sister Study, which enrolled women who had a sister diagnosed with breast cancer, which placed all these women at higher breast cancer risk.

The study evaluated 1,611 women who subsequently developed breast cancer and compared them with 1,775 randomly selected women free of breast cancer. Blood levels of 25-hydroxyvitamin D were analyzed in both groups.

A serum 25-hydroxyvitamin D level of at least 38 ng/mL was associated with a 21% lower adjusted risk of developing breast cancer over follow-up in comparison with levels of 24.6 ng/mL or less.

The use of a vitamin D supplement at least four times per week was associated with an 11% lower risk of the disease, in comparison with those who did not regularly supplement. Breast cancer risk was 17% lower among postmenopausal women who supplemented with modest doses of vitamin D.

Editor’s Note: “Our results support the hypothesis that vitamin D supplementation could be effective for breast cancer prevention and may help to establish clinical benchmarks for beneficial 25(OH)D levels,” the authors conclude.

* Environ Health Perspect. 2017 Jul 6;125(7)
AMPK Enhances Beneficial Effects of HDL

A recent study has found that AMPK activation enhances the ability of HDL cholesterol to inhibit development of atherosclerosis.*

Researchers were interested in evidence that the cellular enzyme AMPK could be a therapeutic candidate in the treatment of cardiovascular disease.

Scientists used mice that were bred with a predisposition to develop atherosclerosis. Drugs including metformin were employed to activate AMPK in the mice, which were fed a high-fat diet.

Results found that mice given the AMPK activators showed significantly enhanced HDL removal of cholesterol from arteries. It also increased the expression of enzymes such as LCAT that remove cholesterol from the bloodstream, and of proteins ABCA1 and ABCG1, which regulate cellular transport of cholesterol.

Furthermore, HDL from the treated mice exhibited superior oxidant-reduction capabilities and anti-inflammatory capacities, and reduced atherosclerotic plaque formation was observed.

Editor’s Note: The study’s authors comment that their observations “suggest that pharmacological AMPK activation enhances the anti-atherogenic properties of HDL in vivo. This likely represents a key mechanism by which AMPK activation attenuates atherosclerosis.”

Olive Oil Linked With Better Memory

Findings from a recent study indicate a potential protective role for extra virgin olive oil consumption against the development of Alzheimer’s disease.*

For their research, the team used mice that were genetically modified to develop the memory impairment, amyloid plaques and neurofibrillary tangles that characterize Alzheimer’s disease. Beginning at six months of age, the animals were given either an extra virgin olive oil-enriched diet or regular chow.

At nine months and 12 months of age, mice that received the olive oil-enhanced diet performed better on assessments of working memory, spatial memory, and learning compared to mice that received regular chow.

Brain tissue showed significant differences in nerve cell appearance and function between the two groups. “We found that olive oil reduces brain inflammation but most importantly activates a process known as autophagy,” the study authors reported.

Editor’s Note: Autophagy is the breakdown and clearance by the cells of intracellular debris and toxins.

* Ann Clin Transl Neurol. 2017 Jun 21;4(8):564-574
Just-Published Protocol in the Disease Prevention and Treatment Book

The scientists and writers at Life Extension® continuously update the online Disease Prevention and Treatment protocol chapters based on the latest research. A recent update is briefly summarized here with complete versions of this and other chapters and references available online at:

http://www.lifeextension.com/Protocols

Cancer Treatment Advances

Malignant tumors can suppress the immune system and evade immune cell destruction. As we age, we undergo a process called immune senescence, which makes us more susceptible to infection and chronic disease.

Successful immunotherapeutic approaches overcome some of these barriers by boosting the immune system’s natural defenses and providing it with new ways to attack cancer.

Integrative interventions can enhance immune system function and may complement prescription immunotherapies. For example, the over-the-counter drug cimetidine (Tagamet®) can modulate immune function and facilitate a more robust immune response against some cancers.
Opioid Overdose Antidote Price Skyrockets

The emergency medication device **Evzio** has become the latest example of out-of-control drug pricing.*

Made by the Richmond, Virginia-based company Kaleo, Evzio is the auto-injector version of naloxone and is used as a life-saving antidote to opioid overdoses. When it first appeared in 2014, a two-pack of Evzio cost $575. Today, the list price has jumped 680% to $4,500.

Kaleo also makes the emergency epinephrine device **Auvi-Q**, which uses the same auto-injector and also costs $4,500, although the company claims millions of people with insurance will be able to get it with no copay and the cash price for others would be $360.

These prices have caught the attention of a number of US senators, including Minnesota Senator Amy Klobuchar, who contacted Kaleo and asked for more information regarding their pricing strategy.

The senator wrote, in part: “I understand that Kaleo is trying to mitigate the impact on consumers by providing Evzio for free to cities, first responders, and drug treatment programs, and offering various programs to help ensure that no consumer pays the $4,500 price… While these subsidies and programs are noteworthy, I am concerned that they do not address the underlying problem of rising prescription drug costs.”

**Editor’s Note:** Health insurers are not happy with the high list price of the Kaleo auto-injector medications. It’s been reported that major companies including Cigna and Humana have expressed opposition to the pricing strategy, and Aetna has put Auvi-Q on restricted coverage.

Experts Promote Insurance for Alternative Pain Treatment

Health insurance coverage of a broader array of types of pain management may be on the way if a coalition of insurers, clinicians, and others in the field have any influence.*

Pain experts are lauding the first-ever Integrative Pain Care Congress, which was initiated at the 28th annual meeting of the Academy of Integrative Pain Management (AIPM). The group supports extending insurance to cover integrated pain management approaches such as acupuncture and yoga, among others.

Experts see this as a win-win strategy, saying it would reduce the excessive prescription of opioids—widely seen as a major problem in the US—while also saving billions in healthcare expenses and bringing relief to the millions of Americans suffering with chronic pain.

Without insurance covering it, many pain sufferers can’t afford treatments that could be effective for them.

“We have a dual health crisis in this country,” says W. Clay Jackson, MD, the president of AIPM. “We have a crisis of overprescription of opioids but undertreatment of chronic pain.”

Editor’s Note: Dr. Jackson acknowledges that insurers will want evidence that alternative pain treatments are cost-effective. He says there is already “a great deal of evidence” and that it’s growing, but points out the difference between “evidence-based” and “evidence-guided” care. “Very little of what we do in medicine is actually evidence-based,” he observes. “A great deal of what we do is accepted clinical practice, what clinicians feel is working for patients.”

New AMPK Formula at Sharply Reduced Price

Waist Management

The plant compounds in the new AMPK Metabolic Activator provide powerful support for youthful levels of AMPK activity, an enzyme that fights belly fat and promotes metabolic health.

<table>
<thead>
<tr>
<th>Non-GMO</th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$38</td>
<td>$25.65</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$21.60 each</td>
</tr>
</tbody>
</table>

Item #02207 - 30 vegetarian tablets

NOTE: This new one-per-day formula will replace the current AMPK Activator that requires three capsules a day. A full description of its improved benefits will be published in a future issue of Life Extension Magazine®. It is also costs 20% less than current AMPK Activator.

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

ActivAMP® is a registered trademark of Gencor.

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

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.
An exciting area of medical research is focused on the gut microflora (or microbiome) that resides in the human digestive tract.

These trillions of microorganisms help regulate our immunity, endocrine system, digestion, and metabolism.1-4

Scientists are discovering that the gut microbiome is linked with mood, cardiovascular health and the ability to fight off disease.5-8

Research shows how restoring optimum gut-flora balance may help promote long-term health.9

The National Institutes of Health launched the Human Microbiome Project to encourage advancement in the knowledge and application of the human microbiome for health and longevity.10

Among the most important and beneficial bacteria of the gut microbiome are those belonging to the group bifidobacteria.11 Research shows that bifidobacteria have wide-ranging health benefits—they fight allergies, high cholesterol levels, respiratory diseases, stress, and anxiety. In an animal study, they reduced tumor cell growth.12
As children, our bodies have an abundance of bifidobacteria. But with age, poor diet, and antibiotic use, levels of bifidobacteria decline.12

To promote restoration of healthy bifidobacteria levels, researchers at UCLA School of Medicine studied a unique prebiotic fiber called xylooligosaccharide (XOS), which is made from non-GMO corn cobs.

XOS provides an ideal natural environment for healthy bacteria to thrive in the gastrointestinal tract.13

In the studies, researchers found that XOS helped restore intestinal health and increases the presence of bifidobacteria in as little as 14 days.14 And, it did so without promoting other harmful bacteria.

Given the numerous ways that bifidobacteria work to ensure our health, many people want to boost their healthy gut bacteria flora. XOS is a convenient novel method.

Boosting Your Bifido

According to research, the proportion of healthy bifidobacteria in the human gut is about 60% in infancy.

By adulthood, bifidobacteria decline to 30%-40%, fall to about 10% in late middle age, and drop to less than 5% by old age.12

Less bifido means more room for unhealthy, dangerous bacteria to take over.

Like everything in our body, bifidobacteria need the right type of nourishment to grow and multiply. Keeping your bifidobacteria well fed ensures their presence as health-promoting residents of your digestive tract.

Many Americans’ diets are notoriously deficient in dietary fiber. And, while bifidobacteria’s number-one food source is dietary fiber, studies have revealed that they particularly thrive on a prebiotic called xylooligosaccharide (XOS). This prebiotic was effective even when taken in relatively small amounts.15

Exciting human clinical trials demonstrate that this targeted prebiotic formulation dramatically boosts bifidobacteria in the digestive tract.13,14

The Search for a Targeted Prebiotic

The term prebiotic might be new to some people, but prebiotics have been around for years.16 They are better known as soluble fiber.

Unfortunately, to achieve a significant increase in bifidobacteria, one would have to ingest a high dose of soluble fiber. An enormous 10 grams to 20 grams of FOS (fructooligosaccharides)—a type of soluble fiber—were required in one study to achieve a significant increase in bifidobacteria. This can be problematic because such high doses of fiber supplements can cause excessive flatulence, bloating, and intestinal cramps.13

That’s why researchers have been searching for a prebiotic with targeted bifidogenic effects—meaning one that promotes the growth of bifidobacteria. That search has led researchers to the special prebiotic xylooligosaccharide, or XOS, derived from non-GMO corn cob.

Recent human studies have shown that XOS helps safely and significantly boost levels of beneficial bifidobacteria.13,14
XOS Increases Bifidobacteria

The most compelling of the new studies on XOS boosting bifidobacteria count were conducted by microbiologists and clinical researchers affiliated with UCLA School of Medicine.\(^{13}\)

In a rigorous double-blind, randomized, placebo-controlled study, 32 healthy subjects received either a placebo, 1.4 grams of XOS, or 2.8 grams of XOS every day for eight weeks.

The preparation contained 70% XOS, so that the total amount of XOS ingested in the two study groups was 1 gram or 2 grams, respectively.

The big question: Would it be possible for such extremely low doses of XOS to significantly improve bifidobacteria levels?

The answer was a definite yes.

Bifidobacteria counts rose significantly in both XOS groups compared with placebo recipients. And the higher-dose group (2 grams/day) showed significantly larger increases in healthy bifidobacteria levels than the lower-dose group (1 gram/day).

### What You Need to Know

**Benefits of Prebiotics**

- The trillions of bacteria living in the human gut have enormous impact on our health and vulnerability to disease.
- Prebiotics act as a “bacterial fertilizer,” and provide a healthy environment for beneficial bacteria to thrive and multiply.
- New studies show that supplementing with a prebiotic called xylooligosaccharide (XOS) can significantly and meaningfully boost bifidobacteria levels in the human gut, while reducing serum levels of cardiovascular-risk biomarkers including cholesterol, triglycerides, and glucose.
- Higher levels of bifidobacteria are associated with resistance to a wide range of age-related diseases, while deficiencies in bifidobacteria are closely aligned with susceptibility to those conditions.
- Because of its potency, XOS is effective at doses as low as one-tenth the amount usually used for other prebiotic supplements.
The XOS groups did not experience any major increases in other non-bifidobacteria microbes, including the growth of more harmful bacteria. The XOS fiber only promoted the growth of beneficial bifidobacteria. This is significant because some fiber supplements can produce increases in both good and bad microorganisms, which can essentially cancel out the benefits of increasing bifidobacteria levels. The lower-dose (1-gram) group saw significant increases in bifidobacteria counts in 28 days. But the higher-dose (2-gram) group achieved significant increases in bifidobacteria in just 14 days.

Keep in mind that these studies used doses of XOS far below the 10 grams-20 grams/day required to achieve similar results with other prebiotics made from fiber.

The importance of healthy bacteria

It is still under investigation as to why bifidobacteria respond so positively to supplementation with XOS at low doses that don’t cause side effects. Studies show that bifidobacteria utilize precisely the kinds of carbohydrates that humans can’t digest. This is especially true of the so-called oligosaccharides, of which XOS is one important example.20

A Healthier Gut in Just Two Weeks

The previous study showed that XOS increases the numbers of beneficial bifidobacteria. The next study showed that XOS increased beneficial bifidobacteria in record time. The researchers used the same XOS preparation and doses as the previous study, but without a control group. The lower-dose (1-gram) group saw significant increases in bifidobacteria counts in 28 days. But the higher-dose (2-gram) group achieved significant increases in bifidobacteria in just 14 days.

Keep in mind that these studies used doses of XOS far below the 10 grams-20 grams/day required to achieve similar results with other prebiotics made from fiber.

Broad-Spectrum Benefits

But that’s just half of the story. This study went on to show that taking XOS resulted in numerous clinical improvements throughout the body.

For example, taking XOS led to a significant increase in fecal acidity. This is a beneficial effect that may help to ward off less desirable organisms while promoting the growth of healthy bacteria. This benefit has been reported previously with XOS supplementation in humans.

In another benefit that has implications for heart health, scientists found increases in fecal levels of triglycerides and cholesterol—indicating that the XOS removed excess cholesterol and triglycerides from the body. These changes were echoed by significant reductions in serum triglyceride and cholesterol levels, along with significant drops in blood-sugar levels.

An imbalanced microbiome is associated with metabolic syndrome. This study shows us that by restoring healthy levels of bifidobacteria, XOS may help reduce several common metabolic health risks.

These benefits are further testament to the system-wide impact of boosting the bifidobacteria content in the digestive tract.
Genetic analysis of bifidobacteria suggests they are well-equipped to carry out that digestion, which not only feeds the bifidobacteria, but also produces useful molecules called *bacteriocins* that help suppress growth of the less-desirable bacteria.12,20 Together, these findings highlight the importance of feeding these essential bacteria to keep them healthy so they can keep us healthy.

**Summary**

Microorganisms that reside in the human digestive tract, also called the gut microbiome, are a critical factor in sustaining our resistance to disease and promoting vigor and good health.

Many people realize the importance of taking a probiotic to help increase the numbers of beneficial bacteria.

One prebiotic, *xylooligosaccharides*, or XOS, has now been shown in human clinical trials to selectively boost bifidobacteria populations in the gut in low doses!

These studies demonstrate systemic benefits when increasing bifidobacteria organisms in the digestive tract.

XOS boosted the numbers of health-promoting bifidobacteria, while lowering serum cholesterol, triglycerides and glucose.

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**


18. Arboleya S, Watkins C, Stanton C, et al. Microbiomic analysis of bifidobacteria suggests they are well-equipped to carry out that digestion, which not only feeds the bifidobacteria, but also produces useful molecules called *bacteriocins* that help suppress growth of the less-desirable bacteria.12,20 Together, these findings highlight the importance of feeding these essential bacteria to keep them healthy so they can keep us healthy.

**Bifidobacteria and Immune Function**

Scientists around the world are intensifying research on the broad health benefits that result from the trillions of bacteria in our intestines known as the gut microbiome. One particular bacteria known as bifidobacteria has been of great interest to researchers due to its ability to modulate so many areas of our health, especially our immunity.22

Research clearly demonstrates that a strong bifidobacteria population can help to modulate an ailing immune system, restore immune balance by quelling excessive inflammation while also restoring effective immune surveillance against cancer cells. An active presence of bifidobacteria can have a beneficial impact on the reduction of diabetes, heart disease, allergies, infections and cancer.17

While bifidobacteria declines with age and can result in the beginning of degenerative diseases, scientists have looked for ways to increase its growth and viability. They’ve discovered that the unique fiber XOS dramatically increases the bifidobacteria population and with it, our immunity.
Cognitex® with Pregnenolone & Brain Shield®

Cognitex® is designed to improve cerebral performance and supports brain and nervous system function. Scientifically formulated Cognitex® contains validated ingredients shown at two weeks to improve:*

- Spatial short-term memory 42%
- Recall 15%
- Recognition 11%
- Attention 12%
- Visual learning 33%
- Activities of daily living by over 10%

* J Diet Suppl. 2011 Jun; 8(2):158-68

Non-GMO

Caution: Do not take this product if you have breast cancer, prostate cancer, or other hormone-sensitive diseases. If you are taking anti-coagulant or anti-platelet medications, or have a bleeding disorder, consult with your health care provider before taking this product.

Leucoselect® is a registered trademark of Indena S.p.A.
Perflusan® is used with permission.
Sensoril® is protected under US Patents Nos. 6,153,198 and 6,713,092 and is a registered trademark of Natreon, Inc.
Sharp-PS® is a registered trademark of Enzymotec Ltd.

Cognitex® with Pregnenolone & Brain Shield® (Gastrodin)
Item #01897 • 90 softgels

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$62</td>
<td>$41.85</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$35.78 each</td>
<td></td>
</tr>
</tbody>
</table>

For full product description and to order Cognitex® with Pregnenolone & Brain Shield®, call 1-800-544-4440 or visit www.LifeExtension.com

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
• With age, our bifidobacteria levels decline to as little as 5%, creating gut imbalance.¹

• Increasing bifidobacteria levels enhances digestion and carbohydrate metabolism.

• Strawberry flavored FLORASSIST® Prebiotic Chewable, helps restore healthy bifidobacteria levels in as little as 14 days using XOS prebiotic fiber.²

• 1,000 mg of XOS (xylooligosaccharides) per prebiotic chewable.

References
Support Youthful Brain Function

Human studies demonstrate robust neurological benefits in response to low-dose lithium and colostrum-derived proline-rich polypeptides. 

Memory Protect has been formulated with these two nutrients to support healthy structure of brain cells, normal memory, and recall function. 

Each box is designed to enable you to take these nutrients on the identical dosage schedule used in successful clinical trials.

Memory Protect
Item #02101 • 36 capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 box</td>
<td>$24</td>
<td>$16.20</td>
</tr>
<tr>
<td>4 boxes</td>
<td>$14.40 each</td>
<td></td>
</tr>
</tbody>
</table>

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

Non-GMO. Contains milk.

CAUTION: Consult your healthcare provider before use if you are taking medication. Do not use if pregnant, lactating, or trying to become pregnant. Rare, mild and temporary anxiety and/or sleep disturbance may be experienced.
**FORTIFY YOUR INTESTINAL FLORA**

### Probiotic Blend with Phage Technology

**Dual Encapsulation for Optimal Delivery**

---

**FLORASSIST® GI WITH Phage Technology** combines six strains of probiotics, along with four types of phages that work within hours, not days.

The addition of **phages** is designed to **remove** unwanted **bacteria** in the **intestines** to make room for the beneficial **probiotics**.

---

The suggested daily serving of one liquid vegetarian capsule of **FLORASSIST® GI with Phage Technology** provides:

<table>
<thead>
<tr>
<th>Probiotic Blend</th>
<th>15 Billion CFU**&lt;sup&gt;**&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactobacillus acidophilus La-14</td>
<td>L. rhamnosus Lr-32</td>
</tr>
<tr>
<td>Bifidobacterium lactis BI-04</td>
<td>B. bifidum/lactis Bb-02</td>
</tr>
<tr>
<td>L. paracaeli Lpc-37</td>
<td>B. longum BI-05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TetraPhage Blend</th>
<th>15 mg **</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH01 - Myoviridae</td>
<td>T4D - Myoviridae</td>
</tr>
<tr>
<td>LLS - Siphoviridae</td>
<td>LL12 - Myoviridae</td>
</tr>
</tbody>
</table>

---

**FLORASSIST® GI with Phage Technology** • Item #02125  
30 liquid vegetarian capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$33</td>
<td>$22.28</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$20.25 each</td>
<td></td>
</tr>
</tbody>
</table>

---

For full product description and to order **FLORASSIST® GI with Phage Technology**, call 1-800-544-4440 or visit [www.LifeExtension.com](http://www.LifeExtension.com)

---

Non-GMO  † Colony Forming Units at time of manufacture.  ** Daily Value not established.

---

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.
Carnosine, Cataracts, and Visual Clarity

Cataracts cause about half of all cases of blindness worldwide.1,2

By age 80, more than half of all Americans will have cataracts, or will have undergone surgery to remove them.3

Researchers have been investigating two different but related forms of the nutrient carnosine to help slow the development of cataracts as well as improve visual performance of cataract-affected eyes.

A new study illustrates the ability of oral carnosine in capsule form to preserve normal structure of proteins in the lens of the eye—an action that may slow or prevent the development of vision-impairing cataracts.4

The study shows that carnosine works through several interrelated mechanisms that help protect against the underlying changes caused by aging that lead to cataracts.4

In addition, human studies have found that a derivative of carnosine, N-acetylcarnosine, when used as an eye drop, can induce improvements in visual performance of cataract-affected eyes.5,6

Many readers of this magazine have been using a high-potency carnosine supplement (500-1,000 mg/day) since we introduced it in 2000.

A number of others also use eye drops that deliver N-acetylcarnosine directly to the eye lens where cataracts occur.

Based on both established and recent science, there is now a two-part strategy of using both carnosine and N-acetylcarnosine to help reduce the risk of cataracts.
CARNOSINE, CATARACTS, AND VISUAL CLARITY

Scientists are discovering that the use of oral and topical forms of carnosine can help reduce the risk of cataracts. As you’ll read next, carnosine possesses unique mechanisms that guard against structural changes that lead to cataract formation.14-17

How Oral Carnosine Prevents Cataracts

As we age, the cumulative impact of oxidant stress and protein degradation18-29 distorts our delicate eye lenses—and helps explain the increase in cataracts. A factor for the development of age-related cataracts is protein misfolding and clumping—hallmarks of cataract formation.29

A new laboratory study shows that carnosine works through several mechanisms that help protect against cataracts. The researchers discovered the following new findings:4

• The presence of carnosine largely prevented the accumulation of distorted and dysfunctional lens proteins.

• Carnosine achieved these effects in part by restoring the protective function of the lens protein, alpha-crystallin. These crystallins are present at high concentrations in the eye lens, and preserving their proper structure and arrangement is an important factor in keeping the lens clear.

How Cataracts are Formed

In order to understand why carnosine is so beneficial, it’s helpful to understand how cataracts form to begin with.

Cataracts are opaque collections of deformed proteins that accumulate within the clear lens of the eye.4,36

All proteins rely closely on their exquisitely-folded molecular structure for their function. Misfolded proteins don’t work properly, and misfolded lens proteins become opaque and unable to transmit light, thereby forming a cataract.37,38

An important factor in protein misfolding in the lens is nonenzymatic glycation. In this process, sugars become chemically bound to amino acids, proteins, and other essential biomolecules, distorting their structure, which contributes to protein misfolding.4,39-42

Specialized “chaperone” proteins called crystallins normally help prevent protein unfolding in the lens. But when crystallins themselves undergo glycation, they lose this protective function. This essentially removes the last line of defense, and allows cataracts to form even faster.23,38,40,41

The most recent study of carnosine in cataracts shows us that, by slowing glycation-induced unfolding of lens proteins, carnosine can help prevent cataract formation.4
Perhaps nowhere is the impact of glycation on accelerated aging as apparent as it is in the eye lens, the normally crystal-clear portal that focuses light on the retina. Glycation of lens proteins occurs in both diabetic and nondiabetic people, although diabetics experience cataracts much earlier than nondiabetics. Carnosine is a potent antiglycation and free radical-reducing agent and oxidative-stress reducer. One animal study of cataracts showed its ability to reduce levels of glycated lens proteins, prevent the loss of protective enzymes, and, ultimately, to delay the clouding of the lens. One important laboratory study showed that carnosine prevented the lens protein crystallin from clumping together into dense, opaque fibrils. Carnosine was then found to simultaneously restore crystallin’s ability to positively impact other proteins and prevent them from clumping together. Even more promising, carnosine has now been shown to disassemble those dense opaque clumps of crystallin, thereby restoring lens transparency in animal lenses in culture.

