Testimonials

AUBREY DE GREY Ph.D.
“IAS has shown great vision and leadership as an organization focused mainly on the provision of contemporary medical interventions against aging, and in also supporting the SENS Foundation efforts to hasten the development of much more powerful future interventions.”

NICHOLAS PERRICONE M.D.
“IAS is an outstanding resource for the finest, most up-to-date news and information on healthy aging. They also offer products of the highest integrity and efficacy. In fact, IAS is the world’s greatest source, (often the only source) for the most cutting-edge and advanced nutrients to ensure optimum health span and maximum life span.”

THIERRY HERTOGHE M.D.
“IAS have a history of making throughout the world crucial, but difficult to access medications available to patients. IAS is one of the pioneering societies in antiaging medicine that has helped this new medical speciality move forward.”

JONATHAN V. WRIGHT M.D.
“Every adult has the right to take care of his or her own personal health as he or she chooses. In the 20th and 21st centuries this universal human right has been nearly obliterated by an ocean of nanny state regulations and deliberate suppression of information by bureaucracies, with hidden and not-so hidden agendas. International Antiaging Systems is a beacon of useful health care information and a literal island of freedom of health care product choice in our otherwise unfree health care world.”

WALTER PIERPAOLI M.D.
“I have known IAS for many years and they are a qualified group who provide for me, my family and my patients. Their skill and professional capacity has liberated me from all sorts of problems concerning the search for guaranteed and often rare supplements, or anything which is available but problematic to find. Their service goes far beyond duty and helps in many ways to maintain optimal health.”

FRANK SHALLENBERGER M.D.
“The tools that are available today to treat the aging process are truly amazing. Thanks to IAS the field of Anti-Aging medicine has expanded to the point that feeling and functioning 10-20 years younger is easily achievable. Their information and product services are regularly used by my patients.”
Welcome

We’re sorry for the delay in the release of the first 2020 Aging Matters™ magazine. However, I guess you already know the reason why. After all, much of the world is in a lockdown with some businesses not operating and others on a go-slow with part-time staff, mostly working from home etc. So, it is difficult to keep to deadlines!

But that aside, we think we’ve got another great issue for you to read and digest. Dare I say that you might have more time than usual to peruse it?

What a delight it was to interview the glamorous Suzanne Somers, a lady whom many of you will know. And for those of you who don’t, (who may likely live outside of north America), then you should learn about her amazing career and her dedication to antiaging.

Her numerous books are devoted to describing the health ‘alternatives’ and that much can be done to improve, whatever your age or condition. We highly recommend her latest book, a new way to age. In it, Suzanne talks about her life, her attitudes and of course her latest health regimes. Dare I mention that she is 73? Go and look at the cover again and you will want to read her interview ASAP!

And the next article is another stop press moment. Looking at the remarkable work of high-dose melatonin in the field of cancer. Find out all the details here, we feel confident this will be a much-shared article with people who have cancer concerns, either for themselves, a friend or a family member.

Plus, Brian M. Delaney writes his first, (but hopefully not his last) article for us. He describes the great work being undertaken in the Vitality in Aging trials; this remarkable new type of trial is held under the patronage of the Age Reversal Network and Bill Faloon and it is a game changer. Read why inside and consider joining the trial program yourself.

Lastly, a subject that is close to the heart of many gentlemen is erectile dysfunction. Most of the world knows about Viagra® and other drugs, but what natural options are available? In addition, how does a man improve his sex drive/libido. It’s all here.

We trust there is something inside that interests you. Please share the magazine, it is free to download and forward via major social media platforms.

We hope you and your family and friends stay safe and well. We all look forward to seeing sunlit uplands soon.

Phil Micans, MS, PharmB
Editor, Aging Matters™ Magazine

Ward Dean, M.D.
Medical Director, IAS Group

Declaration: The Aging Matters™ magazine is intended for IAS private club members (and therefore is not intended for the public). It focuses on the latest international nutritional, hormonal and drug therapies to help combat the signs of aging. These signs include the physical, mental and internal changes consisting of the diseases and disorders such as cancer, arthritis and senile dementias etc. However, the main focus is upon the prevention of such aging diseases and disorders for the ‘healthy-aging’ individual.

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www.aging-matters.com
Palmitoylethanolamide (PEA). The natural dietary supplement that tackles a wide range of disorders, from chronic pain and inflammation to influenza and the common cold.

What are the benefits of PEA?

- Proven to be effective and safe in the treatment and prevention of flu and colds in six double blind, placebo-controlled clinical trials in over 3,000 people.
- Clinically proven to significantly reduce chronic pain without side effects.
- No negative side effects have been reported.
- No adverse interactions between PEA and regular medicines have been reported.
- Dozens of clinical trials and widely studied since the early 1970’s with excess of 500 scientific articles attributing the therapeutic effects.

Palmitoylethanolamide (PEA) is a naturally occurring compound found in plant and animal cells and is a bioactive functional lipid belonging to a class of molecules known as fatty acid amides. It is produced in most cells in our bodies by on-demand synthesis when needed, naturally increasing in situations where cells or tissue is damaged or is under threat of damage.

PEA’s wide spectrum of biological properties includes both anti-inflammatory and pain relief, acting as a protective and repairing molecule whilst supporting the self-healing ability of the body and benefits the peripheral and central nervous system.

Palmitoylethanolamide (PEA) belongs to the endocannabinoid system, known to have both neuroprotective and immunomodulatory properties. Current evidence is indicating favourably of the therapeutic potential of endocannabinoids, including Palmitoylethanolamide (PEA), in immune disorders and disease states known to entail or provoke immune responses.

PEA is increasingly being recognised as a safe and effective chronic pain relief. In one significant clinical placebo-controlled study on chronic pain involving patients with severe hernia pain, in a few weeks, PEA significantly decreased the pain from 7 to 2 on a Visual Analogue Scale (VAS) at a daily dose of 600mg, with many subsequent studies reporting similar beneficial results.

When measuring the effectiveness of analgesia using the Number Needed to Treat (NNT) scale, PEA was compared to Amitriptylene (an antidepressant widely prescribed for pain and migraines). Amitriptylene returned an NNT of 4.6, whereas PEA returned an NNT of 1.5 for chronic pain.
In six clinical double-blind studies involving in excess than 3,000 people, PEA was shown to be safe (without side effects) and effective in the treatment and prevention of flu and colds. PEA was shown to reduce the chance of contracting the flu by 30% to 60%, and in instances where the flu was already present, the results showed a significant reduction in the severity of the symptoms and wellbeing and the duration of the flu was significantly less than observed against the placebo controls.

**PEA vs CBD**
PEA indirectly activates CB1 and CB2 (Cannabinoid Type 2 Receptors). CB1 receptors are found in the Central Nervous System and CB1 and CB2 are both found in certain peripheral tissues.

**What are the medical benefits of cannabinoids?**

Cannabinoids are the active chemicals in medical marijuana and are similar to the chemicals produced by the body that are involved in; appetite, memory, movement and pain.

Research suggests that Cannabinoids may:

- Reduce anxiety
- Reduce inflammation and relieve pain
- Control nausea and vomiting caused by Chemotherapy
- Kills cancer cells and slows tumour growth
- Relaxes muscles in MS sufferers
- Stimulates appetite to improve weight gain

**PainPRO (PEA)**

PEA is a cannabimimetic, in other words it mimics the process of CBD in the body, and can be argued that it could be considered a better alternative to CBD, Hemp cannabinoid products due it being a single molecule and subsequently much easier to measure into precise doses, not to mention the uncertainty around CBD products’ status in the supplement sector.

Palmitoylethanolamide (PEA) is currently experiencing a huge amount of publicity and attention and with it being widely associated as a significant challenger to the CBD market.

**90 x 400mg Capsules: $39.99**

(PEA) Palmitoylethanolamide dosages:

Initial dose of 1200mg per day for first 6 weeks, followed by a maintenance dose of 800mg per day thereafter.