Carnosine reduced lens protein instability and breakdown. Ultimately—and most importantly—carnosine prevented the development of lens cloudiness, the ultimate outcome of cataracts.

This new scientific study hails the multitargeted functions of carnosine, and suggests new mechanisms by which carnosine may prevent glycation- and oxidative stress-related cataract formation.

Cataracts, Glycation, and Carnosine

Glycation is one of the underlying causes of cataracts. It is also one of the basic processes (along with oxidative stress, mitochondrial dysfunction, and DNA damage) that hastens the aging process in all cells, tissues, and organs.

Diabetes is the classic example of the adverse impact of glycation. Diabetes is a grimly accurate model of accelerated aging. People with diabetes suffer from the features associated with normal aging, but at a much faster rate than seen in nondiabetic individuals.

One of the common denominators for diabetes and normal aging is the glycation of proteins and the resulting deterioration of their function. This means that fighting glycation everywhere in the body is a direct and important way to decelerate aging.

Carnosine May Help Prevent Cataracts

- Cataracts, which are cloudy collections of misfolded protein molecules that accumulate in the lens, are a leading cause of vision loss and blindness in older adults.
- Among the primary underlying causes of cataracts are oxidative stress and glycation of the delicate proteins that naturally maintain the lens in a state of crystalline clarity.
- Carnosine has potent anti-glycation and free radical-reducing properties.
- A new study sheds light on mechanisms by which carnosine protects lens proteins to prevent cataracts and their progression.
- Human, animal, and lab studies show that carnosine, unlike any medication, can not only prevent the protein damage that produces cataracts, but is also capable of reversing them, leading to the possibility of the first therapy to slow cataract progression.

What You Need to Know

- Cataracts, which are cloudy collections of misfolded protein molecules that accumulate in the lens, are a leading cause of vision loss and blindness in older adults.
- Among the primary underlying causes of cataracts are oxidative stress and glycation of the delicate proteins that naturally maintain the lens in a state of crystalline clarity.
- Carnosine has potent anti-glycation and free radical-reducing properties.
- A new study sheds light on mechanisms by which carnosine protects lens proteins to prevent cataracts and their progression.
- Human, animal, and lab studies show that carnosine, unlike any medication, can not only prevent the protein damage that produces cataracts, but is also capable of reversing them, leading to the possibility of the first therapy to slow cataract progression.
It is important to note that some of the studies presented here discuss the well-known antiglycation properties of oral carnosine supplementation in cataract prevention.

As you are about to learn, topical application of a derivative form of carnosine called N-acetylcarnosine has been shown to penetrate the lens of the eye and help maintain more youthful structural eye lens clarity.

Human Studies on N-Acetylcarnosine Eye Drops

As we have seen, carnosine can play an important role as it relates to normal structural changes that occur in the eye over time. When carnosine is applied as an eye drop, it can benefit the surface cornea, but does not penetrate the eye lens.

N-acetylcarnosine, however, can penetrate the front chamber of the eye and subsequently undergo conversion into carnosine. N-acetylcarnosine eye drops may thus be a useful delivery vehicle to boost carnosine levels beyond the cornea into the front chamber of the eye and the eye lens.

Human studies have demonstrated that N-acetylcarnosine 1% eye drops lead to improvements in cataracts and visual performance of cataract-affected eyes.5,6

Specifically, the studies demonstrated improvement in overall light transmission, glare sensitivity, and, most importantly, visual sharpness.5,6

Improvements in glare sensitivity are particularly relevant for older adults who drive. Glare sensitivity can be very dangerous because it produces the characteristic halos around bright lights, which can confuse drivers and contribute to accidents.

One study showed that N-acetylcarnosine 1% eye drops given to older drivers improved visual clarity and reduced glare sensitivity at red and green targets.35 For best results, use carnosine as early as possible, since its specialty lies in preventing, rather than treating, cataracts.

Summary

By age 80, a majority of Americans will have cataracts or have undergone cataract surgery.

Cataracts are dull, opaque collections of misfolded proteins that accumulate within the lens of the eye, blocking light and blurring vision.

Protein glycation is a destructive process involved in the production of the dense protein clumps that form cataracts. This has led to an explosion of interest in bioactive molecules capable of preventing or even reversing glycation in an effort to preserve clear vision into our advanced years.

Carnosine has now been shown to preserve the proper structure and arrangement of lens proteins, preventing loss of lens crystallinity under laboratory and real-world conditions. One of the main ways it accomplishes this is through its ability to fight glycation, which is a critical factor in cataract formation.
N-acetylcarnosine has long been used as a 1% stabilizing agent in eye drops that contain FDA-approved lubricating agents.

A number of people use these eye drops daily for their multifaceted benefits.

To maintain continuous carnosine blood levels, take a supplement that provides 500 mg of carnosine twice daily.

The reason it’s important to take 500 mg of oral carnosine twice a day is that carnosinase enzymes degrade even higher-potency (500 mg) carnosine within 12 hours of ingestion.13

For the past 18 years, many readers of this publication have been using high-potency carnosine oral supplements and lubricating eye drops containing N-acetylcarnosine. ●

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
Eye Pressure Support with Mirtogenol® formula may support healthy blood flow within the tiny vessels (microvasculature) of your eyes, helping to promote healthy fluid pressure.

Retail  Super Sale
Price  Price

1 bottle  $38  $25.65
4 bottles  $22.95 each

For full product description and to order Eye Pressure Support with Mirtogenol® call 1-800-544-4440 or visit www.LifeExtension.com

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Brite Eyes III provides **two** well-established lubricants in every drop, soothing eye discomfort without irritation.

**N-acetylcarnosine** is used as a stabilizing agent.
Carnosine is a unique dipeptide that can inhibit glycation throughout the body, thereby helping to slow normal aging processes. Suggested dose is one 500 mg Carnosine cap taken twice daily.

Super Carnosine provides 500 mg of carnosine along with luteolin to inhibit inflammatory factors and fat soluble vitamin B1 (benfotiamine) to further impede glycation reactions.

Mitochondrial Energy Optimizer contains the same carnosine dose with R-lipoic acid, benfotiamine, taurine, luteolin, and PQQ to provide broad-spectrum support.

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$36</td>
<td>$24.30</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$144</td>
<td>$97.20</td>
</tr>
<tr>
<td>Item #01829</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 vegetarian capsules</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$40</td>
<td>$27.30</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$164</td>
<td>$109.20</td>
</tr>
<tr>
<td>Item #02020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 vegetarian capsules</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$56</td>
<td>$45.90</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$224</td>
<td>$184</td>
</tr>
<tr>
<td>Item #01868</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120 capsules</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Life Extension* was the first to introduce high-dose (500 mg) carnosine back in 1999.
- Life Extension carnosine is available in three different formulas to allow you to customize your longevity program.
- Each formula provides high doses of carnosine to ensure sustained benefits.

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

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.
Surprising Discoveries About Olive Oil
Those who follow a Mediterranean diet have an increased quality of life with a lower mortality rate.\textsuperscript{1-3}

The Mediterranean diet consists of a low intake of red meat and sweets with greater emphasis on fish, vegetables, mixed nuts, whole grains, wine (moderate consumption) and olive oil.\textsuperscript{4,5}

Unrefined extra virgin olive oil, a chief component of the Mediterranean diet, has been given significant credit for the diet’s health-promoting ability, especially with its rich polyphenol content.\textsuperscript{6-9}

Today, substantial new findings further validate extra virgin olive oil’s benefits for cardiovascular, bone, and brain health. Several of these studies were large-scale clinical trials on humans.

One study in particular caught mainstream media attention. This study, with nearly 19,000 participants, showed that those who consumed the highest quality foods, and who most closely adhered to a true Mediterranean diet, were the ones who were most likely to derive the benefits, including sharp reductions in coronary heart disease and stroke.\textsuperscript{10}
In a study conducted in Italy, almost 19,000 people were assessed to determine their adherence to a Mediterranean-style diet. The researchers discovered that people who derived the greatest health benefits ingested higher concentrations of micronutrients such as polyphenols.

One of the greatest sources of polyphenols in the Mediterranean diet stems from extra virgin olive oil. Olive oil that is not extra virgin is commercially produced in a way that degrades the polyphenols.8,11,12

In addition, a large quantity of supposed extra virgin olive oil is counterfeit and does not meet the legal grades to be considered extra virgin. These counterfeit oils have even been refined and adulterated with pro-inflammatory fats such as corn, safflower and sunflower oils. It is estimated that this is the case in 50% of the extra virgin olive oil sold in Italy, which implies that greater health benefits could be attained if purveyors of counterfeit olive oil were stopped.13-15

The situation is even worse in America, where an estimated 80% of extra virgin olive oil does not meet the legal grades to be called extra virgin. Producing top-quality olive oil takes time and care, and there are many unscrupulous providers that intentionally mislabel their product to make money.

The lead author of the Italian study on Mediterranean diet quality suggested that testing for levels of polyphenols and other diet-derived natural compounds would be the ideal way to confirm the importance of this quality.16

Polyphenol Concentrations Show Connection With Olive Oil’s Benefits

The high oleic acid (monounsaturated fat) content of olives was initially thought to be the main source of olive oil’s health benefits.17 Today, more researchers contend that the health benefits stem from olive oil’s high polyphenol content which includes: oleuropein, tyrosol, and hydroxytyrosol.18-20

Increasing evidence suggests that the polyphenol hydroxytyrosol should be given the most credit as it makes up approximately 50% of extra virgin olive oil’s total polyphenol content.19

In 2017, the American Journal of Clinical Nutrition published a study that evaluated the effects of hydroxytyrosol on a cohort of 1,851 men and women.21

To be eligible for this study all participants had to be at high-risk for cardiovascular disease. The participants averaged age 67 and had either type II diabetes or at least three or more major risk factors: smoking, hypertension, dyslipidemia, overweight/obesity, or a family history of premature cardiovascular disease.

The subjects were divided randomly into one of three different intervention groups:

- Group 1: Traditional Mediterranean diet supplemented with extra virgin olive oil.
- Group 2: Traditional Mediterranean diet supplemented with nuts.
- Group 3: Control, low-fat diet.

To measure hydroxytyrosol ingestion, urinary levels of its metabolite (homovanillyl alcohol) were measured.

Results showed that higher urinary levels of homovanillyl alcohol resulted in sharply lower risks of cardiovascular events and mortality.21

Compared to those in the lowest quintile, individuals in the third or higher quintile levels of homovanillyl alcohol had at least 56% reduced risk of a cardiovascular event (heart attack, stroke, or death from cardiovascular cause). In addition, subjects in the highest quintile of homovanillyl alcohol had, on average, 9.5 years longer life after the age of 65.21

The highest urinary levels of homovanillyl alcohol were obtained by the subjects whose intervention included a traditional Mediterranean diet with the addition of extra virgin olive oil.
Olive Oil Alzheimer’s Study Reaches Mainstream Media

Research on olive oil has been primarily focused on its cardiovascular support. However, a growing amount of research in the last decade has shown that it also reduces the risk of Alzheimer’s disease.22-24

In a revealing animal study, researchers examined the effects of extra virgin olive oil on mice genetically prone to develop neurodegenerative changes typical of Alzheimer’s disease, such as amyloid plaque. These six-month-old mice were divided into two groups, one fed a standard diet, and the other group the same standard diet plus extra virgin olive oil. After six months, they found significant differences in their behavior and neuropathology. The researchers concluded that extra virgin olive oil exerted a beneficial effect on all major characteristics of Alzheimer’s disease, including behavior and neuropathology.25

To test their neuropathology, all major biomarkers for Alzheimer’s disease (beta-amyloid, tau proteins, and synaptophysin) were recorded.26

Beta-amyloid and tau are deleterious proteins that, through many mechanisms, cause cellular dysfunction and death. Synaptophysin is a protein marker of synaptic integrity.

What You Need to Know

Extra Virgin Olive Oil for Heart, Bone, and Brain Health

- Extra virgin olive oil is a key component of the Mediterranean diet.
- A recent Italian study discusses the necessity of eating high quality, polyphenol-rich foods in order to obtain the benefits we associate with a Mediterranean diet.
- Oleuropein, tyrosol, and hydroxytyrosol are important polyphenols found in high-quality extra virgin olive oil.
- A Mediterranean diet rich in high-quality extra virgin olive oil is linked with reduced risks of cardiovascular disease and low bone density, and recent animal research has provided insights on its importance in fighting neurodegenerative diseases like Alzheimer’s.
The research found that in the mice fed extra virgin olive oil, there was a significant decrease in these deleterious proteins and an increase in the beneficial synaptophysin.\textsuperscript{25}

The researchers credited these beneficial effects to extra virgin olive oil’s ability to increase autophagy. Autophagy is how cells rid themselves of debris that interferes with normal healthy cellular function.

This study, conducted by researchers at Temple University, was significant enough to catch media attention in \textit{USA Today}.\textsuperscript{27}

**Olive Oil and Bone Health**

A fracture in the hip has a higher mortality rate than all other fractures in the elderly. The incidence of hip fractures are increasing yearly by 1\%-3\% in most regions of the world.\textsuperscript{28}

A meta-analysis of three studies revealed that adherence to the \textbf{Mediterranean diet} was associated with a 21\% reduced risk of hip fractures.\textsuperscript{29}

In an additional study, a key component of the Mediterranean diet, extra virgin olive oil, was tested against a diet high in nuts, or a low-fat diet, on 870 subjects ages 55-80 with high risk of cardiovascular disease.\textsuperscript{30} The subjects were monitored over a median follow-up of 8.9 years, during which 114 cases of osteoporosis-related fractures occurred.

Subjects who integrated the highest amounts of \textbf{extra virgin olive oil} into their diet had a 51\% lower risk of fracture.\textsuperscript{30}

The most common way to assess the risk of fracture is a bone densitometry study, which is a specialized type of X-ray. These tests generate a “\textbf{T-score}” – higher T-scores mean greater bone-mineral density, and lower risk of fracture.

In another study on bone density, a group of researchers determined the \textbf{T-scores} of 418 subjects, average age of 50, and compared their diets.\textsuperscript{31}

The researchers found the highest T-scores directly corresponded to those who had the greatest adherence to the Mediterranean diet, while the lowest T-scores were found in individuals who had the highest consumption of red meat. The foods items most closely correlated with high T-scores were extra virgin olive oil, fish, and fruits.\textsuperscript{31}

Olive oil’s bone-health supporting potential has also been demonstrated in animal studies. In one study, rats were assigned to one of four diet regimens. All received a regular diet, but with fat from either virgin olive oil or sunflower oil, which is high in omega-6 fatty acids. Two additional groups received supplemental CoQ10 in addition to olive or sunflower oil.\textsuperscript{32}

In aged rats (24 months old), loss of bone mineral density was significantly greater in sunflower oil-fed rats compared to the group that received olive oil. Interestingly, bone-mineral density and concentration was markedly increased, in both diet groups when supplemented with CoQ10.

The researchers found that sunflower oil was associated with significantly greater oxidative stress, which was effectively controlled with CoQ10 supplementation.
Additional Benefits of the Mediterranean Diet and Extra Virgin Olive Oil

In a double-blind placebo-controlled study on 41 adult women, extra virgin olive oil was able to increase the weight loss effect of an energy restricted diet. A control group of 20 women was selected to eat a daily high-fat breakfast with added soybean oil, and an intervention group of 21 women received a high-fat breakfast with the addition of extra virgin olive oil.

After nine weeks, the average weight loss in the 21 women that received the breakfast with extra virgin olive oil was approximately 80% higher than the control group. Diastolic blood pressure decreased by an average of 5.1 mmHg, and pro-inflammatory cytokines were also reduced in the group that received extra virgin olive oil.

In another recent study, researchers compared a Mediterranean diet to an average Australian diet for their impacts on metabolic and cardiovascular risk biomarkers. The study included 152 participants, age 65 or greater. The Mediterranean diet was followed by 80 participants and 72 participants followed the average Australian diet. After 6 months, a significant reduction in F2-isoprostanes and triglycerides was seen in the participants who followed the Mediterranean diet.

F2-isoprostanes are produced by the reaction of free radicals with arachidonic acid. It is an under-utilized marker for oxidative stress. An innovative study found that the odds of coronary heart disease in individuals with the highest levels were elevated up to 30-fold compared to those with normal levels.

Triglycerides were long ago shown to increase vascular disease risk when elevated.

The blood marker most commonly evaluated for coronary artery disease risk is LDL cholesterol. The majority of the cardiovascular damage caused by LDL comes from its oxidized form. In a study of 71 subjects, a year-long Mediterranean diet intervention enriched with extra virgin olive oil was able to increase LDL’s resistance to oxidation by 6.46% and decrease the degree of LDL oxidative damage by 36.3%.

Summary

A growing amount of research shows that extra virgin olive oil and adherence to a Mediterranean diet dramatically reduces stroke and heart attack risk. Those who ingest the highest amount of an olive polyphenol called hydroxytyrosol were shown to live 9.5 years longer (after age 65). These findings were published in 2017.

These recent discoveries corroborate research uncovered by Life Extension® in 2005. Many readers of this magazine have used this data to supplement with nutrient formulas containing olive polyphenols and/or increase their dietary intake of extra virgin olive oil.

References
FLORASSIST® Immune Health

Probiotic Blend for Optimal Immune Support

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.

ITEM # 02124 • 30 vegetarian capsules • Retail price $26 • Super Sale price $17.55 • 4 bottles $16.20 each

For full product description and to order FLORASSIST® Immune Health, call 1-800-544-4440 or visit www.LifeExtension.com

Non-GMO.
HIGHLY PURIFIED ALASKAN FISH OIL
Super Omega-3
FISH OIL + OLIVE EXTRACT + SESAME LIGNANS

Broad-spectrum, Mediterranean health benefits of fish oil, olive polyphenols, and sesame lignans for heart and brain health.

- Pure fish oil from sustainable sources in pristine waters.*
- Just two Super Omega-3 softgels provide a similar olive polyphenol level as over 4 tablespoons of extra virgin olive oil.**
- Omega-3 activity stabilized with sesame lignans, a novel component of the heart-healthy Mediterranean diet.

For full product description and to order Super Omega-3, call 1-800-544-4440 or visit www.LifeExtension.com

Super Omega-3
Item #01982 • 120 softgels
Non-GMO Retail Price Super Sale Price
1 bottle $32 $21.60
4 bottles $18.90 each

* Wild caught. Gently processed in the US. ** Assumes 318 mg/kg of olive polyphenol in extra virgin olive oil as reported for Bertolli Extra Virgin Olive Oil. https://www.consumerlab.com/reviews/Extra-Virgin-Olive-Oil-Review/evoo/#results
# Other components in olive oil include monounsaturated fat, squalene, tocopherols, and phytosterols. Ingestion of olive oil may provide additional benefits beyond olive polyphenols.

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.
California Estate Organic Extra Virgin Olive Oil is American grown and lab-tested to be extremely high in polyphenols—over 600 mg per kg—as well as organic, authentic, and unadulterated.

This unfiltered extra virgin olive oil is:
- Cold-extracted at a small family farm in Yolo County, California, within hours of harvesting,
- Made entirely from green olives, handpicked to avoid bruising,
- Rich in distinctive and fruity flavor,
- Documented to have an exceptionally high content of potent polyphenols.

**California Estate Organic Extra Virgin Olive Oil**
Item #02008 • 500 ml
Non-GMO

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$33</td>
<td>$22.28</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$20.25 each</td>
</tr>
</tbody>
</table>

For full product description and to order California Estate Extra Virgin Olive Oil, call 1-800-544-4440 or visit www.LifeExtension.com
**Super $SALE**

**Discount Prices**

For Premium-Quality Products

Life Extension® customers take extraordinary steps to stave off disease and aging while attaining optimal health.

When customers buy products from Life Extension™, they are assured of receiving the **highest-quality** products based on the latest published scientific studies that demonstrate benefits.

These pages provide examples of **savings** customers can enjoy during the annual **SUPER SALE**.

Each purchase at these **discount prices** qualifies for valuable **Rewards Dollars** that reduce the cost of future orders.