[www.antiaging-systems.com](http://www.antiaging-systems.com)
EDTA oral chelation treats and prevents major health conditions such as cardiovascular disease and strokes, two of the world’s biggest killers. It can increase flexibility in blood vessels and help avoid the need for bypass surgery. Not only that, as part of an anti-aging regime, EDTA is a remarkable tool. It encourages the flow of oxygenated blood to tissues and organs helping rejuvenation.

EDTA is a powerful antioxidant, a molecule known as a chelating agent and an amino acid. It supports normal endothelial function and prevents the production of free radicals that cause damage to blood cells and organs in the body.

The battle within you...
Most free radicals are destructive, they are unstable and reactive molecules within the body. They search the body for missing electrons to complete their mission and in the process, they damage vital cell membranes. The body struggles to fight and get rid of free radicals that restrict blood flow hence it is one of the main causes of heart attacks, strokes and speeding up the aging process.

You can build a defence and fight back with EDTA oral chelation, a safe and protective treatment. It protects cell membranes, DNA and enzyme systems by reducing the destructive effects of free radicals. The amino acid is a claw-like substance that travels through the bloodstream, it grabs other molecules and sticks to them. It binds tightly around the molecules and pulls them from a membrane or blood tissue. After which, it delivers the unwanted molecules to the kidney which is excreted in your urine.

Where do free radicals come from?
Most free radicals come from environmental sources such as:
- Heavy metals
- Household chemicals
- Ultraviolet radiation
- Tobacco smoke
- Food additives
- Fried food with re-used oil
- Soil
- Lead-based paint
- Exhaust fumes
- Industrial waste
- Burning fossil fuels
- Farm chemicals
- Leakage from power plants
- Some vaccines with preservatives

Free radicals are in the water we drink, the food we eat and the air that we breathe. We can’t get away from them but with EDTA you can reduce the negative effects of pollution and heavy metals in the body.
Some occupations have increased exposure to free radicals through different types of metals such as:

- Physicians, dentists, pharmaceutical and lab workers
- Painters, print workers, metal workers and battery makers
- Cosmetic workers, engravers and photographers

Metal exposure can increase the risk of neurological problems, Parkinson’s disease, multiple sclerosis, learning disabilities, blocked arteries, clots and fatigue disorders. Unfortunately, a lot of modern illnesses relate to a build-up of toxic substances in the environment and what we consume. For example, lead poisoning has been recorded as far back as 100BC and studies have revealed that a deceased person today has on average 1000 times more lead in their body compared to that of a person 400-500 years ago.

In an attempt to reduce the risks of pollution, Congress passed the Clean Air Act in 1970 and phased out leaded gas around the 1980s. 30 years ago EDTA was developed in IV form but oral chelation is easier and less intrusive.

EDTA Pro is a cleansing, potent chelating agent with proven positive outcomes.

Take a stand against our stressful and polluted world with EDTA.

**EDTAPRO™**

60 x 500 mg capsules: $24.99

www.antiaging-systems.com

References

2. https://webmd.com/vitamins/ai/ingredientmono-1032/edta
5. https://www.niddk.nih.gov/books/NBK158762/
An interview with Suzanne Somers

by Phil Micans

PM: You’ve had an amazing career and life Suzanne, please tell us a little about yourself.

SS: I was born in a little town in northern California, a place where you would never expect someone like me could end up having this incredible career in life.

I was discovered in the commissary at NBC Burbank, I was sitting there by myself waiting to hear if I got a part and in walked Johnny Carson. He came over to me and said ‘hey little lady what are you doing here ‘and I said I have a call back for the Dom DeLuise show and he said ‘that’s great , he’s a friend of mine, I hope you get it’ . At that point, I had written my first book of poetry called ‘TOUCH ME’ so I handed it to him. That was Wednesday, Friday of that week I was booked on the TONIGHT SHOW the biggest and most popular national talk show in American television at that time- since everybody watched it.

I was so broke at that time and had a little baby I was raising by myself. I was 21 years old I didn’t even have a dress to wear on the night of the show.