---

To order call toll-free **1-800-544-4440**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
<th>Retail Price</th>
<th>SUPER SALE Price Per Bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Super Bio-Curcumin®</strong></td>
<td>400 mg, 60 vegetarian capsules, Item #00407</td>
<td>$38</td>
<td>$23.63 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Absorbs up to 7 times greater than conventional curcumin. Each bottle lasts two months.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AMPK Metabolic Activator</strong></td>
<td>30 vegetarian capsules, Item #02207</td>
<td>$38</td>
<td>$21.60 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Dual ingredient plant compounds support youthful AMPK activity to fight belly fat and promote metabolic health. Just one caplet daily dosing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Extend-Release Magnesium</strong></td>
<td>60 vegetarian capsules, Item #02107</td>
<td>$13</td>
<td>$7.88 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Provides immediate-release magnesium citrate along with a 6-hour extended-release magnesium for optimal benefits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™</strong></td>
<td>60 100 mg softgels</td>
<td>$62</td>
<td>$35.10 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Item #01426 Superior ubiquinol form of CoQ10 (100 mg) plus shilajit shown to double mitochondrial CoQ10 levels.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Health Booster (Once-Daily)</strong></td>
<td>60 softgels, Item #02091</td>
<td>$54</td>
<td>$34.20 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Just one softgel provides three forms of vitamin K, blueberry extract, gamma tocopherol, sesame lignans, chlorophyllin, lycopene, trans-zeaxanthin, meso-zeaxanthin, and lutein. Taken individually these ingredients cost 2 to 3 times more! (2-month supply)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vitamin D3</strong></td>
<td>5,000 IU, 60 softgels, Item #01713</td>
<td>$10</td>
<td>$5.85 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>High-potency vitamin D in a softgel to provide greater absorption into the bloodstream.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MacuGuard® Ocular Support with Saffron</strong></td>
<td>60 softgels, Item #01992</td>
<td>$25</td>
<td>$15.75 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Eye protection with meso-zeaxanthin, lutein, trans-zeaxanthin, and saffron to support healthy vision.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ComfortMax™</strong></td>
<td>60 vegetarian tablets, Item #02202</td>
<td>$44</td>
<td>$26.10 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Two natural compounds to reduce common discomforts and improve freedom of movement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>N-Acetyl-L-Cysteine</strong></td>
<td>60 vegetarian capsules, Item #01534</td>
<td>$14</td>
<td>$8.33 (four-bottle purchase)</td>
</tr>
<tr>
<td></td>
<td>Increases cell glutathione levels to mitigate oxidative stress.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
<table>
<thead>
<tr>
<th>Product Description</th>
<th>Quantity</th>
<th>Item #</th>
<th>Retail Price</th>
<th>SUPER SALE Price Per Bottle</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHEA (Dehydroepiandrosterone) • 25 mg, 100 capsules, Item #00335</td>
<td></td>
<td></td>
<td>$16</td>
<td>$9.90 (four-bottle purchase)</td>
</tr>
<tr>
<td>A hormone that protects against age-related decline, benefits overall health.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super K with Advanced K2 Complex • 90 softgels, Item #02034 (3 month supply)</td>
<td></td>
<td></td>
<td>$30</td>
<td>$18.23 (four-bottle purchase)</td>
</tr>
<tr>
<td>Provides two forms of vitamin K2 (1,000 mcg of immediate-release MK-4 and 100 mcg of new all-trans long-acting MK-7), along with 1,500 mcg of K1. (All-trans K2 is 100% biologically active.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitochondrial Energy Optimizer with BioPQQ® • 120 capsules, Item #01868</td>
<td></td>
<td></td>
<td>$68</td>
<td>$40.50 (four-bottle purchase)</td>
</tr>
<tr>
<td>Glycation-protection formula helps maintain cell function, protein structural integrity, and mitochondrial biogenesis. Provides high potency carnosine along with R-lipoic acid, PQQ, benfotiamine, luteolin, and taurine.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLORASSIST® Prebiotic Chewable • 60 chewable tablets, Item #02203</td>
<td></td>
<td></td>
<td>$20</td>
<td>$11.70 (four-bottle purchase)</td>
</tr>
<tr>
<td>Strawberry-flavored FLORASSIST® Prebiotic Chewable helps promote healthy bifidobacteria levels in as little as 14 days using a novel XOS prebiotic fiber.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PQQ Caps • 10 mg, 30 vegetarian capsules, Item #01500</td>
<td></td>
<td></td>
<td>$18</td>
<td>$9.90 (four-bottle purchase)</td>
</tr>
<tr>
<td>Promotes generation of new mitochondria in aging cells.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Protect • 36-day supply, Item #02101</td>
<td></td>
<td></td>
<td>$24</td>
<td>$14.40 (four-box purchase)</td>
</tr>
<tr>
<td>Microdose lithium and proline-rich polypeptide to inhibit cognitive decline.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Super Omega-3 EPA/DHA with Sesame Lignans &amp; Olive Extract • 120 softgels, Item #01982</td>
<td></td>
<td></td>
<td>$32</td>
<td>$18.90 (four-bottle purchase)</td>
</tr>
<tr>
<td>Highly purified EPA (1,500 mg) and DHA (1,000 mg) from Alaskan Pollock, sesame lignans plus potent olive extract provides essential components of the Mediterranean diet in four softgels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearly EPA/DHA • 120 softgels, Item #02200</td>
<td></td>
<td></td>
<td>$30</td>
<td>$18 (four-bottle purchase)</td>
</tr>
<tr>
<td>Concentrated Omega-3 uses a patented technology to provide 1,500 mg of EPA and 1,000 mg of DHA in four smaller clear softgels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone Restore Chewable Chocolate Tablets • 60 chewable tablets, Item #02123</td>
<td></td>
<td></td>
<td>$22</td>
<td>$12.83 (four-bottle purchase)</td>
</tr>
<tr>
<td>This new formula provides bone-building nutrients in a tasty sugar-free, chewable, chocolate-flavored tablet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycemic Guard™ • 30 vegetarian capsules, Item #02122</td>
<td></td>
<td></td>
<td>$42</td>
<td>$25.20 (four-bottle purchase)</td>
</tr>
<tr>
<td>Glycemic Guard™ contains plant extracts help maintain healthy after-meal blood glucose levels and insulin response, and promote healthy HbA1c levels.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optimized NAD+ Cell Regenerator™ with Resveratrol • 30 vegetarian capsules, Item #02145</td>
<td></td>
<td></td>
<td>$50</td>
<td>$30.60 (four-box purchase)</td>
</tr>
<tr>
<td>NIAGEN® nicotinamide riboside, trans-resveratrol, quercetin, fisetin, trans-pterostilbene, and more support healthy cellular metabolism, fight age-related fatigue, regulate genes that control aging.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
Lactoferrin provides support for the body’s immune system.\(^1,2\)

In addition, new research shows lactoferrin increases tear production following cataract surgery by **95%** and tear break-up time by **77%**, which promotes eye protection.\(^3\)

Contains milk.

Bioferrin® is a registered trademark of Glanbia.

References
Milk Thistle
May Help Protect Against Second-Hand Cigarette Smoke

Smoking is a huge cause of preventable death\(^1\) and has a devastating reach of deadly consequences from lung cancer, heart disease, stroke, osteoporosis, and to cancers in many parts of the body.\(^2,3\)

Even more insidious is the exposure to second-hand smoke. That is, the involuntary inhalation of smoke from a burning cigarette or a smoker exhaling.

According to the Centers for Disease Control, “there is no risk-free level of second-hand smoke exposure; even brief exposure can be harmful to health.”\(^4\)

In fact, second-hand smoke has been cited as a carcinogen by the US Environmental Protection Agency and the National Toxicology Program.\(^5\)

Second-hand smoke contains a long list of dangerous poisonous chemicals and gases, including carbon monoxide (found in car exhaust), butane (used in lighter fluid), hydrogen cyanide (used in chemical weapons), ammonia (used in household cleaners), and toluene (found in paint thinners).

Additionally, second-hand smoke contains arsenic (used in pesticides), lead (formerly found in paint), and cadmium (used to make batteries).\(^6\)

This article reveals a novel way to potentially help protect against the adverse impact of second-hand cigarette smoke.
When nonsmokers are exposed to second-hand smoke, they may as well be smoking since they are breathing many of the same cancer-causing chemicals as do smokers.\\n
Just living with a smoker can dramatically increase the risk of lung cancer.\\n
Approximately 2,500,000 non-smokers have died from health problems caused by second-hand smoke since 1964.\\n
That's 2.5 million nonsmokers who died from other people's smoking.)\\n
But by far, smoking—and second-hand smoke—is the biggest risk factor for developing chronic obstructive pulmonary disease (COPD).\\n
In the US, COPD is the third leading cause of death. Worldwide, the disease kills about 3 million people annually—roughly twice the number who die from lung cancer.\\n
Cigarette smoke, which contains thousands of toxic compounds and chemicals, causes the airways to become inflamed and damaged. Although the symptoms of COPD can be treated, little could be done to reduce smoke-induced lung inflammation or to prevent the changes associated with COPD.\\n
Until now.\\n
Three recent studies reveal that silymarin, a compound derived from milk thistle, has protective properties that can help reduce smoke-induced inflammatory responses—while also preventing the inflammation-induced damage to the airways that produces COPD.\\n
This information is essential for the 12% of Americans over 65 who still smoke despite the known risks, as well as for the millions more whose health is threatened by exposure to second-hand smoke.\\n
COPD – The Most Ignored Smoking-Related Risk\\n
Most people think of lung cancer as smoking's biggest health risk. But while lung cancer strikes about 222,500 people each year, in the United States that figure is dwarfed by the nearly 12 million victims of COPD.\\n
Preventing COPD can help prevent lung cancer, since COPD is a major risk factor for developing the disease.\\n
If you've ever known someone who suffers from it, you know how unpleasant COPD is. It's a progressive condition that makes it hard to breathe, although in the early stages there may be only mild symptoms. COPD includes chronic bronchitis, emphysema, and sometimes asthma. As the condition progresses, everyday activities like getting dressed can become extremely difficult.\\n
COPD is commonly due to tobacco smoke, which causes chronic inflammation in the airways (called the bronchi) that deliver air in and out of the lungs. Over time, this results in fibrosis, a form of scarring that narrows the bronchi substantially, making breathing increasingly difficult.\\n
Oxygen therapy is the primary means of reducing the death risk from COPD. Inhaled medications such as bronchodilators and corticosteroids may improve symptoms, but they have no impact on mortality. This leaves many COPD sufferers with nothing much but palliative care and the certainty of an untimely death.\\n
Making matters worse, because COPD contributes to chronic inflammation throughout the body, it also increases the risk of other inflammation-linked diseases.\\n
People with COPD have markedly elevated risks of lung cancer, cardiovascular disease, and stroke. COPD is closely associated with frailty (a syndrome that includes muscular weakness and balance disturbances), which is itself associated with risk of early death. COPD is also associated with osteoporosis, anxiety, malnutrition, and depression.
Research Update

The Dangers of Second-Hand Smoke

**Passive smoking** occurs when a person is exposed to someone else’s tobacco smoke. Nonsmokers who are exposed to cigarettes are still breathing the same harmful particles and chemicals that make smoking so harmful to smokers.29

Studies show that passive smoking raises the risk of lung cancer (and other cancers), heart attacks, stroke, depression, and frailty—all of which increase the risk of an early death. Living with a smoker can increase the risk of lung cancer by as much as 30%.7

In fact, more than 20% of people with COPD don't smoke.30

Whether you’re the one doing the smoking or not, the bottom line is there is no safe level of exposure to cigarette smoke. But there is good news. While it can still be difficult to avoid others’ smoke, there is something you may do to help protect yourself from its harmful effects.

**Silymarin** has been shown to reduce the inflammation caused by smoke exposure. This can possibly enable you to protect yourself, if not from the smoke itself, then at least from some of its deadly consequences.

How Silymarin may Help Protect Against COPD

Silymarin and its main component, silibinin, are the most important bioactive constituents of milk thistle. Extracts from milk thistle have been used for more than 2,000 years as traditional therapies for liver diseases. They are still used for that purpose today.31

The reason silymarin constituents are beneficial in liver disease is largely because of their ability to combat chemical stress and inflammation—both of which contribute to liver diseases such as nonalcoholic fatty liver disease (NAFLD), cirrhosis, and some types of hepatitis.

More recently, scientists have started to explore silymarin’s anti-inflammatory properties in other diseases as well, broadening the scope of potential uses for this ancient remedy. These studies have highlighted silymarin’s powerful ability to combat the smoke-induced causes of COPD.

Three of the most recent silymarin studies offer, for the first time, real hope for COPD sufferers, for whom few therapies can change the inflammation-driven course of the disease.

**Study #1**

In the first study, mice were exposed to the equivalent of 1.5 packs of cigarette smoke per day for four weeks.20

Even though four weeks are much less than the lifetime of exposure most older COPD patients have experienced, this limited smoke exposure still produced profound increases in inflammation in the mice. This was demonstrated by high levels of inflammatory cell infiltration, thickening of airway walls, and obstruction of their airways—all features of COPD in humans.20

But when the animals were pretreated with silymarin, all of the inflammatory changes caused by the cigarette smoke were sharply reduced.20 There were also significant reductions in the secretion of pro-inflammatory signaling molecules (cytokines) such as TNF-alpha, IL-1beta, and IL-8.

Smoking is also known to decrease one of the body’s most protective enzymes, called superoxide dismutase (SOD). SOD is one of the body’s primary internal defenses, and plays a critical role in reducing oxidative stress and inflammation.

This study showed that the higher dose of silymarin prevented the decreases in SOD caused by cigarette smoke—a powerful demonstration of silymarin’s natural healing properties.20

**Study #2**

The second recent study was performed by the same group of researchers, this time using human bronchial cells in culture in order to shed light on how silymarin produces such dramatic anti-inflammatory benefits.21 They found that silymarin reduced the secretion of inflammatory cytokines caused by cigarette smoke by modulating a signaling pathway called ERK MAPK, which is a natural cellular stress-response system that induces inflammation.21

These anti-inflammatory actions were so impressive that the researchers suggested that silymarin could be an “ideal agent” for treating inflammatory lung diseases like COPD.

**Study #3**

The most recent study, published in mid-2017, is possibly the most exciting. Not only did it confirm silymarin’s ability to reduce inflammation in the bronchi—it also revealed that it reduced the damage caused by the inflammation.

For this study, researchers exposed mice to even smaller amounts of cigarette smoke—
equivalent to just one hour of cigarette smoke per day (that’s eight cigarettes) for four weeks.\textsuperscript{22} The mice also received a powerful toxin to boost the inflammatory response.

Just before the daily hour of cigarette smoke exposure, mice received either a high or low oral dose of \textit{silibinin} (also known as silybin), an active component of silymarin.\textsuperscript{22}

This study demonstrated that both doses of silibinin sharply reduced the inflammatory changes in the bronchi in a fashion similar to the other studies.\textsuperscript{22}

In addition, the researchers found that silibinin significantly suppressed the cigarette smoke-induced \textit{scarring} and fibrosis typical of humans with COPD. This protective action occurred in part by silibinin’s ability to directly inhibit the expression of \textit{TGF beta-1}, a protein that can increase local inflammation, and whose expression is increased by inflammation and smoke.

These three studies are the first demonstration of a therapy that can reduce the life-threatening scarring in smokers’ lungs that severely compromises normal air exchange. This lung scarring eventually makes breathing so difficult that victims often have difficulty with even the simplest tasks such as speaking, eating, or drinking.

---

**Smoking’s Deadly Inflammatory Consequences**

Tobacco use, mainly cigarette smoking, is the leading cause of preventable death in America.\textsuperscript{34} It is a major contributor to COPD, and it greatly increases cardiovascular disease risks and visual impairment, largely through its promotion of inflammation throughout the body.\textsuperscript{22,34}

Both the smoke itself (which is really just a cloud of tiny particles of burned tobacco, added chemicals, and paper), and the chemical nicotine that it contains, contribute to chronic smoke-associated inflammation.\textsuperscript{35} And inflammation, as we now know, contributes to virtually every age-related chronic disease, including those as diverse as cancer, osteoporosis, and Alzheimer’s disease.\textsuperscript{16,17,28,31,36,37}

Research highlights the impact of nicotine on inflammatory changes in blood vessels that eventually produce arterial thickening, stiffening, and reduced blood flow to major organs—the underlying factors of cardiovascular disease.\textsuperscript{35} Inflammatory changes damage endothelial function,\textsuperscript{24,33,36} which prevent arteries from being able to regulate blood flow and pressure, while also making platelets and vessel walls “stickier.” These processes increase the likelihood of a catastrophic blood clot that triggers a heart attack or stroke.

As we’ve seen in this article, extracts of milk thistle—silymarin and its chief component, silibinin—have a powerful anti-inflammatory effect that can help protect against smoke-induced inflammation and its consequences.

---

**The Future of Silymarin**

The growing realization that chronic inflammation is one of the deadliest effects of smoking\textsuperscript{12} suggests that silymarin could be a useful preventive agent for anyone who is, or ever has been, exposed to cigarette smoke.

As an added benefit, another study has demonstrated intriguing evidence that silymarin could have a powerful preventive effect on bladder cancer, which is associated with tobacco smoke exposure.\textsuperscript{33}

With increasing evidence that silymarin’s anti-inflammatory properties extend well beyond its traditional role as a liver tonic, it seems likely that this is just the tip of the iceberg of silymarin’s benefits for the body.

---

**Summary**

With no medical cure, and only palliative therapy available, COPD sufferers have been condemned to premature death.

New studies demonstrate that extracts of the milk thistle—silymarin and its chief component, silibinin—markedly reduce the disastrous impact of chronic, smoke-induced inflammation on lung tissue. This results in potential protection against the kind of physical and biochemical changes seen in COPD.

Silymarin’s anti-inflammatory effects may also have benefit in other smoking-related disorders, given the important impact of inflammation on cardiovascular disease and cancer.
Anyone exposed to tobacco smoke (whether directly or indirectly) may consider supplementation with milk thistle, in the hopes of evading COPD, heart attacks, strokes, and even some cancers.

And at this point “hope” is about all we can expect as the deadly effect of second-hand smoke, and how to prevent it from killing those unintentionally exposed, has yet to be fully documented.

With regular milk thistle supplementation, it may finally be possible to provide some genuine protection against this powerful environmental threat.

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

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

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

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

BioActive Complete B-Complex
Item #01945 • 60 vegetarian capsules

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$12</td>
<td>$8.10</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$7.20 each</td>
</tr>
</tbody>
</table>

Non-GMO

Reference
Milk thistle—rich in silymarin—is one of nature’s most powerful weapons to support liver health. Scientific studies demonstrate silymarin’s ability to provide potent protection for your liver.¹ ²

Life Extension®’s European Milk Thistle contains standardized, top-grade potencies of silymarin, silybin, isosilybin A, and isosilybin B, providing a full spectrum of liver-supportive compounds. This unique formula includes phosphatidylcholine, a nutrient that promotes better absorption of milk thistle extract.³

The silymarin contained in European Milk Thistle is absorbed nearly 5 times better than silymarin alone, and its bioavailability to the liver is 10 times better.

European Milk Thistle Advanced Phospholipid Delivery
Item #01922 • 60 Softgels

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$28</td>
<td>$18.90</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$16.88 each</td>
</tr>
</tbody>
</table>

Non-GMO

For full product description and to order European Milk Thistle Advanced Phospholipid Delivery, call 1-800-544-4440 or visit www.LifeExtension.com

References

SILIPHOS® is a registered trademark of Indena S.p.A., Italy.

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.
CoQ10 Reduces Heart-Failure Deaths
The symptoms of advanced heart failure are debilitating.

Any kind of exertion results in rapid onset of fatigue and shortness of breath. Even simple tasks like washing the dishes or walking a block can leave you exhausted.

Today’s heart-failure patients are prescribed multiple drugs that yield important benefits. Yet as their heart deteriorates, they are often restricted to a bed, couch, or wheelchair.

Americans are living longer and surviving early-life cardiac events via improvements in prevention and treatment. These include stenting procedures to open blocked coronary arteries, along with greater use of blood tests to identify risk factors before acute heart attack manifests.

As a result of these advances, people who would have succumbed to heart disease in mid-life face an epidemic of heart failure in their later years. The consequences include physical and mental impairment, decreased quality of life, and premature death.1-6

Enormous strides have been made in delaying the onset of heart disease, but more than prescription drugs are needed for humans who now live longer.

Recent studies are confirming proper use of coenzyme Q10 (or CoQ10) as a potential game-changer.

These clinical trials show that CoQ10 supplements can work with conventional medications to restore the heart’s natural pumping ability.

This report provides a review of compelling human studies that are increasingly being recognized by forward-thinking cardiologists.
Clinical Trials: CoQ10 Reduces Heart Failure

Advanced heart failure patients do not live normal lives. Their limbs swell as fluid accumulates, unable to be pumped back to the heart and excreted by the kidneys. Fluid can accumulate in the abdominal cavity as well, leaving them bloated, physically heavy, and at risk for infection. Quality of life drops abysmally as heart failure progresses, leading to increased stress on patients and their caregivers.

Heart failure can lead to other cardiovascular conditions, including stroke, blood clots, and heart arrhythmias. In heart-failure patients, the most common of these arrhythmias is atrial fibrillation, which can exacerbate existing heart failure.7-9

One-half of all heart-failure patients die within five years of diagnosis.10 It has been known for more than a decade that people with heart failure regularly have markedly lower levels of the energy-essential nutrient CoQ10 in their blood.

To add insult to the age-related decline in CoQ10 synthesis in the body, many congestive heart failure patients are prescribed statin drugs that lower CoQ10 levels even more.11,12

Indeed, in one large study of older adults with heart failure, subjects with CoQ10 levels below a cut-point were twice as likely to die compared to those with levels above that value.12

Two-Year CoQ10 Trial

CoQ10 deficiency deprives the heart of a critical factor in its energy supply, and can be a key contributor to the impaired pumping function we identify as heart failure.13 This is because mitochondria in the heart (and everywhere else in the body) rely on CoQ10 for energy production.14

Seeking an effective therapy, an international group of cardiologists and cardiac surgeons set out to determine if long-term supplementation with CoQ10 could produce improvements in patients with heart failure. The researchers designed a randomized, controlled, double-blinded multicenter trial.15

They enrolled 420 people with moderate-to-severe heart failure, assigning them randomly to receive either placebo or CoQ10, 100 mg three times daily for two years, in addition to their standard drug therapy.

New York Heart Association (NYHA) Functional Classification32

<table>
<thead>
<tr>
<th>HEART FAILURE CLASS</th>
<th>PATIENT SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I (Mild)</td>
<td>No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or dyspnea (shortness of breath).</td>
</tr>
<tr>
<td>Class II (Mild)</td>
<td>Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitation, or dyspnea.</td>
</tr>
<tr>
<td>Class III (Moderate)</td>
<td>Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes fatigue, palpitation, or dyspnea.</td>
</tr>
<tr>
<td>Class IV (Severe)</td>
<td>Unable to carry out any physical activity without discomfort. Symptoms of cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.</td>
</tr>
</tbody>
</table>

The New York Heart Association (NYHA) Functional Classification system has become the standard for measuring symptoms that affect functioning related to heart failure.32
By the end of the study, **26%** of placebo recipients had reached the primary long-term endpoint, i.e. development of a major adverse cardiovascular event (e.g., heart attack, stroke, death).

But among subjects receiving the CoQ10 supplement, only **15%** reached that endpoint, a significant decrease that translated into a **50% reduction** in the risk of those adverse events.\(^{15}\)

In addition, supplemented subjects had a lower death rate from both cardiovascular (9% vs. 16%) and all causes (10% vs. 18%), as well as a significantly lower incidence of hospital stays for heart failure.

Supplemented subjects also showed a significant rate of improvement in their scores on the New York Heart Association’s four-point scale of heart failure severity after two years.\(^{15}\)

Taken together, the results of this study show that CoQ10 treatment of patients with chronic heart failure is safe, improves symptoms, and reduces major adverse cardiovascular events—a tremendous stride forward in improving outcomes in the many millions of heart failure sufferers.\(^{15}\)

**Supporting Studies**

Several other human studies have shown significant benefits of CoQ10 supplementation in heart failure victims.

For example, CoQ10 can improve the contractility (squeeze) exerted by the heart in patients with mild-to-moderate heart failure (those in NYHA Classes II and III).\(^{16}\) This was shown in a study using a **300 mg** daily dose for just four weeks, compared with placebo.\(^{16}\)

Supplementation not only boosted serum CoQ10 levels by a factor of three, but also improved a measure of heart wall thickening during contraction by up to **15.6%**.

The amount of blood pumped out of the heart with each beat increased by **15%** in supplemented subjects, accompanied by a **21% decrease** in volume at the end of the beat. These are favorable measures of the heart's overall efficiency at pumping blood out to the body.

No side effects were observed in this study, nor in a follow up study of similar design.\(^{16,17}\)

In the follow-up study, in addition to improvements in contractility (squeeze) and pumping capacity, CoQ10 supplementation at the same dose improved **endothelial function**, which is an essential measure of the health of the delicate lining of arteries.\(^{17}\)
**Facts about Heart Failure in the United States**

“Heart failure” occurs when the heart’s ability to pump blood is insufficient to meet the body’s needs for nutrients and oxygen. This does not mean that the heart has stopped beating, but it is a serious condition that can lead to many complications, and when severe enough, to death.

Here are some statistics about heart failure in the United States:

- Heart failure affects about 5.7 million adults in the United States.
- In 2009, one in 9 deaths included heart failure as contributing cause.
- One-half of all heart-failure patients die within 5 years of diagnosis.
- An estimated $30.7 billion is spent each year as a result of heart failure to cover the costs of health-care services, medications, and missed days of work.
- Heart-failure rates vary by geography, with the highest incidence in a broad band across the South and Southern Midwest.

Another study looked at the use of CoQ10 in heart failure patients who have developed a heart arrhythmia called atrial fibrillation, in which the heart’s upper chambers tremble rapidly but cannot push blood effectively into the larger, pumping ventricles. People with heart failure frequently develop atrial fibrillation that can lead to heart failure, making it vital to treat either condition to prevent the other.

In this study, patients with known heart failure received either standard drug therapy only (control group), or standard drug therapy plus CoQ10, and were monitored for the development of atrial fibrillation. While over 22% of subjects in the control group suffered atrial fibrillation episodes after 12 months of treatment, just 6.3% of CoQ10 recipients had the arrhythmia, demonstrating a significant reduction of atrial fibrillation in these heart-failure patients.

**Most Potent Form of CoQ10**

One other study deserves mention in this context, because it relates to the best form of CoQ10 for people with or at risk for heart failure.

The authors of this study stated that people with severe (NYHA class IV) heart failure often fail to attain proper CoQ10 blood levels, despite doses of standard CoQ10 in the ubiquinone form of up to 900 mg/day. This situation is attributable to the intestinal swelling that occurs in severe heart failure, which makes it difficult for the gut to absorb CoQ10.

In this study, overseen by renowned cardiologist Peter Langsjoen, MD, patients with advanced heart failure who had inadequate CoQ10 blood levels on an average 450 mg/day dose of ubiquinone were switched to an average of 580 mg/day of the ubiquinol form. Ubiquinol is known to have greater absorption.

This change resulted in a marked increase in plasma blood levels of CoQ10, to 6.5 μg/mL from 1.6 μg/mL, as well as significant improvements in pumping capacity and clinical status (from NYHA Class IV to Class II).

This study highlights the importance of the ubiquinol form of CoQ10.

For otherwise healthy individuals, 100 mg daily doses of ubiquinol taken with a fatty meal markedly boost CoQ10 plasma levels. For heart-failure patients, however, Dr. Langsjoen suggests starting off with 600 mg/day of ubiquinol to boost tissue concentrations of CoQ10. Heart failure patients can then maintain optimal CoQ10 serum levels with about 400 mg/day of ubiquinol taken with a fatty meal.
Summary

Heart-failure rates in the United States have reached epidemic proportions.

The primary underlying cause is aging, accompanied by years of poorly controlled diabetes, high blood pressure, and other risk factors including calcification of valves, atrial fibrillation and/or a previous heart attack.23

Mainstream medicine treats heart failure with a wide range of partially effective, but important prescription drugs.

Controlled clinical trials demonstrate that proper daily supplementation with CoQ10, a nutrient involved in providing energy to heart muscle cells, can mitigate symptoms and improve cardiac function in heart failure victims.

CoQ10 strengthens the heart muscle, boosts its capacity to pump blood throughout the body to nourish tissues, while reducing risk of atrial fibrillation.

While CoQ10 is naturally produced in the human body, tissue levels fall with age.24 Statin drugs further deplete CoQ10 levels.

Supplementation with ubiquinol, the form of CoQ10 that provides greater absorption, may help prevent or ameliorate signs and symptoms of heart failure, and reduce the severity of the condition, potentially improving quality of life for millions of Americans and their family members. •

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

What Risk Factors Drive It?

A number of diseases, as well as lifestyle factors that contribute to cardiovascular disease generally, add to the risk for developing heart failure, these include:

• Coronary heart disease and coronary artery disease, two terms that are often used interchangeably, is a narrowing of the arteries resulting from a buildup of plaque. This can eventually lead to a heart attack.28

• High blood pressure overtaxes the heart, causing the heart walls to thicken and enlarge, eventually making it inefficient at pumping blood.29

• Diabetes can damage the heart muscle even when there is no other heart disease present, a condition known as diabetic cardiomyopathy.30

• Obstructive sleep apnea, in which the upper airway is partially or completely obstructed during sleep, increases pressure in the heart, raises blood pressure, increases heart rate, lowers blood oxygen levels, and increases free radicals and inflammation.31

Many lifestyle factors also contribute to the risk of heart failure, including:

• Smoking tobacco
• A diet rich in fat, cholesterol, and sodium
• Obesity
• A sedentary lifestyle

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
What Are the Signs and Symptoms of Heart Failure?

Heart failure can progress for years without signs or symptoms, so that it is not detected until the heart’s ability to pump blood to the rest of the body is diminished. This is what makes it one of the most insidious and dangerous conditions we encounter.

When they do develop, signs and symptoms arise directly from the heart’s inability to pump enough blood to various parts of the body. These may include:

- Shortness of breath during normal daily activities
- Trouble breathing when lying down
- Weight gain with swelling of the feet, ankles, legs, or abdomen as a result of accumulation of fluid in the tissues
- Generally feeling tired and weak

In general, the sooner a diagnosis of heart failure is made, the sooner appropriate treatment can be initiated, aimed at boosting the heart muscle’s “squeeze” and improving blood flow throughout the body.

In more severe cases, and especially when symptoms impair function, a wide variety of medications may be added to enhance heart muscle contractility, and reduce resistance to blood flow.

There is, however, no single drug today that can cure or entirely resolve heart failure, making prevention a clear priority.

References

7. Available at: http://www.heart.org/HEARTORG/Conditions/Arrhythmia/AboutArrhythmia/What-is-Atrial-Fibrillation-AFib-or-AF_UCM_423748_Article.jsp#.Wah8Ho7KGMkI. Accessed September 28, 2017.
Cardiometabolic disease remains the leading cause of death for men and women worldwide. This conference highlights the recent advances in the treatment and prevention of coronary heart disease, stroke, and metabolic disorders such as insulin resistance and diabetes.

FEATURES:

Michael Ozner, MD, FACC, FAHA
COURSE DIRECTOR
Medical Director, Center for Prevention and Wellness, Baptist Health South Florida • Voluntary Assistant Professor of Medicine (Cardiology), University of Miami Miller School of Medicine
www.drozner.com

INCLUDES:

• 18 credit hours, including 18 AMA PRA Category 1 Credit(s)™ for health care providers
• State-of-the-art lectures covering the treatment and prevention of cardiometabolic disease (including heart attack and stroke prevention, insulin resistance and diabetes prevention, management and prevention of obesity and metabolic syndrome, hypertension and lipid guidelines)
• Opening keynote lecture: The Prevention Revolution and the End of the Heart Attack Epidemic, Michael Ozner, MD
• Welcome and Farewell Receptions
• Culinary medicine and live cooking demonstrations
• Special session on alternative approaches to cardiovascular disease prevention (stress management, vitamins, supplements and nutritional approaches that lower cardiometabolic risk, the role of exercise for optimal cardiovascular health)
• Panel discussions and Q&A with faculty
• Complimentary autographed copies of The Complete Mediterranean Diet and Heart Attack Proof
• Special discounts for Life Extension® members including a welcome gift package (please mention Life Extension discount upon registration).


**PQQ** (pyrroloquinoline quinone) activates genes involved in the production of cellular energy.1-5

Studies show **PQQ** supports heart health and cognitive function, complementing **CoQ10**.6,7

In fact, just **20 mg** per day of **PQQ** plus **CoQ10** promotes memory and attention in aging individuals.8

This is the **highest quality PQQ** available on the market today.

For full product description and to order **PQQ Caps** or any other **PQQ-containing formulas**, call 1-800-544-4440 or visit www.LifeExtension.com

Also available are **10 mg PQQ caps** (Item #01500) and **100 mg Super Ubiquinol CoQ10 with BioPQQ®** (Item #01733).

### References

### 20 mg PQQ Caps
This formulation contains **20 mg** of **PQQ** per capsule, which is the recommended daily dose.

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$32</td>
<td>$21.60</td>
</tr>
<tr>
<td>4 bottles</td>
<td></td>
<td>$16.20 each</td>
</tr>
</tbody>
</table>

Non-GMO
BioPQQ® is a registered trademark of MGC (Japan).

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.
Pump Up Your Heart Health

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

60 softgels • Retail Price is $62 • Super Sale price is $41.85 • 4 bottles are only $35.10 each

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

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.
The Government-Driven Opioid Epidemic

America has been trapped in a losing drug war for decades, despite having spent over $1 trillion combatting it.¹

Experts say the availability, addictive nature, and potency of opioid drugs has led to the worst narcotic crisis in American history—one that has killed hundreds of thousands of people and destroyed lives, businesses and families.²

Its victims range from the chronically poor in small-town Appalachia to middle-aged suburban moms, to a host of celebrities including the musician Prince and the actor Philip Seymour Hoffman.

Whether people are getting their fix from cheap heroin/fentanyl smuggled from other countries or through prescription drugs like OxyContin®, the results are too often the same: broken families, shattered lives, addiction, and death.

How did we get here? How did we end up in a place where, on a single day in early 2017, authorities in Louisville, Kentucky, responded to 43 overdoses in a 24-hour period? Where 50 overdoses were recorded in a 24-hour period in Philadelphia in late 2016?³ The answer is depressing, but not surprising.

The seeds of the opioid crisis were sown by FDA collusion with a pharmaceutical industry that subordinated humanity in exchange for the massive profits garnered by addicting millions of Americans to their opioid-based drugs.
Next, they expanded the range of conditions, thereby selling doctors on the idea that it was an acceptable solution for virtually any type of pain. Finally, they made the false claim that the drug was less addictive than other opioids because it was offered in a time-release capsule.6

The campaign worked. Sales of the blockbuster painkiller skyrocketed from $48 million in 1996 to $1.1 billion in 2000.6 By 2003, nearly half of OxyContin® prescriptions were written by primary-care physicians.6 One year later, it became the most widely abused opiate in the United States.6,7

Eventually, Purdue Pharma’s tactics came back to haunt it. In 2007, the company and three executives pleaded guilty to criminal charges. According to prosecutors, Purdue Pharma had intentionally lied about the addictive risk of OxyContin®. The company was slapped with $634 million in fines.6,8 These executives responsible were not sentenced to serve any jail time.9

The convictions did little to stop the flow of powerful opioids into American communities. By 2015, Purdue Pharma was pulling in $2.4 billion annually from the sale of opioids, including OxyContin®.10

Today, synthetic opioids like fentanyl—which are much more powerful than pure heroin—are tearing through American communities.11 According to the CDC, the death rate from synthetic opioids increased by 72.2% in a single year, from 2014 to 2015.12 Fentanyl is the drug that killed the pop star Prince.13
does is give the distributors a chance to redirect their flow of drugs through new channels, with no accountability.

“This was a gift to the industry,” he said.

This “gift” hasn’t stopped states from trying to stem the flow of opioids into their communities. In 2017, Mississippi, Missouri, and Ohio sued multiple pharmaceutical companies, alleging that the companies downplayed the dangers of opioids while engaging in deceptive marketing. Other states followed.

In filing these lawsuits, the states are running up against an entrenched and incredibly powerful lobby. A 2016 joint investigation between the Center for Public Integrity and the Associated Press found that the pharmaceutical lobby spent $880 million over a 10-year period to roll back laws that make it harder to overprescribe opioids, limit distribution, and hold irresponsible manufacturers and distributors accountable.

Overall, the industry is active in all 50 states and contributed to about 7,100 candidates for state-level offices. It operates through organizations like the Pain Care Forum and International Pain Foundation.

Corruption in the Open

When it comes to the current opioid epidemic, no one is taking responsibility for flooding towns and cities with powerfully addictive drugs.

Based on the hard facts that began 23 years ago, the opioid epidemic is a crisis of greed as much as addiction. And the pharmaceutical industry has found a willing partner in Congress to help protect the annual $9 billion trade in FDA-approved opioid drugs.

Here’s what Joseph Rannazzisi, the former head of the Drug Enforcement Agency’s office responsible for preventing prescription medicine abuse, told The Guardian about the relationship between the opioid lobby and the government:

“Congress would rather listen to people who had a profit motive rather than a public health and safety motive. As long as the industry has this stranglehold through lobbyists, nothing’s going to change.”

Rannazzisi was specifically talking about a 2016 federal law called the Ensuring Patient Access and Effective Drug Enforcement Act.

Despite its benign name, Rannazzisi charged that this law effectively gutted the DEA’s ability to regulate the dumping of opioids into disadvantaged communities.

According to this law, the DEA has to issue a warning to clinics and distributors who are suspected of diverting opioids into the illicit drug market. All this does is give the distributors a chance to redirect their flow of drugs through new channels, with no accountability.

“This was a gift to the industry,” he said.

This “gift” hasn’t stopped states from trying to stem the flow of opioids into their communities. In 2017, Mississippi, Missouri, and Ohio sued multiple pharmaceutical companies, alleging that the companies downplayed the dangers of opioids while engaging in deceptive marketing. Other states followed.

In filing these lawsuits, the states are running up against an entrenched and incredibly powerful lobby.

A 2016 joint investigation between the Center for Public Integrity and the Associated Press found that the pharmaceutical lobby spent $880 million over a 10-year period to roll back laws that make it harder to overprescribe opioids, limit distribution, and hold irresponsible manufacturers and distributors accountable.

Overall, the industry is active in all 50 states and contributed to about 7,100 candidates for state-level offices. It operates through organizations like the Pain Care Forum and International Pain Foundation.

What You Need to Know

A Nationwide Health Crisis

- The seeds of out-of-control opioid addiction were planted by the powerful influence of lobbying from the pharmaceutical companies.
- These drugs were misrepresented to government regulators as relatively safe.
- At the same time, doctors were encouraged to prescribe opioids in massive quantities.
- The result has been an epidemic of ruined careers, lives and relationships, as well as death by overdose at the astounding rate of nearly 100 victims a day.
Cameron’s Story

Tragically, parents and activists are no match for this lobby—and few people have tried harder to inject some sense into opioid laws than a mother from New Mexico named Jennifer Weiss-Burke. Her son Cameron died of a heroin overdose just before his 19th birthday in a story that has become too familiar.10

Cameron first used opioids when they were prescribed at a hospital when he was 16, after he broke his collarbone in wrestling practice. He was sent home with a prescription for Percocet®, with enough pills to last for weeks.

Like many people who use opioids, even for a short period, Cameron developed an increased tolerance. As his body continued to rapidly adjust to the drug, he developed a dependency.19 At this point, he couldn’t quit using opioids without suffering from physical withdrawal symptoms, which may include hallucinations, diarrhea, vomiting, fever, shakes, paranoia, and other painful symptoms.20,21 Soon after this, despite having been an excellent student, he became addicted to heroin, and he and his family spent the next two-plus years seeking treatment and trying to battle his addiction.

After Cameron’s death, his mother started a grassroots campaign to pressure the New Mexico state legislature into passing a bill that would limit initial prescriptions of opioids for acute pain to seven days. The idea was to limit non-chronic patients’ exposure to opioids to reduce the risk of tolerance and dependency.

But the pharmaceutical lobby wasn’t going to let this happen. While Jennifer Weiss-Burke publicly lobbied state legislators and appeared in local media, lobbyists representing drug companies began a stealth campaign to undermine her bill.

“They were going individually, talking to senators and representatives one-on-one,”10 she told the Center for Public Integrity.

Ultimately, the bill died in committee, joining failed bills in a host of other states. The common thread in each case? Intense, behind-the-scenes industry lobbying through groups like the Pain Care Forum or even patient advocacy organizations including the American Cancer Society’s lobbying arm.

The result is a virtually unchecked flow of powerful opioids and continued carnage among patients and victims of addiction.

Summary

America is in the middle of an addiction crisis. The epidemic is fueled by opioids like OxyContin® (including generic oxycodone versions approved by the FDA), along with imported heroin and fentanyl.

The easy availability of these drugs is no accident. Makers of these powerful opioids convinced government regulators that these oxycodone (synthetic heroin) drugs had a lower potential for abuse.
These dangerous/addictive medications were approved by the FDA on that basis. The drug companies then embarked on an unprecedented marketing campaign to identify doctors who would prescribe opioids and expand the list of conditions for which opioids are prescribed.

The human cost of this government/industry campaign has been devastating: almost 100 people die every day from opioid overdose, and thousands more suffer from broken families, destroyed careers, and shattered health.

In the face of this devastation, grass-roots campaigns—largely driven by grieving parents—have sprung up to push for common-sense laws at the state and federal level to regulate the prescribing and distribution of opioids.

These campaigns have proven no match for the pharmaceutical lobby, which has spent roughly $880 million over the past decade to squash any law regulating the industry.

A long book could be written about the startling nuances of how opioids have made such a dreadful comeback in the form of powerful addicting drugs that are prescribed by physicians.

This crisis has its genesis in the FDA approving OxyContin® in 1995, which enabled pharmaceutical companies to promote a range of oxycodone drugs as less prone to addiction and abuse.

As soaring overdose deaths made headline news, the FDA has taken steps to reduce oxycodone availability. That has caused addicts to switch to heroin and fentanyl, which are more lethal because potency varies so widely. ●

References
As you grow older, age-related stiffness and discomfort in the joints becomes a fact of life. Activities once routine become a challenge as limited mobility hampers your every move.

**ArthroMax® Advanced with UC-II® & AprèsFlex®** is a multinutrient formula that supports healthy joint function.

Two clinically validated ingredients in this formula: AprèsFlex® and UC-II® maintain cartilage and ease inflammation and thus may promote comfortable joint structure and function.

**Dual-Action Support for AGING JOINTS!**

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$36</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$24.30</td>
</tr>
<tr>
<td></td>
<td>$21.60 each</td>
</tr>
</tbody>
</table>

Item #01618 • 60 capsules

Non-GMO

AprèsFlex® is a registered trademark of Laila Nutracetics exclusively licensed to PL Thomas—Laila Nutra LLC. U.S. Patent No. 8,551,496 and other patents pending. FruiteX B® and OsteoBoron® are registered trademarks of VDF FutureCeuticals, Inc. U.S. Patent No. 5,962,049. UC-II® is a registered trademark of InterHealth N.I. U.S. patents 7,846,487; 7,083,820 and EPO patent EP 1435906B1; Canadian patent CA 2459981C; and Japanese patent JP 4800574B2.

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

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

Take Pleasure in Everyday Activities

ComfortMAX™ provides:

- **PEA** (palmitoylethanolamide), a fatty acid your body produces to suppress localized discomforts.
- **Honokiol** to reduce distress sensed in the brain.
- Proper morning dose of **PEA** and evening/nightly dose of **honokiol** and **PEA** in each box.

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

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
PLANT POWER!
Get a Protein Boost with Organic Pea Protein

Plant Protein Complete and Amino Acid Complex delivers:

- 18 grams of high-quality organic pea protein,
- Abundant branched-chain amino acids,
- Powerful prebiotics,
- Beneficial beta-glucans
- Digestive enzyme blend

Plant Protein Complete and Amino Acid Complex contains no dairy, egg, soy, gluten, lactose, animal products, or sugar. Just a natural vanilla flavor.

Plant Protein Complete and Amino Acid Complex

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 container</td>
<td>$34</td>
</tr>
<tr>
<td>4 containers</td>
<td>$20.70 each</td>
</tr>
</tbody>
</table>

For full product description and to order Plant Protein Complete and Amino Acid Complex, call 1-800-544-4440 or visit www.LifeExtension.com

Nutrim® products are manufactured under license from VDF FutureCeuticals, 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.
Blood Tests to Guard Against Holiday Health Issues

**LE:** As we go into the holidays and the New Year, are there any laboratory tests people should be doing?

**SF:** First of all, the Male and Female Panels are our most popular tests because of the tremendous value they offer and the wide range of tests they include. These panels are often the best place to start to get a big picture of what’s going on with your health. Our panels include tests such as DHEA, which is overlooked by most doctors. I find this shocking because DHEA is the youth hormone found in the highest quantities in the blood, far more than even testosterone, progesterone and estradiol combined. If your body places such an importance on DHEA, we should be paying close attention to it. To put the importance of DHEA into perspective, I created the following chart putting all the hormones into comparable units (note: methodologies vary for hormone testing so such a chart can never be fully precise, but the conversions are good for demonstration purposes)
As you can see, the level of DHEA-S (the form of DHEA tested in male and female panels) exceeds all the other steroid hormones combined! It is over 580 times higher than total testosterone for a man and over 10,700 times higher than total estrogens for a woman. Thus, DHEA is a key health hormone.

Research shows low levels of DHEA are connected to increased mortality, numerous diseases and aging issues. For example, in our November 2017 magazine issue we discussed the science of DHEA’s ability to increase the number of brain cells and its ability to combat specific features of metabolic syndrome. Without a doubt, DHEA is an essential hormone to check at regular intervals.

**LE:** What about blood-sugar levels, especially around the holiday season when there are so many tempting unhealthy foods and people tend to overeat? Is testing for fasting or after-meal glucose levels enough?

**SF:** The holidays are indeed a difficult time, especially when you factor in the stress they generate combined with all that available sugar. Testing your fasting glucose or after-meal (two to four hours) glucose is a great start. Many doctors still rely on only a fasting glucose to assess your health, but I will tell you from experience it is not always enough. Recently, Life Extension® began suggesting that a person test glucose two to four hours after eating to see how far it goes up. You don’t want your glucose to go more than 40 points above your fasting baseline, and if you can keep it even lower than a 40-points increase, all the better. If you don’t know your baseline glucose then 120-140 mg/dL for an after meal glucose is good, but 110-125 mg/dL is even better.

**LE:** Are insulin and hemoglobin A1c (HbA1c) also important to check?

**SF:** Yes, both of them are great tests. Mainstream medicine generally waits until your fasting blood sugar is elevated to test for HbA1c. In my opinion, this is too late. You should know your HbA1c levels earlier on so that you can take steps to mitigate the problem whether through lifestyle changes, drugs (like metformin and acarbose) and/or specific supplements. We suggest testing HbA1c levels much earlier than mainstream medicine. This test provides an important longer term assessment of your glucose levels and can tell us if excess glucose is causing havoc in your body via glycation, a process where the excess sugar

---

<table>
<thead>
<tr>
<th>Hormone (LabCorp)</th>
<th>Units</th>
<th>MALES</th>
<th>FEMALE (Luteal Phase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHEA-S</td>
<td>pg/dL</td>
<td>347,400,000</td>
<td>271,600,000</td>
</tr>
<tr>
<td>Total Testosterone</td>
<td>pg/dL</td>
<td>590,000</td>
<td>28,000</td>
</tr>
<tr>
<td>DHEA</td>
<td>pg/dL</td>
<td>366,000</td>
<td>366,000</td>
</tr>
<tr>
<td>Pregnenolone</td>
<td>pg/dL</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Progesterone</td>
<td>pg/dL</td>
<td>25,000</td>
<td>1,285,000</td>
</tr>
<tr>
<td>Total Estrogens</td>
<td>pg/dL</td>
<td>7,750</td>
<td>25,300</td>
</tr>
<tr>
<td>Estrone (E1)</td>
<td>pg/dL</td>
<td>4,200</td>
<td>8,200</td>
</tr>
<tr>
<td>Estradiol (E2)</td>
<td>pg/dL</td>
<td>2,510</td>
<td>12,740</td>
</tr>
<tr>
<td>Free Testosterone</td>
<td>pg/dL</td>
<td>1,790</td>
<td>210</td>
</tr>
</tbody>
</table>
is inappropriately binding to proteins in your body. The higher your number the worse that havoc is in your body. Do not wait until you are nearly diabetic to start checking HbA1c, start checking it early and keep it low to avoid the devastation of glycation. If you want to age faster, then keep your HbA1c high because the high glycation will make your body age faster and look older.

Fasting insulin is another valuable diagnostic test. I would suggest that whenever you do a fasting glucose, such as in a CBC and chemistry, add in a fasting insulin and try to keep it under five. If your fasting insulin is high, it is a warning flag of more problems to come. If both fasting insulin and HbA1c are high, you need to take corrective action as soon as possible.

A convenient way to check on glucose, insulin and glycation through HbA1c is with our new enhanced Diabetes Management Panel. It includes glucose, HbA1c (checking for glycation), insulin and lots more.

LE: Are there any tests that can tell you even earlier that you have a problem with glucose and insulin?

SF: Yes, the earliest phase of developing diabetes begins with insulin resistance. If you want to catch it before serious problems develop there are some tests that can detect it even before your fasting insulin and HbA1c go up. Interestingly, insulin resistance can occur in the muscles and the liver and people with diabetes typically have it happening in both places. Those who are obese have predominantly one form of insulin resistance with some degree of the other too before it becomes full-blown diabetes. Either way, your body is not responding appropriately to the insulin. The insulin should be effectively shuttling the glucose into the cells. With insulin resistance, you need ever increasing amounts of insulin to force the glucose into the cells. The problem is these higher spikes of insulin are just as bad as glucose spikes and ultimately lead to a host of accelerated aging and disease effects. So if you can test for excessive spikes of insulin you can address the process of moving toward diabetes at its earliest phase. Thus, the identification and treating of insulin resistance is the ultimate in preventive medicine since it is the first step in diabetes. Why wait until later when it is much harder to correct?

LE: What about the hormone connection to weight loss?