I remember standing behind that famous curtain , so nervous, thinking ‘oh my god they must love my poetry’, and then I heard Johnny introducing me, saying “we’ve all been wondering who the mysterious blonde in the Thunderbird is in AMERICAN GRAFFITI ! Well we found her!” Then I walked out to this tremendous applause. I was taken aback because my part in American graffiti, (which granted was the
biggest grossing movie at that time) was so small, I had never even seen the it so I didn’t realize that the blonde in the Thunderbird was the pivotal character, mysterious because she was just driving around town at night in a white 57 T-Bird and the main character, RICHARD DRYFUS, was obsessed with finding her.

"I was only on camera for THREE seconds but GEORGE LUCAS the director, (I didn’t even know who he was) had me lit like a goddess and evidently made me look like the most beautiful woman in the world."

For me, this was just another small part and I needed the money. I didn’t even get a credit in the movie, although years later when I was famous, I was billed as the star of the movie. Such is Hollywood! Ha ha.

Turns out Johnny Carson loved me as a guest so he started booking me on his show every month and I would read him my poems- while he would comedically mock the poetry in a way that was funny and respectful. As a result, my little book of poetry became the bestselling book of poetry that year. All those appearances eventually lead to my being hired to star in a sitcom called ‘THREE’S COMPANY.’ It became the #1 biggest show in America. Was it luck? Was it being in the right place at the right time? Was it fate?

PM: And now today you are well known as a celebrity concerned about optimal health and antiaging- how did that come about?  
SS: Well, I remained on THREE’S COMPANY for FIVE six glorious years, my popularity became tremendous in America by playing the dumbest woman on TV. I was good at it! But when my contract was over, it became time for my contract to be renegotiated. I was aware that the men were being paid 10 to 15 times more than I was being paid on lesser shows so I asked to be paid commensurate with the men. Figuring I had the number one demographics of all women on TV at that time and that this would not be a problem.

Unbeknownst to me the network had decided to use me as the patsy so that all the other women on Television wouldn’t start renegotiating. As a result, I was fired! At the time I felt it was unfair and terrible but one day I heard a voice in my head, it said ‘why don’t you focus on what you have rather than what you don’t have’. I realized what I had was tremendous visibility, everybody in America knew my name, so I reinvented. I was a good singer and dancer, so my husband made a deal for me to star with my own production show in Las Vegas at the MGM Grand hotel. It was a tremendous success and I loved performing. I had hired all the greatest people to put together the show for me and every night was a joy. This went on for years, and I was named LAS VEGAS female entertainer of the year, (along with Frank Sinatra who was named male Las Vegas entertainer of the year!)

As a productive person I used my days to write, I couldn’t just sit in my hotel room all day. I’ve always loved writing; it’s how I’ve worked out all the issues in my life.

My second book was called ‘KEEPING SECRETS’ about growing up the child of a violent alcoholic and what it does to you even if you don’t drink alcoholic as an adult. Well, it struck a chord and started the ‘adult children of alcoholics’ movement in America. I went on the lecture circuit and realized that all negatives can become
positives by using it to work for you. This book became a #1 number the best-seller on the New York Times list (for 16 weeks). It also became a movie. Had I not been fired from THREES COMPANY I probably wouldn’t need or have the incentive to write it.

The next book was about blending families and the new phenomena of divorce and the difficulty for the children who became collateral damage of divorce. There’s no kid who wants a new parent, I don’t care how nice. I married ALAN HAMEL and at this point we were trying to create a cohesive family. No one knew How best to do this. For us it required therapy allowing everyone to have the chance to say how they really feel in a safe environment. Those sessions healed us and today we have his beautiful family. After that I wrote a few more books, one on the effects of abuse, another on bouncing back from life events and the triumph of the human spirit, and then I wrote nine books on weight loss called SOMERSIZE- which sold 9 million copies collectively over the nine books. These books struck a chord. America embraced the high fat, high protein, high vegetable diet.

"By then I was starting to experience the symptoms of hormonal decline. No one at that time had mentioned the word Menopause. I wrote a book called; ‘THE SEXY YEARS’. I wanted to put a positive spin on it."