SF: It is such an important topic that we created a comprehensive weight loss panel. We took the popular Male and Female Panels and added hormones like cortisol, insulin and T3, the active thyroid hormone. These panels are described on the next page and can identify blood factors that preclude successful weight loss.

Dr. Scott Fogle is the Executive Director of Clinical Information and Laboratory Services at Life Extension®, where he oversees scientific and medical information as well as its laboratory division.

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
Glycemic Guard™ contains maqui-berry and clove extract. These plant extracts help maintain healthy after-meal blood glucose levels and insulin response, and promote healthy HbA1c levels.

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

Delphinol® is a registered trademark of MNL. Clovinol® is a registered trademark of Akay USA LLC.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
The Centers for Disease Control and Prevention say that more than 1 in 3 American adults have blood sugar levels that are too high.\(^1\)

Before type II diabetes is diagnosed, complications caused by glucose imbalance can internally smolder. These include kidney impairment;\(^2\),\(^3\) vision loss;\(^4\),\(^6\) neuropathy;\(^7\) atherosclerosis;\(^8\),\(^9\),\(^10\) and cancer.\(^11\),\(^12\),\(^13\)

From now until January 31, 2018 get a Diabetes Management Profile-Enhanced for only $49. This panel is described below and can detect sugar-related abnormalities in time to take corrective action.

### DIABETES MANAGEMENT PROFILE-ENHANCED---$49

**Glucose Markers:**
- Glucose + Insulin + Hemoglobin A1c

**Complete Blood Count:**
- Red blood cell count • Hemoglobin • Hematocrit
- MCV (mean corpuscular volume)
- MCH (mean corpuscular hemoglobin)
- MCHC (mean corpuscular hemoglobin concentration)
- RDW (red blood cell distribution) • White blood cell count
- Immune cell differentiation count • Platelet count

**Kidney Function:**
- Uric acid • BUN (blood urea nitrogen)
- BUN/creatinine ratio
- Creatinine
- eGFR (estimated glomerular filtration rate)

**Liver Function:**
- Alkaline phosphatase • LDH (lactate dehydrogenase)
- AST (aspartate aminotransferase)
- ALT (alanine transaminase)
- Total protein • Albumin • Globulin
- Albumin/globulin ratio • Bilirubin

**Lipid Profile:**
- Total cholesterol • Triglycerides
- HDL cholesterol • LDL cholesterol (calc.)
- VLDL cholesterol (calc.) • Total cholesterol/HDL ratio
- Estimated Coronary Heart Disease risk

**Electrolytes and Minerals:**
- Sodium • Potassium • Chloride
- Calcium • Phosphorus • Iron

### Fulfill Your New Year’s Weight Loss Resolution!

Millions commit to losing weight each year. Most fail to achieve desired results. One reason is underlying hormone and other imbalances that preclude removal of body fat stores.

Life Extension\(^*\) has designed a blood test panel to identify factors that contribute to unwanted weight gain.

Commercial labs would charge upwards of $1,000 for all these tests, but they are available from Life Extension’s personalized blood test service for only $275.

The box below describes the tests in this comprehensive Weight Loss Panel:

### WEIGHT-LOSS PANEL COMPREHENSIVE---$275

Provides all tests in Diabetes Management Profile above PLUS:

- TSH
- Free T3 • Free T4
- Reverse T3
- (thyroid panel)
- DHEA-S
- Free and Total Testosterone
- Estradiol (E2)
- Progesterone
- Vitamin D 25-hydroxy
- Cortisol
- C-reactive protein
- Ferritin

To order a Diabetes Management Profile-Enhanced for only $49 (LC100062), or Weight Loss Panel-Comprehensive (LC100028) for $275, call Life Extension today at 1-800-208-3444 or order online at www.LifeExtension.com

---

**References**

Arterial Protect supports the body’s ability to control arterial plaque formation.¹

Note: Do not change dosing or discontinue cardiovascular medications unless advised to do so by your physician.

Pycnogenol® and Centellicum® are registered trademarks of Horphag Research and the use of this product is protected by international patents.

Reference

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

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

Despite what seems to be commonly believed, there are indeed healthy foods that are also delicious. Avocados are a case in point.

A mainstay of South American and Mexican cuisine, the avocado is the fruit of the avocado tree, which may have originated in Peru, according to recent research. It is characterized by its smooth, creamy texture and famed for containing a much greater amount of healthy monounsaturated fats than any other fruit.

Let’s delve into some of the more notable health benefits of this nutrient-dense food.

**Fiber**

At about 7% by weight, the fiber content of the avocado is unusually high compared to most foods. That breaks down to about 25% soluble fiber, 75% insoluble fiber. Soluble fiber has the benefit of feeding beneficial gut bacteria and fiber in general is an important dietary component, linked to a lower risk of heart disease, aiding in weight control, and reducing blood-sugar spikes.

**Fats**

The avocado is a very fatty food (more than three-quarters of its calories derive from fat), but it’s the heart-healthy monounsaturated fat called oleic acid, which has been shown to lower inflammation and to reduce the risk of some types of cancer.

**Cholesterol**

Research has found avocados can improve lipid profiles. One study found that a diet featuring avocados led to a 17% reduction in total serum cholesterol in study subjects, a 22% decrease in LDL (“bad” cholesterol) and triglycerides and an 11% increase in beneficial HDL cholesterol.

**Nutrient Absorption**

Research shows avocados can enhance the absorption of some nutrients. A study in The Journal of Nutrition found that eating an avocado along with raw carrots or tomato sauce significantly enhanced the absorption of alpha- and beta-carotene and their conversion to an active form of vitamin A.
The Two-Per-Day multinutrient formula is superior to commercial multivitamins because it provides vastly higher potencies of vitamins, minerals and plant extracts.

Two-Per-Day also provides optimal forms of vital nutrients such as:

• **5-MTHF**: Active form of folate—up to 7 times more bioavailable.

• **Natural Vitamin E**: Twice as bioavailable as synthetic vitamin E

• **Selenium**: Three different forms that each have specific properties

• **B Vitamins**: Enzymatically active forms of B2 and B6

• **Added value**: Alpha lipoic acid and plant extracts like apigenin

The chart on the right side page compares Two-Per-Day to the most popular multivitamin commercial product (Centrum®).

We are pleased to announce our 29th annual SUPER SALE.

During this special event, clients can obtain our most advanced formulas at extra discounted prices.

When consumers purchase products from Life Extension®, they can rest assured that the quality of the product is backed by our commitment to achieving indefinitely extended lifespans.

During Super Sale, premium-quality formulas are available at prices below those charged by commercial companies. This enables health enthusiasts to obtain nutrients they can trust at discounted prices.

While Life Extension® loyalists always receive a 25% discount off the retail price, far greater savings occur when multiple bottles are purchased during Super Sale.

Life Extension’s Rewards provide more money-saving benefits. This program allows customers to earn reward dollars on every order that can then be applied to future purchases.

Clients also have the choice of joining the Premier Healthy Rewards program for just $49.95 a year, which doubles reward dollars, provides free shipping, and includes a $50 reward bonus to use on any product or blood test.

This year’s Super Sale begins November 13, 2017.

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.
### This Chart Compares the Formula of Centrum Silver® to Two-Per-Day:

<table>
<thead>
<tr>
<th>Sample Ingredient Comparison</th>
<th>Centrum Silver® Adults 50+</th>
<th>Life Extension® Two-Per-Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>2,500 IU</td>
<td>5,000 IU (beta-carotene+ preformed)</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>60 mg</td>
<td>500 mg</td>
</tr>
<tr>
<td>Vitamin D3</td>
<td>1,000 IU</td>
<td>2,000 IU</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>50 IU (synthetic)</td>
<td>100 IU (natural)</td>
</tr>
<tr>
<td>Thiamine (vitamin B1)</td>
<td>1.5 mg</td>
<td>75 mg</td>
</tr>
<tr>
<td>Riboflavin (vitamin B2)</td>
<td>1.7 mg</td>
<td>50 mg (with riboflavin-5-phosphate)</td>
</tr>
<tr>
<td>Niacin</td>
<td>20 mg</td>
<td>50 mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>3 mg</td>
<td>75 mg (with pyridoxal-5-phosphate)</td>
</tr>
<tr>
<td>Folate</td>
<td>400 mcg</td>
<td>400 mcg (5-MTHF)</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>25 mcg</td>
<td>300 mcg (methylcobalamin)</td>
</tr>
<tr>
<td>Biotin</td>
<td>30 mcg</td>
<td>300 mcg</td>
</tr>
<tr>
<td>Pantothenic acid</td>
<td>10 mg</td>
<td>50 mg</td>
</tr>
<tr>
<td>Iodine</td>
<td>150 mcg</td>
<td>150 mcg</td>
</tr>
<tr>
<td>Magnesium</td>
<td>50 mg</td>
<td>100 mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>11 mg</td>
<td>25 mg</td>
</tr>
<tr>
<td>Selenium</td>
<td>19 mcg</td>
<td>200 mcg (three forms)</td>
</tr>
<tr>
<td>Manganese</td>
<td>2.3 mg</td>
<td>2 mg</td>
</tr>
<tr>
<td>Chromium</td>
<td>50 mcg</td>
<td>200 mcg</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>45 mcg</td>
<td>100 mcg</td>
</tr>
<tr>
<td>Alpha lipoic acid</td>
<td>none</td>
<td>25 mg</td>
</tr>
<tr>
<td>Boron</td>
<td>none</td>
<td>3 mg</td>
</tr>
<tr>
<td>Inositol</td>
<td>none</td>
<td>50 mg</td>
</tr>
<tr>
<td>Lutein</td>
<td>250 mcg</td>
<td>5,000 mcg (from marigold extract)</td>
</tr>
<tr>
<td>Zeaxanthin</td>
<td>none</td>
<td>155 mcg (from marigold extract)</td>
</tr>
<tr>
<td>Lycopene</td>
<td>300 mcg</td>
<td>1,000 mcg</td>
</tr>
<tr>
<td>Apigenin</td>
<td>none</td>
<td>5 mg</td>
</tr>
<tr>
<td>Natural mixed tocopherols</td>
<td>none</td>
<td>20 mg</td>
</tr>
</tbody>
</table>

The retail price of a 60 day supply of the new Two-Per-Day tablets is $21. (Item # 02215)

Your price during Super Sale is reduced to $14.18. If you buy four bottles, the price is reduced to $12.60 per bottle (21 cents/day).

Two-Per-Day capsules are available at slightly higher price.

This page shows the incredible value of Two-Per-Day compared to a leading commercial formula.
Folate helps maintain homocysteine levels within the normal range, thereby promoting cardiovascular health. Folate also supports neurotransmitter synthesis—which in turn helps maintain cognitive abilities.

However, not everyone has sufficient activity of the enzyme required to convert folate to its biologically active form, 5-methyltetrahydrofolate, or 5-MTHF. 5-MTHF requires no enzymatic conversion to become metabolically active—providing maximum support for both cardiovascular and cognitive health.

Optimized Folate (1,000 mcg)
Item #01939 • 100 vegetarian tablets

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$15</td>
<td>$10.13</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$9 each</td>
<td></td>
</tr>
</tbody>
</table>

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

References

Non-GMO
A nationally recognized environmentalist and pioneer of the sharing economy, Los Angeles-based Bert Ball is the founder and executive director of L.A. SHARES. For the past 26 years, L.A. SHARES has worked with 4,000+ Californian companies to give away more than $180 million worth of goods and materials to almost 5,000 nonprofit organizations and schools throughout the City of Los Angeles.

According to Ball, decades of nurturing and growing an environmentally-focused organization that benefits communities and the planet has influenced the way he manages his mind/body health.

“Running an organization that has such an impact on the environment and the community has been a huge wake-up call in many ways,” he says. “When I started this organization, I was living on take-out food and working around the clock. As L.A. SHARES has grown, I have aged.”

In the past few years, Ball says he has made thriving rather than surviving a key priority. “I sleep much more than I did before, I shop more frequently for freshly prepared and preferably organic foods, plus I take daily vitamin and mineral supplements.” A lifelong sailor, Ball has lived in Marina del Rey for decades, where he takes regular bike rides and beach walks on the edge of the Pacific. “I started using sun block a few years ago,” he says, “after I got sunburned during a long traffic jam one day on the freeway.”
L.A. SHARES serves school teachers, nonprofit health clinics and others working for vitally important community organizations that are looking for computers, software, medical supplies, furniture, art materials, literary classics, musical instruments and more. While L.A. SHARES helps nurture young minds in underserved schools and parks as well as senior-citizen centers and other community hubs, perhaps the most important entity to benefit from L.A. SHARES is the Earth.

“Everything we give away would be otherwise headed for the landfill,” says Ball, who describes his organization’s societal effect as win-win-win-win. “Public schools, senior centers and other nonprofits receive essential supplies such as computers, art materials, cots and other furniture that they could never afford to buy. All L.A. SHARES demands in return is that the recipient write a thank-you letter to the donor.”

Corporations and individuals contribute valuable resources to the community and get tax breaks for donations of items they’d otherwise throw out.

“Even better,” Ball says, “the Bureau of Sanitation is spared the expense of hauling what would have been solid waste, less garbage goes into the earth and so the planet wins.” In fact, by utilizing L.A. SHARES, California businesses adhere to Assembly Bill 939, which requires them to reduce their landfill-bound waste. In 2015, L.A. SHARES helped local companies divert more than one million pounds of useful goods and materials from local landfills.

Educated at Lehigh University and Sarah Lawrence College, Ball is a baby boomer who by his own admission, “partied away my early twenties.” After a stint working as a paralegal in a New York corporate law firm, Ball moved to Los Angeles in the late 1980s with the intention of entering the film business. “Southern Californian culture bubbled with great energy then,” he recalls. “The mid-80s L.A. art scene featured great galleries with emerging artists, the weather was so much better than in New York, and biking, going to the beach, hiking and eating salad for dinner became part of everyday life.”

Although Ball scored a coup by getting accepted into UCLA’s highly competitive School of Theater, Film and Television’s Film Producers Master’s Degree Program, by the end of his course, “It was clear that the film business was loaded with huge risks, challenging personalities and far more politics than I ever imagined.” Reevaluating what he could do with his life, it dawned on Ball that “I wanted to be of service and do something that would help others who had never had the advantages that I had been given.”

Shortly after this realization, Ball visited the set of Steven Spielberg’s Peter Pan-inspired film “Hook” with his UCLA master’s class. Surveying the huge indoor sound studio, he asked then-studio head Peter Guber what would happen to the tons of plywood and lumber used to build the elaborate sets. When Guber replied, “It will all be thrown away,” Ball arranged to salvage tons of wood for Christmas in April, a national nonprofit organization that builds low-cost housing in underserved communities such as South Central Los Angeles.

“I saw that the studio’s trash was potentially someone else’s treasure,” he recalls. “Being able to divert these materials from a landfill and give them to people who could use them to build housing gave me a lot of satisfaction. Besides, there is really no such thing as throwing something away—there is no such place as ‘away.”’

Shortly afterward, Ball started a pilot program of the City of Los Angeles Cultural Affairs Department called Materials for The Arts.

“Most people I spoke to about my new job had no idea what I was talking about,” he says. “Remember, this was before household and corporate recycling programs had been instituted in major cities across the US. People weren’t even thinking about recycling household trash, surplus office supplies or furniture. Back then, numerous friends told me I was crazy to go into the garbage business when I could pursue a career in film production and make lots of money.”

As it happened, the pilot program was so successful that in 1994 it became an independent, nonprofit organization called L.A. SHARES.

“It was exciting to expand and service multiple nonprofit groups and schools rather than just artists,” Ball says.

By the late 1990s, L.A. SHARES was one of the biggest and busiest nonprofit materials-reuse organizations in the world.
During Bill Clinton’s presidential administration, Ball traveled to Washington, D.C, to meet with various Environmental Protection Agency executives and political and municipal leaders to advise on how state and city government agencies could create organizations similar to L.A. SHARES.

Back in the late 1990s, L.A. SHARES was one of the first nonprofits to harness the power of the internet to broaden its depth and reach so as to distribute as many goods to needy groups as possible.

“We were early adopters of internet technology and influence,” Ball says. "L.A. SHARES started hosting what are in essence online lotteries. Through our interactive website, qualified schools and nonprofits in the City of Los Angeles registered online for the L.A. SHARES program and created a detailed online profile of their organization, including an overall 'Wish List' and a ‘Top 20 List' of their most needed items, drawn from the donations we carry.

“When matching items came in, they were invited to bid on them. We asked them to promise that if they were chosen, they would pick up the goods directly from the donor and write the donor a thank-you note explaining how the goods are being used.” (The same system prevails today.) “We keep careful records to ensure that the goods are distributed fairly and equitably based on need, as well as how recently each of the groups has received other L.A. Shares items.”

Ball is the first to admit that he could never have accomplished all that he has without the help of strong partners. For example, the City of Los Angeles provides free warehouse space in the Los Feliz and Wilmington areas.

“From its inception, the key partner of L.A. SHARES has been the City of Los Angeles, with the direct support and participation from the Department of Public Works, Bureau of Sanitation, Solid Resources Citywide Recycling Division,” he says. “The current mayor of Los Angeles, Eric Garcetti, has also been a stalwart supporter of the organization, dating back to when he was a Los Angeles City Council member.”

Enlightened and proactive board members such as musician and cofounder of A & M Records Herb Alpert, various film industry executives, corporate sustainability officers and Los Angeles philanthropist Page Adler have also helped build L.A. SHARES into the powerhouse that it is today.

One of the reasons why Ball thinks L.A. SHARES continues to grow and thrive is that it avoids the problem that most standard recycling programs face, namely, that they are “end-of-life based,” as he puts it. “If you’ve got an empty bottle or a can, the Sanitation Department can help you dispose of it. But what about a bottle full of shampoo, an old-fashioned desk or a good battery? Our whole effort is aimed at interrupting the waste stream further up the line, when things like batteries or office equipment are still in good working order and can thus be used by others.” On an average day, Ball reports, L.A. Shares finds homes for about 150 items. On a great day, the organization has given away as many as 450 cots and chairs to a worthy recipient.

Ball is presently working with Lehigh University to perfect the L.A. SHARES software so that a staff of one can operate an online materials exchange program. “We intend to release an inexpensive system by 2019,” he says. “I like the idea of sharing our program with as many people as possible. My dream is that more people will start passing along their unwanted but still-functioning items to needy and deserving recipients.”

For more information on L.A. SHARES, to either donate or be a recipient, log onto Lashares.org

If you have any questions on the scientific content of this article, please call a Life Extension® Wellness Specialist at 1-866-864-3027.
As a man ages, maintaining a healthy prostate is key. We created Ultra Natural Prostate to help you maintain prostate health, so you can focus on what’s important. With over a dozen natural ingredients, this supplement promotes healthy prostate function, supports easier urination, inhibits inflammatory factors, and encourages natural division of prostate cells. Ultra Natural Prostate. The most comprehensive prostate health supplement.
NEW!

Smaller, Easier-to-Swallow

Clearly EPA/DHA
PURE FISH OIL

- Easier-to-swallow fish oil-only softgel
- Colorless patented omega-3 blend
- 5-star rating from International Fish Oil Standards Program
- 1,500 mg of EPA and 1,000 mg of DHA daily dose
- Smaller size softgel

For full product description and to order
Clearly EPA/DHA Highly Concentrated Omega-3,
call 1-800-544-4440 or visit www.LifeExtension.com

<table>
<thead>
<tr>
<th></th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$30</td>
<td>$20.25</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$18 each</td>
<td></td>
</tr>
</tbody>
</table>

Clearly EPA/DHA
Highly Concentrated Omega-3
Item #02200 • 120 softgels

Note: Super Omega-3 softgels are 25% larger by volume because they provide olive polyphenols, sesame lignans and 5-star rated fish oil. New Clearly EPA/DHA provides same omega-3 potency in easier-to-swallow smaller softgels.

IFOS™ certification mark is a registered trademark of Nutrasource Diagnostics, Inc.
If you are taking anticoagulant or antiplatelet medications, or have a bleeding disorder, consult your healthcare provider before taking this product. Supportive but not conclusive research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease.

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.
BOOST AND PROTECT YOUR VASCULAR HEALTH

Optimal heart health depends on many factors including proper functioning of the endothelium—the thin layer of cells lining the interior of the entire circulatory system.

TRIPLE-ACTION PROTECTION
Endothelial Defense™ with Pomegranate Complete and CORDIART™ contains three unique ingredients shown to improve endothelial health.

1. Pomegranate Complete provides potent polyphenols scientifically shown to support healthy blood flow.

2. CORDIART™ (extract from sweet orange peels) activates endothelial production of nitric oxide, which supports healthy circulation.

3. Superoxide dismutase (SOD) supports healthy arterial function and boosts the body’s protective enzymes.

For full product description and to order Endothelial Defense™ with Pomegranate Complete and CORDIART™, call 1-800-544-4440 or visit www.LifeExtension.com

Caution: Do not take this product if you are allergic to wheat or gluten.

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.
Give Your Multivitamin a BOOST!

GET THE COVERAGE YOU NEED. Health Booster provides important vitamins you may be missing.

<table>
<thead>
<tr>
<th>Non-GMO</th>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle</td>
<td>$54</td>
<td>$36.45</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$34.20 each</td>
<td></td>
</tr>
</tbody>
</table>

Optimal potencies of vitamin K2, gamma tocopherol, lycopene, chlorophyllin, lutein, zeaxanthin and lots more in one softgel.

For full product description and to order Once-Daily Health Booster, call 1-800-544-4440 or visit www.LifeExtension.com

Caution: Avoid use during pregnancy. Consult your healthcare practitioner before using this product if you are taking anti-coagulant or anti-platelet medications or have a bleeding disorder.

Lyc-O-Mato® is a registered trademark of Lycored, LTD. LuteinPlus® and Mz® are registered trademarks of NutriProducts Ltd., UK, licensed under U.S. Patent 8,623,428.

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.
FIVE EASY STEPS FOR ORDERING BLOOD TESTS:

1. Call 1-800-208-3444 to discuss and place your order with one of our knowledgeable Wellness Specialists. Online orders can also be placed at www.LifeExtension.com/labtesting.

2. After your order is placed, you will be mailed either a requisition form to take to your local LabCorp Patient Service Center or a Blood Draw Kit, whichever is applicable. (Please note: If a blood draw kit is used, an additional local draw fee may be incurred.)

3. Have your blood drawn.

4. Your blood test results will be mailed, emailed, or faxed directly to you by Life Extension.

5. Take the opportunity to discuss the results with one of our knowledgeable Wellness Specialists by calling 1-800-226-2370; or review the results with your personal physician.

IT’S THAT SIMPLE!
DON’T DELAY! CALL TODAY!

For Our Local Customers:
For those residing in the Ft. Lauderdale, Florida, area, blood-draws are also performed at the Life Extension Nutrition Center from 9:00 am to 2:00 pm Monday through Saturday. Simply purchase the blood test and have it drawn with no wait! Our address is:

5990 NORTH FEDERAL HIGHWAY,
FT. LAUDERDALE, FL, 33308-2633

Terms and Conditions
This blood test service is for informational purposes only and no specific medical advice will be provided. National Diagnostics, Inc., and Life Extension contract with a physician who will order your test(s), but will not diagnose or treat you. Both the physician and the testing laboratory are independent contractors and neither National Diagnostics, Inc., nor Life Extension will be liable for their acts or omissions. Always seek the advice of a trained health professional for medical advice, diagnosis, or treatment. When you purchase a blood test from Life Extension/National Diagnostics, Inc., you are doing so with the understanding that you are privately paying for these tests. There will be absolutely no billing to Medicare, Medicaid, or private insurance.