THE SEXY YEARS explained how to restore yourself to hormonal balance with bioidentical hormones. Lucky for me it struck another chord. I’ve written several books on bioidentical hormones which have sold millions of copies and started a movement. Another of my books KNOCKOUT, about doctors who are curing cancer without drugs, made a major impact selling all over the world even as we speak.

That naturally lead to the next book called TOX-SICK, exploring issues that were troubling me greatly. We are being bombarded by chemicals, we are living in the greatest environmental assault in the history of humanity and people are getting strange afflictions from this exposure and the doctors are not prepared. This is not what they studied in medical school.

Where did all the brain afflictions come from; ADD, ADHD, OCD, dyslexia, dyspraxia, dementia and Alzheimer’s? In America Alzheimer’s is an epidemic. Baby boomers have a 50% increase risk of developing Alzheimer’s and baby boomers with diabetes have an additional 50% chance of getting Alzheimer’s making their risk a 75% chance. This is a terrible thing; All these wasted brains, and worse, all the wasted wisdom lost in a fog that will never be recovered. These patients will be kept alive having no idea who they were and who they are. Tragically, at the end President Reagan didn’t know he had been President. He was such a sweet man.

PM: And since then, you’ve written many best-selling health books, how has this progressed over the years?

SS: I realized in life that you do not choose passion, rather it chooses you. It was a natural transition and I became passionate about letting people know how the planet has changed, how it’s affecting us, and how we can help ourselves.

By now, I had a loud voice because of my fame which worked in my favor because the doctors of note started coming to me. They were doing the work, but they couldn’t get
the message out, my books allowed them to be heard and improved their businesses so they could start really helping people. It’s been extremely rewarding to be the messenger.

PM: And your latest one- A New Way To Age- is what number?

SS: This is my 27th book and I believe ‘A NEW WAY TO AGE’ is my best book so far. It sort of fell out of me. I realized that aging is about worn out parts. Imagine if you owned a Maserati, you would never put inferior fuel into it, and you would never ignore strange sounds and ticks in your Maserati. You’d take it right to a mechanic. We humans choose not to hear the ‘language’ of the body those aches, those symptoms, particularly menopausal symptoms, where you can’t sleep, lose your libido, your hair loses its lustre, or your skin starts to wrinkle, you can’t lose weight etc.

There’s much, much more but this book makes it really easy for the reader to apply to themselves and they know where to go to get the proper testing and finding the proper doctor today.

All doctors are not created equal, there are those that came out of medical school and are stuck in that thinking of allopathic. And then there are the doctors I interview who are Bonafede MDs educated at fine medical institutions but realized we’ve hit a wall with allopathic medicine which is show me the problem is the prescription. So, they took the chance to step out of their safe ‘standard of care box’ to do it a different way.

The doctors in my book treat a different way yet when drugs are necessary, they understand that. Pain and infection are controlled by pharmaceutical drugs and when you need them it’s a godsend.

When I start a book, I make myself a blank slate to see what emerges. I’m not a
doctor but I’m passionate about health and this book surprised me with talk about what I call the ‘collective consciousness’ meaning the doctors are now consciously aware of the necessity for CELLULAR health. It makes sense to me being that each human being is approximately 40 trillion cells.

This is true regeneration, true age reversal through breakthrough science such as removal of senescent cells.

As we age our cells gather debris just like the pipes in your home get clogged and then you have to call the Roto Rooter man to come and clean them out and now your pipes work better. Removing cellular debris is possible by taking a supplement I write about, once a week. Essentially, this supplement cleans out your cells making them operate younger, thus making you younger, making you have more energy, also restoring YOUR youthful levels of NAD a new supplement or if your health is precarious you might prefer NAD by IV treatment to). Its function is to repair cellular damage.

Right there with those two supplements, you’re making a huge difference in your energy and health and while you are doing this you are turning back the clock.

PM: Gosh! That’s brilliant and congratulations on keeping up the hard work to continue to create these great epistles. What’s new in your latest publication?

SS: What’s new is the acceptance. On this book tour not one interviewer or person attacked me. I was treated with respect and the book shot to #1. In its category the first day.

But what I realized the most is that the people are finally ready to hear this message. They see me and want what I have. I’m very open about my age and my looks are clearly natural.

What I do is keep my insides young, my cells, my hormones, my organs, my glands, by eating only organic food that I grow myself) plus supplementation. It’s up to each one of us to take good and tender care of ourselves. No one will care as much about you as you.

Along the way my devotees and followers have always stayed with me as well as the doctors I feature. And now, best of all doctors are switching over. The patients are demanding it, they are swarming to the integrative and alternative doctors in droves. Doctors who realize this are switching over and it’s very satisfying. My readers are informed making it easier for the doctor to not have to start with each patient in kindergarten. My readers are educated and informed so they can ask more intelligent questions.

"When I first started out, I could only find 30 doctors in America who (are) were informed in alternatives. Now there are millions of these doctors all over the world. Hopefully my books have had a little something to do with it."

PM: Having read it, I really appreciate the fact that you ‘live the advice you offer.’ In other words, you don’t just talk about the path, you walk it too. Please tell us what is important to you.

SS: What’s important to me is to tell the truth. What is also important to know is that you can do everything right and that because
of the environment and the world in which we live is so polluted and filled with EMF’s and electromagnetic radiation from our cell phones that are always on our person, plus we are bombarded from our computers night and day. Clearly, we are all going to be affected. It’s an experiment on us. But if it were to happen to you, if you were to be affected by the environment or cancer, the information in this book will give you the tools to make your body better able to fight and win.

PM: May I say that you look terrific for 73, what are your plans for the future?

SS: To never stop! I love what I do. I make sure to enjoy each day and to be grateful for the love in my life, my incredible husband, my health, my wonderful food, my beautiful family. I am ‘present’. I try not to miss anything.

There’s a beautiful quote by Lao Tsu; “If you are depressed you are living in the past
   If you are anxious you are living in the future
   If you are at peace you are living in the present.”
   I work hard to always be ‘present’ and I am at peace.

PM: Of course, I recommend that folks go and get your latest book which is available in all good bookstores; where can people stay in touch with what you are doing?

SS: I urge people to go to SuzanneSomers.com for information, and products such as my incredible Suzanne Organics, SKIN CARE, HAIR CARE, cosmetics, totally clean, and toxic free (skin care), make up, toxic free lipstick without lead, and so much more. I urge your readers to take a look. We've worked so hard on making them the best and purist product available. We also make household cleaning products from colloidal silver.

I also urge your readers to go to my Facebook Live shows two or three times a week, my BIG AL’S. BAR or sometimes I do them from my bed. Yesterday, I did a show from my outdoor bathtub in the wilderness to have fun using my organic bath and body products. I make it fun, kind of sexy talking to them and seeing the questions and explaining about all our different products. I have to say my most popular shows are at our bar at our home (called Big Al’s Bar). I invite them at 5 o’clock to come and have a tequila with us and thousands come, and we have so much fun and sometimes we are a little naughty. All our shows are archived at my Facebook page.

PM: Suzanne, I can't thank you enough for your time today and to use a British expression- more power to your elbow!

SS: Thank you, Phil, it has been fun and I am honored to be introduced to your European audience. I love your message, I love your magazine, I love your products, I love the doctors some of whom I’ve featured in my new book A NEW WAY TO AGE, such as Dr. Thierry Hertoghe and Dr. Walter Pierpaoli and present his valuable contributions regarding TRH and melatonin—which I take regularly.

It’s been my honor to present them and I thank you again.

Further reading:

For more information visit SuzanneSomers.com
abaris contains TRH or thyrotropin releasing hormone, the hypothalamic hormone now available for the first time in sublingual.

TRH (abaris) 30 x 5mg Sublingual Tablets
$99.99

Find out more at: www.antiaging-systems.com

“I get my MZS and TRH from IAS”
Suzanne Somers

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The world’s first OSCN supplement is a four part kit that is easily and quickly made in a glass of water for immediate use—plus it has no taste nor smell.