<table>
<thead>
<tr>
<th>RETAIL PRICE</th>
<th>YOUR PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC/CHEMISTRY PROFILE (LC381822) includes:</td>
<td>$35</td>
</tr>
<tr>
<td>Lipid Profile:</td>
<td>Blood Sugar:</td>
</tr>
<tr>
<td>Total cholesterol • Triglycerides</td>
<td>Glucose</td>
</tr>
<tr>
<td>HDL cholesterol • LDL cholesterol (calc.)</td>
<td></td>
</tr>
<tr>
<td>VLDL cholesterol (calc.)</td>
<td></td>
</tr>
<tr>
<td>Total cholesterol/HDL ratio</td>
<td></td>
</tr>
<tr>
<td>Estimated Coronary Heart Disease risk</td>
<td></td>
</tr>
<tr>
<td>Liver Function:</td>
<td>Kidney Function:</td>
</tr>
<tr>
<td>Alkaline phosphatase • LDH (lactate dehydrogenase)</td>
<td>Uric acid • BUN (blood urea nitrogen)</td>
</tr>
<tr>
<td>AST (aspartate aminotransferase)</td>
<td>Creatinine • BUN/creatinine ratio</td>
</tr>
<tr>
<td>ALT (alanine transaminase)</td>
<td>eGFR (estimated glomerular filtration rate)</td>
</tr>
<tr>
<td>Total protein •Albumin • Globulin</td>
<td></td>
</tr>
<tr>
<td>Albumin/globulin ratio • Bilirubin</td>
<td></td>
</tr>
<tr>
<td>Electrolytes and Minerals:</td>
<td>Complete Blood Count:</td>
</tr>
<tr>
<td>Sodium • Potassium • Chloride</td>
<td>Red blood cell count • Hemoglobin</td>
</tr>
<tr>
<td>Calcium • Phosphorus • Iron</td>
<td>Hematocrit • MCV (mean corpuscular volume)</td>
</tr>
<tr>
<td></td>
<td>MCH (mean corpuscular hemoglobin)</td>
</tr>
<tr>
<td></td>
<td>MCHC (mean corpuscular hemoglobin concentration)</td>
</tr>
<tr>
<td></td>
<td>RDW (red blood cell distribution)</td>
</tr>
<tr>
<td></td>
<td>White blood cell count</td>
</tr>
<tr>
<td></td>
<td>Immune Cell Differentiation Count</td>
</tr>
<tr>
<td></td>
<td>Platelet count</td>
</tr>
</tbody>
</table>

NEUROTRANSMITTER BASIC PANEL** (LC100058) $199
Serotonin, Dopamine, Epinephrine, Norepinephrine, GABA, Glutamate. Alternations in these six neurotransmitters play a significant role in contributing to symptoms such as cognitive disorders, depression, anxiety, diminished drive, fatigue and sleep difficulties, cravings, addictions, pain and more! Not available in NY.

FOOD SAFE ALLERGY TEST – BASIC** (LCM73001) $198
This test measures delayed (IgG) food allergies for 95 common foods.

FOOD SAFE ALLERGY TEST – EXTENDED** (LCM73002) $198
This test measures delayed (IgG) food allergies to an additional 95 foods.

FOOD SAFE ALLERGY TEST – COMBO** (LCM73003) $375
This test measures delayed (IgG) food allergies to all 190 foods found in our Basic and Extended panels.

DNA GENETIC CANCER RISK PROFILE** (LC100057) $299
With only a saliva sample, you can identify your risk for 25 hereditary cancers by analyzing 98 genes from your DNA including the well-known BRCA1, BRCA2, TP53, and APC. Not available in NY and RI.

APOE GENETIC TEST FOR ALZHEIMER’S AND CARDIAC RISK** (LC100059) $149
Apolipoprotein E (ApoE) is an important regulator of cholesterol and triglycerides levels in your blood and supports lipid transport and injury repair in your brain. Genetically, E4 is the strongest risk factor for developing Late Onset Alzheimer’s disease. According to the National Institute of Health, inheriting a single copy of ApoE4 increases the risk of Alzheimer’s disease by about three-fold. Inheriting two copies increases the risk by about 12-fold. In fact, almost 40% of AD patients have inherited an E4 allele.

In the cardiovascular system ApoE is involved in the transportation of fat molecules into your cells. E4 is associated with increased levels of cholesterol and triglycerides, which leads to atherosclerosis, heart disease and stroke.

GENETIC TESTING
This panel focuses on vascular inflammatory biomarkers. The NMR Lipoprofile® directly measures LDL particle size and number as well as HDL particle number, total cholesterol, and triglycerides. It also provides a calculation of one’s risk of insulin resistance by assessing abnormalities in lipoprotein markers.

**BLOOD TEST PANELS**

<table>
<thead>
<tr>
<th>Panel Name</th>
<th>Price</th>
<th>Panel Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE LIFE EXTENSION PANEL (LC322582)</td>
<td>$269</td>
<td>MALE LIFE EXTENSION PANEL (LC322535)</td>
<td>$269</td>
</tr>
<tr>
<td>CBC/Chemistry Profile • DHEA-S • PSA (prostate-specific antigen)</td>
<td></td>
<td>CBC/Chemistry Profile • DHEA-S • Estradiol • Homocysteine</td>
<td></td>
</tr>
<tr>
<td>Homocysteine • C-Reactive Protein (high-sensitivity)</td>
<td></td>
<td>C-Reactive Protein (high-sensitivity) • Progesterone • Free Testosterone</td>
<td></td>
</tr>
<tr>
<td>Free Testosterone • Total Testosterone • Estradiol • TSH for thyroid function • Vitamin D (25-hydroxyvitamin D) • Hemoglobin A1c</td>
<td></td>
<td>Total Testosterone • TSH for thyroid function</td>
<td></td>
</tr>
<tr>
<td>MALE HORMONE ADD-ON PANEL* (LCADDOM)</td>
<td>$120</td>
<td>Vitamin D (25-hydroxyvitamin D) • Homoglobin A1c</td>
<td></td>
</tr>
<tr>
<td>Pregnenolone and Dihydrotestosterone (DHT)</td>
<td></td>
<td>To provide an even more in-depth analysis of a man’s hormone status,</td>
<td></td>
</tr>
<tr>
<td>To provide an even more in-depth analysis of a man’s hormone status,</td>
<td></td>
<td>Life Extension has created this panel as an addition to the Male Life</td>
<td></td>
</tr>
<tr>
<td>Life Extension Panel. This panel provides information about a testosterone</td>
<td></td>
<td>Extension Panel. This panel provides information about a testosterone</td>
<td></td>
</tr>
<tr>
<td>metabolite that can affect the prostate; and the hormone pregnenolone</td>
<td></td>
<td>metablite that can affect the prostate; and the hormone pregnenolone that</td>
<td></td>
</tr>
<tr>
<td>that acts as a precursor to all other steroid hormones.</td>
<td></td>
<td>acts as a precursor to all other steroid hormones.</td>
<td></td>
</tr>
<tr>
<td>MALE ELITE PANEL (LC100016)*</td>
<td>$575</td>
<td>PS (PROSTATE SPECIFIC ANTIGEN) (LC010322)</td>
<td></td>
</tr>
<tr>
<td>CBC/Chemistry Profile • Free and Total Testosterone • Total Estrogens</td>
<td></td>
<td>CBC/Chemistry Profile • DHEA-S, Estradiol • Pregnenolone • Progesterone</td>
<td></td>
</tr>
<tr>
<td>Estradiol • DHEA-S • Progesterone • Pregnenolone • DHT • FSH • LH • TSH</td>
<td></td>
<td>Estradiol • DHEA-S • Pregnenolone</td>
<td></td>
</tr>
<tr>
<td>Free T3 • Free T4 • Reverse T3 • Free and Total PSA • IGF-1 • SHBG • HbA1c</td>
<td></td>
<td>Free T3 • Free T4 • Reverse T3 • Total PSA • IGF-1 • SHBG • HbA1c</td>
<td></td>
</tr>
<tr>
<td>Vitamin D 25-OH • hs-CRP, Ferritin, Homocysteine • Hemoglobin A1c</td>
<td></td>
<td>Vitamin D 25-OH • hs-CRP, Ferritin, Homocysteine • Hemoglobin A1c</td>
<td></td>
</tr>
<tr>
<td>MALE COMPREHENSIVE HORMONE PANEL (LC100010)*</td>
<td>$299</td>
<td>PSA (PROSTATE SPECIFIC ANTIGEN) (LC010322)</td>
<td></td>
</tr>
<tr>
<td>CBC/Chemistry Profile • DHEA-S, Estradiol • PSA</td>
<td></td>
<td>CBC/Chemistry Profile • DHEA-S, Estradiol • Pregnenolone • Progesterone</td>
<td></td>
</tr>
<tr>
<td>Pregnenolone • Total and Free Testosterone • SHBG • TSH • Free T3</td>
<td></td>
<td>Estradiol • DHEA-S • Pregnenolone</td>
<td></td>
</tr>
<tr>
<td>This panel now includes Free T4 and Cortisol with no increase in price!</td>
<td></td>
<td>Free T3 • Free T4 • Reverse T3 • Total PSA • IGF-1 • SHBG • HbA1c</td>
<td></td>
</tr>
<tr>
<td>MALE BASIC HORMONE PANEL (LC100012)</td>
<td>$75</td>
<td>MALE BASIC HORMONE PANEL (LC100012)</td>
<td></td>
</tr>
<tr>
<td>DHEA-S • Estradiol • Total and Free Testosterone • PSA</td>
<td></td>
<td>DHEA-S • Estradiol • Total and Free Testosterone • PSA</td>
<td></td>
</tr>
<tr>
<td>THYROID ADD-ON PANEL (LCTHYROID)</td>
<td>$55</td>
<td>THYROID ADD-ON PANEL (LCTHYROID)</td>
<td></td>
</tr>
<tr>
<td>INSULIN (LC004333)</td>
<td>$29.90</td>
<td>INSULIN (LC004333)</td>
<td></td>
</tr>
<tr>
<td>Helpful to assess insulin resistance.</td>
<td></td>
<td>Helpful to assess insulin resistance.</td>
<td></td>
</tr>
<tr>
<td>NMR LIPOPROFILE* (LC123810)</td>
<td>$99</td>
<td>NMR LIPOPROFILE* (LC123810)</td>
<td></td>
</tr>
<tr>
<td>The NMR Lipoprotein® directly measures LDL particle size and number</td>
<td></td>
<td>The NMR Lipoprotein® directly measures LDL particle size and number</td>
<td></td>
</tr>
<tr>
<td>number as well as HDL particle number, total cholesterol, and triglycerides.</td>
<td></td>
<td>number as well as HDL particle number, total cholesterol, and triglycerides.</td>
<td></td>
</tr>
<tr>
<td>It also provides a calculation of one’s risk of insulin resistance by</td>
<td></td>
<td>It also provides a calculation of one’s risk of insulin resistance by</td>
<td></td>
</tr>
<tr>
<td>assessing abnormalities in lipoprotein markers.</td>
<td></td>
<td>assessing abnormalities in lipoprotein markers.</td>
<td></td>
</tr>
<tr>
<td>ADVANCED OXIDIZED LDL PANEL* (LC100035)</td>
<td>$285</td>
<td>ADVANCED OXIDIZED LDL PANEL* (LC100035)</td>
<td></td>
</tr>
<tr>
<td>This panel looks at vascular inflammatory biomarkers, beginning with</td>
<td></td>
<td>This panel looks at vascular inflammatory biomarkers, beginning with</td>
<td></td>
</tr>
<tr>
<td>lifestyle choices to the development of metabolic and cardiovascular</td>
<td></td>
<td>lifestyle choices to the development of metabolic and cardiovascular</td>
<td></td>
</tr>
<tr>
<td>disease as well as the formation of vulnerable plaque. The panel contains</td>
<td></td>
<td>disease as well as the formation of vulnerable plaque. The panel contains</td>
<td></td>
</tr>
<tr>
<td>the following tests: F2-Isoprostanes, Myeloperoxidase and Oxidized LDL.</td>
<td></td>
<td>the following tests: F2-Isoprostanes, Myeloperoxidase and Oxidized LDL.</td>
<td></td>
</tr>
<tr>
<td>HOMEOSTYCEINE (LC706994)</td>
<td>$54</td>
<td>HOMEOSTYCEINE (LC706994)</td>
<td></td>
</tr>
<tr>
<td>High homocysteine is associated with heart attack, stroke, and dementia.</td>
<td></td>
<td>High homocysteine is associated with heart attack, stroke, and dementia.</td>
<td></td>
</tr>
<tr>
<td>Find out your homocysteine level so you can take steps to lower it if</td>
<td></td>
<td>Find out your homocysteine level so you can take steps to lower it if</td>
<td></td>
</tr>
<tr>
<td>necessary.</td>
<td></td>
<td>necessary.</td>
<td></td>
</tr>
</tbody>
</table>

Blood tests available in the continental United States only. Restrictions apply in NY, NJ, RI, and MA. Not available in Maryland. Kits not available in Pennsylvania.
**Amino Acids**
- Arginine/O-Taurine Capsules
- Arginine Ornithine Powder
- Branched Chain Amino Acids
- D,L-Phenylalanine Capsules
- L-Arginine Caps
- L-Carnitine
- L-Glutamine
- L-Glutamine Powder
- L-Lysine
- L-Taurine Powder
- L-Tyrosine Powder
- Super Carnosine
- Taurine

**Blood Pressure & Vascular Support**
- Advanced Olive Leaf Vascular Support with Celery Seed Extract
- Arterial Protect
- Blood Pressure Monitor Arm Cuff
- Dual Action Blood Pressure
- Endothelial Defense® with Pomegranate
- Complete and CORDIART™
- Endothelial Defense® with GliSODin®
- Natural BP Management
- NitroVasc with CORDIART™
- Pomegranate Complete
- Pomegranate Fruit Extract
- Triple Action Blood Pressure AM/PM
- VenoFlow™

**Bone Health**
- Bone Restore
- Bone Restore-Sugar Free
- Bone Restore with Vitamin K2
- Bone Strength Formula with KoAct®
- Bone-Up™
- Calcium Citrate with Vitamin D
- Dr. Strum’s Intensive Bone Formula
- Strontium Caps

**Brain Health**
- Acetyl-L-Carnitine
- Acetyl-L-Carnitine Arginate
- Blast™
- Brain Shield® Gastrodin
- CocoaMind™
- Cognitex® Basics
- Cognitex® with Brain Shield®
- Cognitex® with Pregnenolone & Brain Shield®
- Cognizin® CDP-Choline Caps
- DMAE Bitartrate (dimethylaminoethanol)
- Dopamine™
- Ginkgo Biloba Certified Extract™
- Huperzine A
- Lechithin Granules
- Memory Protect
- Mira-Eez™
- Neuro-Mag® Magnesium L-Threonate
- Optimized Ashwagandha Extract
- PS (Phosphatidylserine) Caps
- Vinpocetine

**Cholesterol Management**
- Advanced Lipid Control
- Cho-Less™
- CHOL-Support™
- Red Yeast Rice
- Theaflavins Standardized Extract
- Vitamin B3 Niacin Capsules

**Digestion Support**
- Artichoke Leaf Extract
- Digest RC®
- Effervescent Vitamin C
- Magnesium Crystals
- Enhanced Super Digestive Enzymes
- Enhanced Super Digestive Enzymes w/ Probiotics
- Esophageal Seal
- Esophageal Guardian
- Extraordinary Enzymes

**Energy Management**
- Adrenal Energy Formula
- Asian Energy Boost
- D-Ribose Powder
- D-Ribose Tablets
- Forskolin
- Mitochondrial Basics with BioPOQ®
- Mitochondrial Energy Optimizer with PQQ®
- NAD+ Cell Regenerator™
- Optimized NAD+ Cell Regenerator™
- with Resveratrol
- PQQ Caps
- Rhodiola Extract
- RiboGen™ French Oak Wood Extract
- Triple Action Thryoid

**Eye Health**
- Astaxanthin with Phospholipids
- Brite Eyes III
- Certified European Bilberry Extract
- Eye Pressure Support with Mirtogenol®
- MacuGuard® Ocular Support
- MacuGuard® Ocular Support with Astaxanthin
- Tear Support with MacuVision®

**Fish Oil & Omegas**
- OMEGA FOUNDATIONS® Clearly EPA/DHA
- OMEGA FOUNDATIONS® Mega EPA/DHA
- OMEGA FOUNDATIONS® Mega GLA
- with Sesame Lignans
- OMEGA FOUNDATIONS® Super Omega-3 EPA/DHA with Sesame Lignans & Olive Extract
- OMEGA FOUNDATIONS® Super Omega-3 Plus EPA/DHA with Sesame Lignans, Olive Extract, Krill & Astaxanthin
- OMEGA FOUNDATIONS® ProVital™
- Purified Omega-7
- OMEGA FOUNDATIONS® Vegetarian DHA
- Organic Golden Flax Seed

**Food**
- California Estate Extra Virgin Olive Oil
- Rainforest Blend Decaf Ground Coffee
- Rainforest Blend Ground Coffee
- Rainforest Blend Ground Natural Mocha Flavor
- Rainforest Blend Whole Bean Coffee
- Stevia Sweetener

**Glucose Management**
- CinSulin® with InSea2® and CromiumX® 3+
- Glycemic Guard™
- Mega Benfotiamine
- Tin Sugar Shield™

**Heart Health**
- Aspirin (Enteric Coated)
- BioActive Foliate & Vitamin B12 Caps
- Cardio Peak™ with Standardized Hawthorn and Arjuna
- Homocysteine Resist
- Optimized Carnitine with GlycoCarn®
- Super Ubiquinol CoQ10
- Super Ubiquinol CoQ10 with PQQ®
- Super Ubiquinol CoQ10 with Enhanced Mitochondrial Support™
- Super-Absorbable CoQ10 Ubiquinone
- with d-Limonene
- TMG Powder
- TMG Liquid Capsules

**Hormone Balance**
- DHEA (Dehydroepiandrosterone)
- Inner Power
- Pregnenolone
- Triple Action Cruciferous Vegetable Extract
- with Resveratrol
- Triple Action Cruciferous Vegetable Extract

**Immune Support**
- AHCC®
- Enhanced Zinc Lozenges
- Immune Modulator with Tinofend®
- Immune Protect with PARACTIN®
- Immune Seneceence Protection Formula™
- Kinoko® Gold AHCC
- Kinoko® Platinum AHCC
- Kyoic® Garlic Formula 102
- Kyoic® Reserve
- Lactoferin (apolactoferrin) Caps
- NK Cell Activator™
- Optimized Garlic
- Optimized Quercetin
- Peony Immune
- ProBoost Thymic Protein A
- Reishi Extract Mushroom Complex
- Standardized Cistanche
- Ten Mushroom Formula®
- Zinc Lozenges

**Inflammation Management**
- 5-LOX Inhibitor with AprèsFlex®
- Advanced Bio-Curcumin® with Ginger & Turmerones
- Black Cumin Seed Oil
- Black Cumin Seed Oil with Bio-Curcumin®
- Boswella
- Comfort Max™
- Cytokine Suppressor™ with EGCG
- Serrafalzyse
- Specificial-Coated Bromelain
- Super Bio-Curcumin®
- Zyflamend® Whole Body

**Joint Support**
- Arthro-Immune Joint Support
- ArthroMax® Advanced with UC-II® & AprèsFlex®
- ArthroMax® with Theaflavins & AprèsFlex®
- ArthroMax® Herbal Joint Formula
- Bio-Collagen with Patented UC-II®
- Fast-Acting Joint Formula
- Glucosamine/Chondroitin Capsules
- Krill Healthy Joint Formula
- MSM (Methylsulfonylmethane)

**Kidney & Bladder Support**
- Cran-Max® Cranberry Whole Fruit Concentrate
- Optimized Cran-Max® with Ellirose™
- Uric Acid Control
- Water-Soluble Pumpkin Seed Extract

**Liver Health & Detoxification**
- Anti-Alcohol with HepatoProtection Complex
- Calcium D-Glucarate
- Chlorella
- Chlorophyllin
- European Milk Thistle
- Glutathione, Cysteine & C
- HepatoPro
- Liver Efficiency Formula
- N-Acetyl-L-Cysteine
- PectaSol-C®
- Silymarin
- SODzyme® with GliSODin® & Wolfberry

**Longevity & Wellness**
- Alpha-Lipoic Acid
- Apple Wise Polyphenol Extract
- Berry Complete
- Blueberry Extract
- Blueberry Extract with Pomegranate
- DNA Protection Formula
- Enhanced Berry Complete with Acai
- Essential Daily Nutrients
- GEROPROTECT™ Ageless Cell™
- GEROPROTECT™ Longevity A.I.™
- Grapeseed Extract with Resveratrol & Pterostilbene
<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>01524</td>
<td>ACETYL-L-CARNITINE • 500 mg, 100 veg. caps</td>
</tr>
<tr>
<td>01874</td>
<td>ACETYL-L-CARNITINE ARGINATE • 90 veg. caps</td>
</tr>
<tr>
<td>01628</td>
<td>ADRENAL ENERGY FORMULA • 60 veg. caps</td>
</tr>
<tr>
<td>01630</td>
<td>ADRENAL ENERGY FORMULA • 120 veg. caps</td>
</tr>
<tr>
<td>01828</td>
<td>ADVANCED LIPID CONTROL • 60 veg. caps</td>
</tr>
<tr>
<td>00681</td>
<td>AHCC® • 500 mg, 30 caps</td>
</tr>
<tr>
<td>24404</td>
<td>AHCC® (KINOKO® PLATINUM) • 750 mg, 60 veg. caps</td>
</tr>
<tr>
<td>29727</td>
<td>AHCC® (KINOKO® GOLD) • 500 mg, 60 veg. caps</td>
</tr>
<tr>
<td>00457</td>
<td>ALPHA-LIPOIC ACID W/BIOTIN • 250 mg, 60 caps</td>
</tr>
<tr>
<td>02207</td>
<td>AMPK METABOLIC ACTIVATOR • 30 veg. tabs</td>
</tr>
<tr>
<td>01509</td>
<td>ANTI-ADIPOCYTE FORMULA W/NERATRIM® &amp; INTEGRA LEAN® (Advanced) • 60 veg. caps</td>
</tr>
<tr>
<td>02140</td>
<td>ANTI-ALCOHOL w/HEPATOPRO COMPLEX • 60 caps</td>
</tr>
<tr>
<td>01625</td>
<td>APPLEWISE POLYPHENOL EXTRACT 600 mg, 30 veg. caps</td>
</tr>
<tr>
<td>01039</td>
<td>ARGinine/ORNiTHE • 500/250, 100 caps</td>
</tr>
<tr>
<td>00038</td>
<td>ARGinine/ORNiTHE POWDER • 150 grams</td>
</tr>
<tr>
<td>01624</td>
<td>(L)-ARGININE CAPS • 700 mg, 200 veg. caps</td>
</tr>
<tr>
<td>02004</td>
<td>ARTERIAL PROTECT • 30 veg. caps</td>
</tr>
<tr>
<td>01617</td>
<td>ARTHRIMAX® W/TEAFLAVINS &amp; APRÈSFLÉX® 120 veg. caps</td>
</tr>
<tr>
<td>01618</td>
<td>ARTHRIMAX® ADVANCED W/UC-II® &amp; APRÈSFLÉX® 60 caps</td>
</tr>
<tr>
<td>02108</td>
<td>ARTHRIMAX® HERBAL JOINT FORMULA • 60 veg. caps</td>
</tr>
<tr>
<td>01404</td>
<td>ARTHRO-IMMUNE JOINT SUPPORT • 60 veg. caps</td>
</tr>
<tr>
<td>00919</td>
<td>ARTICHOKE LEAF EXTRACT • 500 mg, 180 veg. caps</td>
</tr>
<tr>
<td>01533</td>
<td>ASCORBYL PALMITATE • 500 mg, 100 veg. caps</td>
</tr>
<tr>
<td>00888</td>
<td>ASHWAGANDHA EXTRACT (Optimized) • 60 veg. caps</td>
</tr>
<tr>
<td>01805</td>
<td>ASIAN ENERGY BOOST • 90 veg. caps</td>
</tr>
<tr>
<td>01066</td>
<td>ASPIRIN • 81 mg, 300 enteric coated tablets</td>
</tr>
<tr>
<td>01923</td>
<td>ASTAXANTHIN WITH PHOSPHOLIPIDS • 4 mg, 30 softgels</td>
</tr>
<tr>
<td>00920</td>
<td>BENEFOTIAMINE W/ THIAMINE • 100 mg, 120 veg. caps</td>
</tr>
<tr>
<td>00925</td>
<td>BENEFOTIAMINE (Mega) • 250 mg, 120 veg. caps</td>
</tr>
<tr>
<td>01206</td>
<td>BERRY COMPLETE • 30 veg. caps</td>
</tr>
<tr>
<td>01496</td>
<td>BERRY COMPLETE W/ACAI (Enhanced) • 60 veg. caps</td>
</tr>
<tr>
<td>00664</td>
<td>BETA-CAROTENE • 25,000 IU, 100 softgels</td>
</tr>
<tr>
<td>01622</td>
<td>BIFIDO GI BALANCE • 60 veg. caps</td>
</tr>
<tr>
<td>01873</td>
<td>BILBERRY EXTRACT • 100 mg, 90 veg. caps</td>
</tr>
<tr>
<td>01512</td>
<td>BIOACTIVE MILK PEPTIDES • 30 caps</td>
</tr>
<tr>
<td>01631</td>
<td>BIO-COLLAGEN W/PATENTED UC-II® • 40 mg, 60 small caps</td>
</tr>
<tr>
<td>01006</td>
<td>BIOSIL™ • 5 mg, 30 veg. caps</td>
</tr>
<tr>
<td>01007</td>
<td>BIOSIL™ • 1 fl oz</td>
</tr>
<tr>
<td>01022</td>
<td>BIOTIN • 600 mcg, 100 caps</td>
</tr>
<tr>
<td>01709</td>
<td>BLACK CUMIN SEED OIL • 60 softgels</td>
</tr>
<tr>
<td>01710</td>
<td>BLACK CUMIN SEED OIL W/BIO-CURCUMIN® • 60 softgels</td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 1**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>01008</td>
<td>BLAST™ • 600 grams of powder</td>
</tr>
<tr>
<td>00205</td>
<td>BLOOD PRESSURE (Dual Action) • 60 veg. tabs</td>
</tr>
<tr>
<td>07000</td>
<td>BLOOD PRESSURE MONITOR (ACCUIF™) • med/lg cuff</td>
</tr>
<tr>
<td>07004</td>
<td>BLOOD PRESSURE MONITOR • Digital wrist cuff</td>
</tr>
<tr>
<td>02024</td>
<td>BLOOD PRESSURE (Triple Action AM/PM) • 60 veg. tabs</td>
</tr>
<tr>
<td>01214</td>
<td>BLUEBERRY EXTRACT • 60 veg. caps</td>
</tr>
<tr>
<td>01438</td>
<td>BLUEBERRY EXTRACT W/ POMEGRANATE • 60 veg. caps</td>
</tr>
<tr>
<td>01506</td>
<td>BONE FORMULA (GR. STRUMA’S INTENSIVE) • 300 caps</td>
</tr>
<tr>
<td>01726</td>
<td>BONE RESTORE • 120 caps</td>
</tr>
<tr>
<td>02123</td>
<td>BONE RESTORE • Chocolate, Sugar-Free • 60 chewable tabs</td>
</tr>
<tr>
<td>01727</td>
<td>BONE RESTORE W/VITAMIN K2 • 120 caps</td>
</tr>
<tr>
<td>01725</td>
<td>BONE STRENGTH FORMULA W/KOACT® • 120 caps</td>
</tr>
<tr>
<td>00313</td>
<td>BONE-UP® • 240 caps</td>
</tr>
<tr>
<td>01661</td>
<td>BORON • 3 mg, 100 veg. caps</td>
</tr>
<tr>
<td>00202</td>
<td>BOSWELLA • 100 caps</td>
</tr>
<tr>
<td>01802</td>
<td>BRAIN SHIELD® GASTRIN® • 300 mg, 60 veg. caps</td>
</tr>
<tr>
<td>01253</td>
<td>BRANCHED CHAIN AMINO ACIDS • 90 caps</td>
</tr>
<tr>
<td>01942</td>
<td>BLOOD HEALTH FORMULA • 60 caps</td>
</tr>
<tr>
<td>00893</td>
<td>BRIT EYES III • 2 vials, 5 ml each</td>
</tr>
<tr>
<td>01203</td>
<td>BROMELAIN (Specially-coated) 500 mg, 60 enteric coated tablets</td>
</tr>
<tr>
<td>01653</td>
<td>CALCIUM CITRATE W/VITAMIN D • 300 caps</td>
</tr>
<tr>
<td>01651</td>
<td>CALCIUM D-GluCARNATE • 200 mg, 60 veg. caps</td>
</tr>
<tr>
<td>01823</td>
<td>CALREDOUCE SELECTIVE FAT BINDER 120 mint chewable tablets</td>
</tr>
<tr>
<td>01700</td>
<td>CARDIO PEAK™ w/STANDARDIZED HAWTHORN &amp; ARUNJA 120 veg. caps</td>
</tr>
<tr>
<td>00916</td>
<td>CARNITINE W/GLYCOCARN® (Optimized) • 60 veg. caps</td>
</tr>
<tr>
<td>01532</td>
<td>L-CARNITINE • 500 mg, 30 veg. caps</td>
</tr>
<tr>
<td>01829</td>
<td>CARNOSINE • 500 mg, 60 veg. caps</td>
</tr>
<tr>
<td>02020</td>
<td>CARNOSINE (Super) • 500 mg, 60 veg. caps</td>
</tr>
<tr>
<td>01932</td>
<td>CAT MIX • 100 grams powder</td>
</tr>
<tr>
<td>02199</td>
<td>CHILDREN’S FORMULA LIFE EXTENSION MIX™ 120 chewable tablets</td>
</tr>
<tr>
<td>00500</td>
<td>CHOLELLA • 500 mg, 200 veg. tabs</td>
</tr>
<tr>
<td>01571</td>
<td>CHLOROPHYLLIN • 100 mg, 100 veg. caps</td>
</tr>
<tr>
<td>01359</td>
<td>CHO-LESS™ 90 capsules</td>
</tr>
<tr>
<td>01910</td>
<td>CHOL-SUPPORT™ • 60 liquid veg. caps</td>
</tr>
<tr>
<td>01504</td>
<td>CHROMIUM W/CROMINEX® 3+ (Optimized) 500 mcg, 60 veg. caps</td>
</tr>
<tr>
<td>01503</td>
<td>CINSELU® W/INSA2® AND CROMINEX® 3+ • 90 veg. caps</td>
</tr>
<tr>
<td>01906</td>
<td>CISANCHE (Standardized) • 30 veg. caps</td>
</tr>
<tr>
<td>01818</td>
<td>CITRIMAX® (Super) • 180 veg. caps</td>
</tr>
<tr>
<td>00818</td>
<td>CLA BLEND W/SESAME LIGNANS (Super) • 120 softgels</td>
</tr>
<tr>
<td>02103</td>
<td>COCOAMINTM • 14 packets</td>
</tr>
<tr>
<td>01896</td>
<td>COGNITEX® W/BRAD SHIELD® • 90 softgels</td>
</tr>
</tbody>
</table>

**SUBTOTAL OF COLUMN 2**

**DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE**

**RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS**

JANUARY 2018

**SUPER SALE SAVINGS ON ALL PRODUCTS**
**COSMESIS**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>RETAIL Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>80157</td>
<td>ADVANCED ANTI-GLYCATION PEPTIDE SERUM • 1 oz</td>
<td>53.00</td>
<td>39.75</td>
<td>34.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80165</td>
<td>ADVANCED GROWTH FACTOR SERUM • 30 ml</td>
<td>65.00</td>
<td>48.75</td>
<td>42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80154</td>
<td>ADVANCED LIGHTENING CREAM</td>
<td>65.00</td>
<td>48.75</td>
<td>42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80155</td>
<td>ADVANCED PEPTIDE HAND THERAPY • 4 oz</td>
<td>46.00</td>
<td>34.50</td>
<td>29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80152</td>
<td>ADVANCED TRIPLE PEPTIDE SERUM • 1 oz</td>
<td>65.00</td>
<td>48.75</td>
<td>42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80140</td>
<td>ADVANCED UNDER EYE SERUM W/STEM CELLS • 33 oz</td>
<td>49.00</td>
<td>36.75</td>
<td>31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80139</td>
<td>AMBER SELF MICRODERMABRASION • 2 oz</td>
<td>49.00</td>
<td>36.75</td>
<td>31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80158</td>
<td>ANTI-AGING FACE OIL • 1 oz</td>
<td>59.00</td>
<td>44.25</td>
<td>39.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80118</td>
<td>ANTI-AGING MASK • 2 oz</td>
<td>72.00</td>
<td>54.00</td>
<td>47.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80151</td>
<td>ANTI-AGING REJUVENATING FACE CREAM • 2 oz</td>
<td>65.00</td>
<td>48.75</td>
<td>42.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80153</td>
<td>ANTI-AGING REJUVENATING SCALP SERUM • 2 oz</td>
<td>46.00</td>
<td>34.50</td>
<td>29.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80134</td>
<td>ANTI-GLYCATION SERUM W/BLUEBERRY &amp; POMEGRANATE EXTRACTS • 1 oz</td>
<td>33.00</td>
<td>24.75</td>
<td>23.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80133</td>
<td>ANTI-OXIDANT FACIAL MIST • 2 oz</td>
<td>32.00</td>
<td>24.00</td>
<td>22.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80105</td>
<td>ANTI-REDNESS &amp; ADULT BLEMISH LOTION • 1 oz</td>
<td>74.50</td>
<td>55.88</td>
<td>49.17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80156</td>
<td>COLLAGEN BOOSTING PEPTIDE SERUM • 1 oz</td>
<td>59.00</td>
<td>44.25</td>
<td>39.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80141</td>
<td>DNA REPAIR CREAM • 1 oz</td>
<td>49.00</td>
<td>36.75</td>
<td>31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80167</td>
<td>ENVIRONMENTAL SUPPORT SERUM • 1 fl. oz</td>
<td>59.00</td>
<td>44.25</td>
<td>39.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**D**

<table>
<thead>
<tr>
<th>ITEM No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>RETAIL Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>00658</td>
<td>7-KETO® DHEA METABOLITE • 25 mg, 100 caps</td>
<td>28.00</td>
<td>21.00</td>
<td>18.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01478</td>
<td>7-KETO® DHEA METABOLITE • 100 mg, 60 veg. caps</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01460</td>
<td>DNA (Vegetarian) • 30 veg. softgels</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00607</td>
<td>DHEA • 25 mg, 100 tablets (Dissolve in mouth)</td>
<td>14.00</td>
<td>10.50</td>
<td>8.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01478</td>
<td>DHEA COMPLETE • 60 veg. caps</td>
<td>48.00</td>
<td>36.00</td>
<td>32.40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00335</td>
<td>DHEA • 25 mg, 100 caps</td>
<td>16.00</td>
<td>12.00</td>
<td>11.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00454</td>
<td>DHEA • 15 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>00882</td>
<td>DHEA • 50 mg, 60 caps</td>
<td>19.00</td>
<td>14.25</td>
<td>12.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01689</td>
<td>DHEA • 100 mg, 60 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01358</td>
<td>DIGEST RC®</td>
<td>19.95</td>
<td>14.96</td>
<td>12.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02221</td>
<td>DIGESTIVE ENZYMES (Enhanced Super) • 60 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02222</td>
<td>DIGESTIVE ENZYMES w/PROBIOTICS (Enhanced Super) • 60 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td>18.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Item No. | Product | Retail Each | Unit 1 | Unit 4 | Unit 10 | Unit QTY | Total
--- | --- | --- | --- | --- | --- | --- | ---
01671 | D, L-PHENYLALANINE | 500 mg, 100 veg. caps | $18.95 | $14.06 | $12.00 | **YOUR PRICE**
01540 | DMAE BITARTRATE | 150 mg, 200 veg. caps | $18.00 | $13.50 | $11.25 | **YOUR PRICE**
01570 | DNA PROTECTION FORMULA | 60 veg. caps | $34.00 | $25.50 | $24.00 | **YOUR PRICE**
01919 | DOG MIX | 100 grams powder | $18.00 | $13.50 | $11.25 | **YOUR PRICE**
02006 | DOPA-MIND™ | 60 veg. tabs | $44.00 | $33.00 | $28.00 | **YOUR PRICE**
00321 | DR. PROCTOR'S ADVANCED HAIR FORMULA | 2 oz | $39.95 | $29.96 | $24.00 | **YOUR PRICE**
00320 | DR. PROCTOR'S HAIR SHAMPOO | 8 oz | $24.95 | $18.71 | $16.50 | **YOUR PRICE**
01907 | ENDOTHELIAL DEFENSE™ w/ POMEGRANATE COMPLETE AND CORRECT™ | 60 softgels | $68.00 | $51.00 | $46.50 | **YOUR PRICE**
00997 | ENDOTHELIAL DEFENSE™ w/ GLISODIN® | 60 veg. caps | $54.00 | $40.50 | $36.00 | **YOUR PRICE**
02200 | EPA/DHA (Clearly) | 120 softgels | $30.00 | $22.50 | $20.00 | **YOUR PRICE**
01937 | EPA/DHA (Mega) | 120 softgels | $20.00 | $15.00 | $13.50 | **YOUR PRICE**
02009 | ESOPHACOOL™ | 120 chewable tablets | $20.00 | $15.00 | $13.50 | **YOUR PRICE**
01737 | ESOPHAGEAL GUARDIAN | (Berry flavor) | 60 chewable tablets | $36.00 | $27.00 | $24.00 | **YOUR PRICE**
01042 | EUROPEAN LEG SOLUTION DIOSMIN 95 | 600 mg, 30 veg. tabs | $20.00 | $15.00 | $13.50 | **YOUR PRICE**
01706 | EXTRAORDINARY ENZYMES | 60 caps | $26.00 | $19.50 | $18.00 | **YOUR PRICE**
02008 | CALIFORNIA ESTATE EXTRAVIRGIN OLIVE OIL | 500 ml (16.9 fl. oz) | $33.00 | $24.75 | $22.50 | **YOUR PRICE**
01514 | EYE PRESSURE SUPPORT W/ MIRTGENOL® | 30 veg. caps | $38.00 | $28.50 | $25.50 | **YOUR PRICE**
00954 | FACE MASTER® PLATINUM | Facial Toning System | $199.00 | $199.00 | **YOUR PRICE**
00985 | FAST-ACTING JOINT FORMULA | 30 caps | $39.00 | $29.25 | $27.00 | **YOUR PRICE**
01717 | FAST-C® w/ DIOXYQUERCETIN | 120 veg. tabs | $26.00 | $19.50 | $18.00 | **YOUR PRICE**
01064 | FEMMENESSENCE MACAPASS® | 120 veg. caps | $34.95 | $26.24 | **YOUR PRICE**
02125 | FLORASSIST® GI w/ PHAGE TECHNOLOGY | 30 liquid veg. caps | $33.00 | $24.75 | $22.50 | **YOUR PRICE**
01821 | FLORASSIST® HEART HEALTH | 60 veg. caps | $32.00 | $24.00 | $21.00 | **YOUR PRICE**
02124 | FLORASSIST® IMMUNE HEALTH | 30 veg. caps | $26.00 | $19.50 | $18.00 | **YOUR PRICE**
02120 | FLORASSIST® ORAL HYGIENE | 30 lozenges | $20.00 | $15.00 | $13.00 | **YOUR PRICE**
01825 | FLORASSIST® BALANCE | 30 liquid veg. caps | $32.00 | $24.00 | $21.00 | **YOUR PRICE**
02000 | FLORASSIST® MOOD | 60 caps | $33.00 | $24.75 | $22.50 | **YOUR PRICE**
02203 | FLORASSIST® PREBIOTIC | Natural Strawberry, 60 chewable tabs | $20.00 | $15.00 | $13.00 | **YOUR PRICE**
01920 | FLORASSIST® THROAT HEALTH | 30 lozenges | $20.00 | $15.00 | $13.50 | **YOUR PRICE**
01913 | FOLATE HIGH POTENCY (Optimized) | 5,000 mcg, 30 veg. tablets | $18.00 | $13.50 | $12.00 | **YOUR PRICE**
01939 | FOLATE (Optimized) | 1,000 mcg, 100 veg. tablets | $15.00 | $11.25 | $10.00 | **YOUR PRICE**
01842 | FOLATE + VITAMIN B12 (BioActive) | 90 veg. caps | $12.00 | $9.00 | $8.00 | **YOUR PRICE**
01545 | FORSKOLIN | 10 mg, 60 veg. caps | $16.00 | $12.00 | $10.50 | **YOUR PRICE**
01513 | FUCOIDAN W/ MARITECH® 925 | (Optimized) | 60 veg. caps | $36.00 | $27.00 | $24.75 | **YOUR PRICE**
02070 | GAMMA E MIXED TOCOPHEROL/TOCOTRIENOLS | 60 softgels | $40.00 | $30.00 | $27.00 | **YOUR PRICE**
02075 | GAMMA E MIXED TOCOPHEROL (HINHANCED SESAME LIGNANS) | 60 softgels | $22.00 | $16.50 | $15.75 | **YOUR PRICE**
01394 | GARLIC (Optimized) | 200 veg. caps | $24.95 | $18.71 | $15.75 | **YOUR PRICE**
02100 | GARSTO-EASE™ | 60 veg. caps | $44.00 | $33.00 | $30.00 | **YOUR PRICE**
02119 | GEROPROTECT™ AGELESS CELL™ | 30 softgels | $40.00 | $30.00 | $27.00 | **YOUR PRICE**
02133 | GEROPROTECT™ LONGEVITY A.J.™ | 30 softgels | $56.00 | $42.00 | $38.00 | **YOUR PRICE**
01122 | GINGER FORCE® | 60 liquid caps | $34.95 | $26.21 | **YOUR PRICE**

**SUBTOTAL OF COLUMN 5**

**SUBTOTAL OF COLUMN 6**

**SUPER SALE SAVINGS ON ALL PRODUCTS**

TO ORDER CALL: 1.954.766.8433 or 1.800.544.4440 □ TO ORDER ONLINE VISIT: www.LifeExtension.com

*DEDUCT AN ADDITIONAL 10% ON ALL PRODUCTS DURING SUPER SALE*

**RECEIVE 25% OFF THE RETAIL PRICE OF ALL PRODUCTS**
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Product</th>
<th>Retail Each</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>02257</td>
<td>LIFE EXTENSION MIX™ W/EXTRA NIACIN • 240 tablets</td>
<td>74.00</td>
<td>55.50</td>
<td>48.00</td>
<td>42.00</td>
<td></td>
</tr>
<tr>
<td>02254</td>
<td>LIFE EXTENSION MIX™ • 360 caps</td>
<td>78.00</td>
<td>58.50</td>
<td>50.00</td>
<td>44.00</td>
<td></td>
</tr>
<tr>
<td>02256</td>
<td>LIFE EXTENSION MIX™ POWDER • 12.70 oz</td>
<td>72.00</td>
<td>54.00</td>
<td>46.00</td>
<td>40.00</td>
<td></td>
</tr>
<tr>
<td>02265</td>
<td>LIFE EXTENSION MIX™ • 240 tablets w/o copper</td>
<td>74.00</td>
<td>55.50</td>
<td>48.00</td>
<td>42.00</td>
<td></td>
</tr>
<tr>
<td>02264</td>
<td>LIFE EXTENSION MIX™ • 360 caps w/o copper</td>
<td>78.00</td>
<td>58.50</td>
<td>50.00</td>
<td>44.00</td>
<td></td>
</tr>
<tr>
<td>01068</td>
<td>LIVER EFFICIENCY FORMULA • 30 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01639</td>
<td>5-LOX INHIBITOR W/APRÉS FLEX™ • 100 mg, 60 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01678</td>
<td>L-LYSINE • 620 mg, 100 veg. caps</td>
<td>9.00</td>
<td>6.75</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00455</td>
<td>LYCOPENE (Mega) • 15 mg, 90 softgels</td>
<td>35.00</td>
<td>26.25</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01192</td>
<td>MACUGUARD® OCULAR SUPPORT w/SAFFRON• 60 softgels</td>
<td>25.00</td>
<td>18.75</td>
<td>17.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01993</td>
<td>MACUGUARD® OCULAR SUPPORT w/SAFFRON &amp; ASTAXANTHIN• 60 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01459</td>
<td>MAGNESIUM CAPS • 500 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01682</td>
<td>MAGNESIUM (CITRATE) • 160 mg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02017</td>
<td>(EXTEND-RELEASE) MAGNESIUM • 60 veg. caps</td>
<td>13.00</td>
<td>9.75</td>
<td>8.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01908</td>
<td>MEDITERRANEAN TRIM WITH SINETROL®-XPUR • 60 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02109</td>
<td>MEDITERRANEAN WHOLE FOOD BLEND • 90 veg. caps</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01668</td>
<td>MELATONIN • 300 mcg, 100 veg. caps</td>
<td>5.75</td>
<td>4.31</td>
<td>3.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01803</td>
<td>MELATONIN • 500 mcg, 200 veg. caps</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00329</td>
<td>MELATONIN • 1 mg, 60 caps</td>
<td>5.00</td>
<td>3.75</td>
<td>3.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00330</td>
<td>MELATONIN • 3 mg, 60 veg. caps</td>
<td>8.00</td>
<td>6.00</td>
<td>5.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00331</td>
<td>MELATONIN • 10 mg, 60 veg. caps</td>
<td>28.00</td>
<td>21.00</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00332</td>
<td>MELATONIN • 3 mg, 60 veg. lozenges</td>
<td>8.00</td>
<td>6.00</td>
<td>5.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01734</td>
<td>MELATONIN (Fast-Acting Liquid) • 2 fl. oz (Citrus-Blackberry)</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01787</td>
<td>MELATONIN TIMED RELEASE • 100 mcg, 100 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01788</td>
<td>MELATONIN TIMED RELEASE • 750 mcg, 60 veg. tablets</td>
<td>8.00</td>
<td>6.00</td>
<td>5.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01786</td>
<td>MELATONIN TIMED RELEASE • 3 mg, 60 veg. caps</td>
<td>12.00</td>
<td>9.00</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02101</td>
<td>MEMORY PROTECT • 36 day supply</td>
<td>24.00</td>
<td>18.00</td>
<td>16.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01536</td>
<td>METHYLCOBALAMIN • 1 mg, 100 veg. lozenges (vanilla)</td>
<td>9.95</td>
<td>7.46</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01537</td>
<td>METHYLCOBALAMIN • 5 mg, 50 veg. lozenges (vanilla)</td>
<td>32.00</td>
<td>24.00</td>
<td>18.75</td>
<td>17.25</td>
<td></td>
</tr>
<tr>
<td>00709</td>
<td>MIGRA-EEZE™ (Butterbur) • 60 softgels</td>
<td>33.00</td>
<td>24.75</td>
<td>22.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01522</td>
<td>MILK THISTLE (European) • 60 veg. caps</td>
<td>34.00</td>
<td>25.00</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01922</td>
<td>MILK THISTLE (European) • 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01925</td>
<td>MILK THISTLE (European) • 120 softgels</td>
<td>44.00</td>
<td>33.00</td>
<td>30.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01940</td>
<td>MIRAFORTE w/STANDARDIZED LIGNANS (Super) • 120 veg caps</td>
<td>62.00</td>
<td>46.50</td>
<td>42.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01889</td>
<td>MITOCHONDRIAL BASICS W/BIOPOQ® • 30 caps</td>
<td>40.00</td>
<td>30.00</td>
<td>27.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01886</td>
<td>MITOCHONDRIAL ENERGY OPTIMIZER w/BIOPOQ® • 120 caps</td>
<td>68.00</td>
<td>51.00</td>
<td>45.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00865</td>
<td>MK-7 • 90 mcg, 60 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00451</td>
<td>MSM (Methylsulfonylmethane) • 1,200 mg, 100 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>8.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01534</td>
<td>N-ACETYL-L-CYSTEINE • 600 mg, 60 veg. caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01904</td>
<td>NAD+ CELL REGENERATOR™ • 100 mg, 30 veg. caps</td>
<td>22.00</td>
<td>16.50</td>
<td>15.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02144</td>
<td>NAD+ CELL REGENERATOR™ NICOTINAMIDE RIBOSIDE 250 mg, 36 veg. caps</td>
<td>42.00</td>
<td>31.50</td>
<td>28.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Deduct An Additional 10% On All Products During Super Sale

To Order Call: 1-954-766-8433 or 1-800-544-4440 • TO ORDER ONLINE VISIT: www.LifeExtension.com

<table>
<thead>
<tr>
<th>Item No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01432</td>
<td>Saffron W/Satureal® (Optimized) • 60 veg. caps</td>
<td>36.00 27.00 24.00</td>
<td></td>
</tr>
<tr>
<td>01935</td>
<td>SAmE (S-Adenosyl-Methionine) 200 mg, 30 enteric coated tablets</td>
<td>25.00 18.75 16.50</td>
<td></td>
</tr>
<tr>
<td>01933</td>
<td>SAmE (S-Adenosyl-Methionine) 400 mg, 30 enteric coated tablets</td>
<td>36.00 27.00 24.00</td>
<td></td>
</tr>
<tr>
<td>01934</td>
<td>SAmE (S-Adenosyl-Methionine) 600 mg, 60 enteric coated tablets</td>
<td>66.00 49.50 45.00</td>
<td></td>
</tr>
<tr>
<td>01740</td>
<td>Sea-Iodine™ • 1,000 mcg, 60 veg. caps</td>
<td>8.00 6.00 5.40</td>
<td></td>
</tr>
<tr>
<td>01879</td>
<td>Se-Methyl L-SelexysCysteine • 200 mcg, 90 veg. caps</td>
<td>11.00 8.25 7.50</td>
<td></td>
</tr>
<tr>
<td>00318</td>
<td>SERRAFLAV™ • 100 tablets</td>
<td>18.00 13.50 12.00</td>
<td></td>
</tr>
<tr>
<td>01938</td>
<td>Shade Factor™ • 120 veg. caps</td>
<td>44.00 33.00 30.00</td>
<td></td>
</tr>
<tr>
<td>02110</td>
<td>Shade Factor™ Sunscreen Lotion • 4 fl. oz.</td>
<td>20.00 15.00 13.00</td>
<td></td>
</tr>
<tr>
<td>02118</td>
<td>Shade Factor™ Sunscreen Spray • 6 fl. oz.</td>
<td>22.00 16.50 14.25</td>
<td></td>
</tr>
<tr>
<td>01884</td>
<td>Silmarin™ • 100 mg, 90 veg. caps</td>
<td>14.00 10.50 9.50</td>
<td></td>
</tr>
<tr>
<td>01249</td>
<td>Sinus CLEANSER • 4 oz. bottle</td>
<td>25.00 18.75 16.50</td>
<td></td>
</tr>
<tr>
<td>02129</td>
<td>Skin Care Collection Anti-Aging Serum • 1.75 fl. oz.</td>
<td>60.00 45.00 37.50</td>
<td></td>
</tr>
<tr>
<td>02132</td>
<td>Skin Care Collection Body Lotion • 6 oz</td>
<td>28.00 21.00 18.00</td>
<td></td>
</tr>
<tr>
<td>02130</td>
<td>Skin Care Collection Day Cream • 1.65 fl. oz.</td>
<td>50.00 37.50 33.00</td>
<td></td>
</tr>
<tr>
<td>02131</td>
<td>Skin Care Collection Night Cream • 1.65 fl. oz.</td>
<td>39.00 29.25 27.00</td>
<td></td>
</tr>
<tr>
<td>01596</td>
<td>Skin Restoring PhytoCeramides w/Lipowheat® 30 liquid veg. caps</td>
<td>25.00 18.75 17.25</td>
<td></td>
</tr>
<tr>
<td>00961</td>
<td>Solzyme® w/Glisodin® &amp; Wolfberry • 90 veg. caps</td>
<td>28.00 21.00 18.00</td>
<td></td>
</tr>
<tr>
<td>00657</td>
<td>SolarShield® Sunglasses • Smoke color</td>
<td>12.99 9.74 8.63</td>
<td></td>
</tr>
<tr>
<td>01989</td>
<td>Soy Extract (Ultra) • 150 veg. caps</td>
<td>76.00 57.00 50.00</td>
<td></td>
</tr>
<tr>
<td>01649</td>
<td>Soy Isoflavones (Super Absorbable) • 60 veg. caps</td>
<td>28.00 21.00 18.75</td>
<td></td>
</tr>
<tr>
<td>00432</td>
<td>Stevia™ (Better) • 100 packets, 1 gram each</td>
<td>9.95 7.46</td>
<td></td>
</tr>
<tr>
<td>00438</td>
<td>Stevia™ Organic Liquid Sweetener (Better) • 2 oz</td>
<td>11.00 8.25</td>
<td></td>
</tr>
<tr>
<td>01476</td>
<td>Strontium™ • 750 mg, 90 veg. caps</td>
<td>20.00 15.00 13.50</td>
<td></td>
</tr>
<tr>
<td>01778</td>
<td>Super Selenium Complex • 200 mcg, 100 veg. caps</td>
<td>14.00 10.50 9.00 8.25</td>
<td></td>
</tr>
<tr>
<td>00203</td>
<td>Tart Cherry W/CherryPure® 60 veg. caps</td>
<td>20.00 15.00 14.00</td>
<td></td>
</tr>
<tr>
<td>01827</td>
<td>Taurine • 1,000 mg, 90 veg. caps</td>
<td>13.00 9.75 9.00</td>
<td></td>
</tr>
<tr>
<td>01918</td>
<td>Tear Support w/MaquiBright® • 60 mg, 30 veg. caps</td>
<td>18.00 13.50 12.00</td>
<td></td>
</tr>
<tr>
<td>00133</td>
<td>L-Taurine Powder • 300 grams</td>
<td>20.00 15.00 12.66</td>
<td></td>
</tr>
<tr>
<td>00639</td>
<td>Ten Mushroom Formula® • 120 veg. caps</td>
<td>41.95 35.66</td>
<td></td>
</tr>
<tr>
<td>01304</td>
<td>Theaflavin Standardized Extract • 30 veg. caps</td>
<td>18.00 13.50 12.00</td>
<td></td>
</tr>
<tr>
<td>01683</td>
<td>(L) Theanine • 100 mg, 60 veg. caps</td>
<td>24.00 18.00 15.38</td>
<td></td>
</tr>
<tr>
<td>01904</td>
<td>Theralac® Probiotics • 30 caps</td>
<td>47.95 35.96</td>
<td></td>
</tr>
<tr>
<td>00668</td>
<td>Thyroid Formula (Metabolic Advantage®) • 100 caps</td>
<td>21.95 16.46</td>
<td></td>
</tr>
<tr>
<td>00349</td>
<td>TMG Powder • 50 grams</td>
<td>14.00 10.50 8.25</td>
<td></td>
</tr>
<tr>
<td>01859</td>
<td>TMG • 500 mg, 60 liquid veg. caps</td>
<td>13.00 9.75 9.00</td>
<td></td>
</tr>
<tr>
<td>01400</td>
<td>Tocotrienols (Super-absorbable) • 60 softgels</td>
<td>30.00 22.50 21.00</td>
<td></td>
</tr>
<tr>
<td>01278</td>
<td>Toothpaste • 4 oz (Mini) tube</td>
<td>9.50 7.13 6.50</td>
<td></td>
</tr>
<tr>
<td>01917</td>
<td>TranquilTRACT™ • 60 veg. caps</td>
<td>52.00 39.00 34.50</td>
<td></td>
</tr>
</tbody>
</table>

### Q. R.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>PRODUCT</th>
<th>YOUR PRICE</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01309</td>
<td>Quercetin (Optimized) • 250 mg, 60 veg. caps</td>
<td>22.00 18.50 15.00</td>
<td></td>
</tr>
<tr>
<td>01300</td>
<td>Red Yeast Rice (Bluebonnet) • 600 mg, 60 veg. caps</td>
<td>18.08 13.56</td>
<td></td>
</tr>
<tr>
<td>00605</td>
<td>Regimin • 60 enteric-coated caps</td>
<td>19.95 14.96 14.00</td>
<td></td>
</tr>
<tr>
<td>01708</td>
<td>Reishi Extract Mushroom Complex • 60 veg. caps</td>
<td>30.00 22.50 20.25</td>
<td></td>
</tr>
<tr>
<td>01448</td>
<td>Rejuvenex® Body Lotion • 6 oz</td>
<td>24.00 18.00 14.85 12.75</td>
<td></td>
</tr>
<tr>
<td>01621</td>
<td>Rejuvenex® Factor Firming Serum • 1.7 oz</td>
<td>65.00 48.75 37.50</td>
<td></td>
</tr>
<tr>
<td>01220</td>
<td>Rejuvenex® (Ultra) • 2 oz</td>
<td>52.00 39.00 33.00 29.25</td>
<td></td>
</tr>
<tr>
<td>00676</td>
<td>Rejuvenight® (Ultra) • 2 oz</td>
<td>39.95 29.96 27.00</td>
<td></td>
</tr>
<tr>
<td>01410</td>
<td>Resveratrol W/Resveratrolbene • 100 mg, 60 veg. caps</td>
<td>36.00 27.00 24.00</td>
<td></td>
</tr>
<tr>
<td>02030</td>
<td>Resveratrol (Optimized) • 60 veg. caps</td>
<td>46.00 34.50 31.00</td>
<td></td>
</tr>
<tr>
<td>00889</td>
<td>Rhodiola Extract • 250 mg, 60 veg. caps</td>
<td>14.00 10.50 9.00</td>
<td></td>
</tr>
<tr>
<td>01900</td>
<td>Ribogen™ French Oak Wood Extract • 200 mg, 30 veg. caps</td>
<td>36.00 27.00 24.75</td>
<td></td>
</tr>
<tr>
<td>00972</td>
<td>(D) Ribose Powder • 150 grams</td>
<td>27.50 20.63 18.56</td>
<td></td>
</tr>
<tr>
<td>01473</td>
<td>(D) Ribose Tablets • 100 veg. tabs</td>
<td>32.00 24.00 21.00</td>
<td></td>
</tr>
<tr>
<td>02169</td>
<td>Rainforest Ground Coffee • 12 oz. bag</td>
<td>13.00 9.75</td>
<td></td>
</tr>
<tr>
<td>02173</td>
<td>Rainforest Blend Ground Coffee Natural Mocha • 12 oz. bag</td>
<td>15.00 11.25</td>
<td></td>
</tr>
<tr>
<td>02172</td>
<td>Rainforest Blend Ground Coffee Natural Vanilla • 12 oz. bag</td>
<td>15.00 11.25</td>
<td></td>
</tr>
<tr>
<td>02171</td>
<td>Rainforest Blend Whole Bean Coffee 12 oz. bag</td>
<td>13.00 9.75</td>
<td></td>
</tr>
<tr>
<td>02170</td>
<td>Rainforest Blend Decaffeinated Roast Ground Coffee 12 oz. bag</td>
<td>14.00 10.50</td>
<td></td>
</tr>
<tr>
<td>01208</td>
<td>R-Lipoic Acid (Super) • 240 mg, 60 veg. caps</td>
<td>49.00 36.75 33.75</td>
<td></td>
</tr>
<tr>
<td>00070</td>
<td>RNA Capsules • 500 mg, 100 caps</td>
<td>17.95 13.46 12.12</td>
<td></td>
</tr>
</tbody>
</table>

### Subtotal of Column 9

### Subtotal of Column 10

Super Sale Savings On All Products • Offer Ends January 31, 2018

January 2018

*** Receive 25% Off The Retail Price of All Products ***
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Product</th>
<th>Retail Each $</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>01468</td>
<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT 60 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01469</td>
<td>TRIPLE ACTION CRUCIFEROUS VEGETABLE EXTRACT w/RESVERATROL 60 veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td>22.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02003</td>
<td>TRIPLE ACTION THYROID 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01803</td>
<td>TRI SUGAR SHIELD* 60 veg. caps</td>
<td>36.00</td>
<td>27.00</td>
<td>24.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01386</td>
<td>TRUFIBER™ 180 grams</td>
<td>32.95</td>
<td>24.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01389</td>
<td>TRUFLORA* PROBIOTICS 32 veg. caps</td>
<td>42.95</td>
<td>32.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01722</td>
<td>L-TRYPTOPHAN 500 mg, 90 veg. caps</td>
<td>33.00</td>
<td>24.75</td>
<td>22.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01721</td>
<td>TRYPTOPHAN PLUS (Optimized) 90 veg. caps</td>
<td>32.00</td>
<td>24.00</td>
<td>21.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02216</td>
<td>TWO-PER-DAY 60 tablets</td>
<td>12.00</td>
<td>9.00</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02215</td>
<td>TWO-PER-DAY 120 tablets</td>
<td>21.00</td>
<td>15.75</td>
<td>14.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02214</td>
<td>TWO-PER-DAY 120 caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00326</td>
<td>L-TYROSINE 500 mg, 100 tablets</td>
<td>13.50</td>
<td>10.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01921</td>
<td>URIC ACID CONTROL 60 veg. caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00213</td>
<td>VANADYL SULFATE 7.5 mg, 100 veg. tablets</td>
<td>15.00</td>
<td>11.25</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02102</td>
<td>VENOFLOW™ 30 veg. caps</td>
<td>52.00</td>
<td>39.00</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00408</td>
<td>VENOTONE 60 caps</td>
<td>18.95</td>
<td>14.21</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01327</td>
<td>VINFUCETINE 10 mg, 100 veg. tablets</td>
<td>18.00</td>
<td>13.50</td>
<td>10.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00372</td>
<td>VITAMIN B3 NIACIN 500 mg, 100 caps</td>
<td>7.65</td>
<td>5.74</td>
<td>4.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00208</td>
<td>VITAMIN B5 500 mg, 100 veg. caps (Panthenic Acid)</td>
<td>11.00</td>
<td>8.25</td>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01535</td>
<td>VITAMIN B6 250 mg, 100 veg. caps</td>
<td>12.50</td>
<td>9.38</td>
<td>8.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00381</td>
<td>VITAMIN B12 500 mcg, 100 lozenges</td>
<td>8.75</td>
<td>6.56</td>
<td>5.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01634</td>
<td>VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 60 veg. tablets</td>
<td>10.00</td>
<td>7.50</td>
<td>6.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00927</td>
<td>VITAMIN C w/DIHYDROQUERCETIN 1,000 mg, 250 veg. tablets</td>
<td>27.00</td>
<td>20.25</td>
<td>18.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00084</td>
<td>VITAMIN C POWDER (BUFFERED) 454 grams</td>
<td>28.00</td>
<td>21.00</td>
<td>19.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01736</td>
<td>VITAMIN C-MAGNESIUM CRYSTALS (EFFERVESCENT) 180 grams</td>
<td>20.00</td>
<td>15.00</td>
<td>13.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01732</td>
<td>VITAMIN D3 2,000 IU, 1 fl. oz, Mint flavor</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01750</td>
<td>VITAMIN D3 1,000 IU, 90 softgels</td>
<td>7.00</td>
<td>5.25</td>
<td>4.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01751</td>
<td>VITAMIN D3 1,000 IU, 250 softgels</td>
<td>12.50</td>
<td>9.38</td>
<td>8.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01713</td>
<td>VITAMIN D3 5,000 IU, 60 softgels</td>
<td>10.00</td>
<td>7.50</td>
<td>6.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01718</td>
<td>VITAMIN D3 7,000 IU, 60 softgels</td>
<td>14.00</td>
<td>10.50</td>
<td>9.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01758</td>
<td>VITAMIN D3 W/SEA-IODINE™ 5,000 IU, 60 caps</td>
<td>14.00</td>
<td>10.50</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00864</td>
<td>VITAMIN D3 LIQUID 2,000 IU, 1 fl. oz</td>
<td>28.00</td>
<td>21.00</td>
<td>18.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02940</td>
<td>VITAMINS D AND K W/SEA-IODINE™ 60 caps</td>
<td>24.00</td>
<td>18.00</td>
<td>16.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01863</td>
<td>VITAMIN E (Natural) 400 IU, 90 softgels</td>
<td>28.00</td>
<td>21.00</td>
<td>19.50</td>
<td>18.00</td>
<td></td>
</tr>
<tr>
<td>01936</td>
<td>VITAMIN K2 (Low dose) 45 mcg, 90 softgels</td>
<td>18.00</td>
<td>13.50</td>
<td>12.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Books **

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Product</th>
<th>Retail Each $</th>
<th>1 Unit Each</th>
<th>4 Unit Each</th>
<th>10 Unit Each</th>
<th>QTY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>33988</td>
<td>THE RIGHT TO TRY by Darcy Olsen • 2016</td>
<td>26.99</td>
<td>20.24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33885</td>
<td>THE BLUE ZONES SOLUTION by Dan Buettner • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33877</td>
<td>THE TRUTH ABOUT MEN AND SEX by Abraham Morgentaler, MD, FACS • 2015</td>
<td>16.99</td>
<td>12.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33875</td>
<td>DOCTORED: THE DISILLUSIONMENT OF AN AMERICAN PHYSICIAN by Sandeep Jauhar • 2015</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33874</td>
<td>MISSING MICROBES by Martin J. Blaser, MD • 2014</td>
<td>28.00</td>
<td>21.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33873</td>
<td>EATING ON THE WILD SIDE by Jo Robinson • 2014</td>
<td>16.00</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DPT05</td>
<td>DISEASE PREVENTION AND TREATMENT, EXPANDED FIFTH EDITION by Sergey A. Dzugan, MD, PhD • 2014</td>
<td>69.95</td>
<td>39.95</td>
<td>36.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33865</td>
<td>THE RESTORATION OF THE HUMAN BODY [IN 7 PARTS] by Sergey A. Dzugan, MD, PhD • 2014</td>
<td>29.95</td>
<td>22.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33862</td>
<td>I'M TOO YOUNG FOR THIS by Suzanne Somers • 2013</td>
<td>26.00</td>
<td>19.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33835</td>
<td>PHARMOCANCY by William Falloon • 2011</td>
<td>24.00</td>
<td>9.60</td>
<td>8.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33838</td>
<td>YOUR GUIDE TO HEALTHY SKIN THE NATURAL WAY by Gary Goldfaden, MD • 2012</td>
<td>26.00</td>
<td>15.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33815</td>
<td>KNOCKOUT by Suzanne Somers • 2009</td>
<td>25.99</td>
<td>17.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* These products are not 25% off retail price.  
** Due to license restrictions, this product is not for sale to customers outside of the USA.  
*** Due to license restrictions, this product is not for sale to Canada.  
† Due to license restrictions, this product is not for sale to customers outside of the USA.  
† † These products are not 25% off retail price. Due to license restrictions this product is not for sale to customers outside of the USA.
**ORDER SUBTOTALS**

<table>
<thead>
<tr>
<th>SUBTOTAL COLUMN 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBTOTAL COLUMN 2</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 3</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 4</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 5</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 6</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 7</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 8</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 9</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 10</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 11</td>
<td></td>
</tr>
<tr>
<td>SUBTOTAL COLUMN 12</td>
<td></td>
</tr>
</tbody>
</table>

**ORDER TOTALS**

| SUBTOTAL OF COLUMNS 1 - 12 |  |

**SUPER SALE DEDUCT 10% (Subtotal X 10%)**

ENDS 01/31/18

Customers enrolled in Premier receive free unlimited standard delivery in the U.S., excluding U.S. territories, and do not have to pay the $5.50 postage and handling fee.

**POSTAGE & HANDLING** (Any size order, in the U.S. includes Alaska & Hawaii)

- $5.50

**C.O.D.s (ADD $7 FOR C.O.D. ORDERS)**

- UPS OVERNIGHT add $16, UPS 2nd DAY AIR add $7. For Puerto Rico, US Virgin Islands, add $7. CANADA UPS EXPRESSFlat rate $17.50, UK Flat rate $25 USD. All other international air will be added.

**SHIPPING**

| GRAND TOTAL (MUST BE IN U.S. DOLLARS) |  |

**Please mail to:** Life Extension

P.O. Box 407198 • Ft. Lauderdale, Florida 33340-7198

Or Call Toll Free 1-800-544-4440 • Fax: 866-728-1050

**BILL TO ADDRESS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>COUNTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CITY/STATE/ZIP-POSTAL CODE</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VISA/MASTERCARD/AMEX/DISCOVER #</th>
<th>EXP. DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SHIP TO ADDRESS**

<table>
<thead>
<tr>
<th>NAME</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>COUNTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CITY/STATE/ZIP-POSTAL CODE</th>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Signature

**Prices subject to change without notice. Please notify Life Extension of any address change.**
Super Bio-Curcumin®

Super Bio-Curcumin® features a patented extract from turmeric root that absorbs up to 7 times better than standard curcumin. This product is ideal for those seeking to support normal cell-cycle growth and healthy inflammatory response.

Advanced Bio-Curcumin® contains the same optimal potency of curcumin with the added benefits of ginger and additional turmeric extracts.

Suggested dose for either Bio-Curcumin® formula is one capsule daily for otherwise healthy individuals.

Super Bio-Curcumin®

Item #00407 • 60 vegetarian capsules

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle $38</td>
<td>$25.65</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$23.63 each</td>
</tr>
</tbody>
</table>

Non-GMO

Advanced Bio-Curcumin® with Ginger & Turmerones

Item #01924 • 30 softgels

<table>
<thead>
<tr>
<th>Retail Price</th>
<th>Super Sale Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottle $30</td>
<td>$20.25</td>
</tr>
<tr>
<td>4 bottles</td>
<td>$18.23 each</td>
</tr>
</tbody>
</table>

Non-GMO

For full product description and to order Super Bio-Curcumin® or Advanced Bio-Curcumin® with Ginger & Turmerones, call 1-800-544-4440 or visit www.LifeExtension.com

Bio-Curcumin® and BCM-95® are registered trademarks of Dolcas-Biotech, LLC. U.S. Patent Nos. 7,883,728, 7,736,679 and 7,879,373.

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.
7 FDA FUELED OPIOID EPIDEMIC
Opioid overdoses have killed 300,000 Americans. This wouldn't have happened if the FDA had not approved highly addictive opioid drugs for routine pain relief.

26 NOVEL WAY TO IMPROVE INTESTINAL MICROBIOME
UCLA School of Medicine has shown how a novel prebiotic reduces harmful intestinal bacteria.

59 MILK THISTLE MAY PROTECT AGAINST SECOND-HAND SMOKE
Milk thistle extracts may help protect against COPD (chronic obstructive pulmonary disease) often caused by second-hand smoke.

36 CARNOSINE, CATARACTS AND VISUAL CLARITY
By age 80, half of all Americans will have cataracts. Two forms of carnosine can protect and improve lens structure and visual clarity of aging eyes.

46 OLIVE OIL EXTENDS HUMAN LIFESPAN
In a clinical study, those who ingested the most olive oil-derived polyphenols lived 9.5 years longer.

66 CoQ10 REDUCES HEART FAILURE DEATHS
Coenzyme Q10 has been shown to improve cardiac function in heart failure patients.