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www.antiaging-systems.com
A few years ago, Dr. Frank Shallenberger, a Medical Doctor who makes his practice in Carson City, Nevada—and who also holds a doctorate in Natural Medicine (NMD)—was surfing PubMed, the National Library of Medicine’s database. While there, he ran into an animal study showing that melatonin had an extremely curious effect on active cancers. This was so amazing to him that “it blew his mind.”

What the paper showed was that melatonin could stop cancer from growing—provided the amount consumed was high enough and provided it was taken before sleep under light-restricted conditions.

The key author of the revelatory article was none other than Russel J. Reiter, PhD, unquestionably the greatest melatonin animal researcher in the world, with more than 1,383 scientific articles to date (that averages 25 papers per year for 55 years). In the mind-blowing research piece, scientists fed a group of mice cancer-producing adenocarcinoma and what they noticed—using a method of measuring the growth rate of cancer—was that each night the growth rate of cancer slowed down when the lights were turned off.

What they also discovered was that each morning when the power was restored, the growth rate of their cancers resumed.

Guided in his personal protocol by Dr. Reiter, Dr. Shallenberger now takes 180 mg every night, about 45 minutes before sleep. He avoids all light, (absolutely no light, except red light) during the night. These effectively represent total blackout conditioning, with no ambient light permitted. There are no side effects. He uses pure melatonin (see below).

Melatonin Is the chemical expression of darkness
Melatonin is produced and released in your pineal gland as a response to darkness. As per Dr. Reiter, melatonin is the chemical expression of darkness. It is immediately suppressed by all light, whatever the color, except red light. Melatonin is not a soporific (it doesn’t produce sleep). That’s the role of darkness. You can take melatonin during the day, as well as at bedtime, without any adverse effect. There no serious side effects. Some patients report sleep disturbances and AM sleepiness, but these are few.

Dr. Walter Pierpaoli, one of the world’s leading clinical melatonin researchers, has successfully used daily dosages ranging from 0.1 to 200 mg. That’s a 2,000-fold difference between the lowest dose and the highest! Studies on mice show that even at astronomical doses of 300 mg per day for two years, there were no side effects.
Sleep Like a Stone

“Remember when you were a kid, when you couldn’t remember anything from the moment you put your head on the pillow until you awoke. That’s what I experience every night,” reports Dr. Shallenberger. “Nothing happened when I took the large amount. I continued to sleep 7 hours a night. It didn’t go to 8 or 9 and I didn’t get sick!” Then he gave the same amount of melatonin to his wife. She responded much as he had and finally, he gave it to his cancer patients, some of whom have nothing to lose. He gave them 60 mg with meals (breakfast, lunch, dinner) and 60 mg at bedtime (240 mg throughout the day). There were no illnesses.

How much melatonin do you take?

[This is a hypothetical conversation between Dr. Reiter (italic) and Dr. Shallenberger.]

How much melatonin should I take?

Dr. R: I’m not a medical doctor; I’m a PhD.

Just between us … How much do you take?

Dr. R: I take 180 mg every night, all at once. One hundred eighty mg is entirely safe … it’s the equivalent of the amount animals are given.

Do you know anyone else who takes this amount?

Dr. R: No researcher I know takes less than 100 mg per day. They take it at night in balance with their circadian rhythm...

Where do you get your melatonin? How do you know it’s good?

Dr. R: I analyze every batch myself. There are lots of problems with other things that show up in it. Tableting can damage it. Heat is a problem also. As is pressure.

It’s got to be pure. To a large extent, impurities are why you and other MDs are seeing many problems. With purity requirements met, people who can take only a little (of the un-pure melatonin) can take a lot.

Peak plasma level

The peak plasma level after oral ingestion of melatonin is about 1 hour. At the 180 mg per night dose, high levels are typically sustained throughout melatonin’s half-life, which is 3-4 hours. Melatonin rapidly enters the central nervous system and crosses the blood-brain barrier. Exogenous melatonin does not alter the levels of any other hormones. There is no negative feedback inhibition.

Melatonin activates anti-neoplastic immune reactivity. Direct anti-cancer action: Protects against chemo-radiation damage. On average, the combined results of these studies showed that melatonin greatly reduces the risk of dying. The effects were consistent no matter what dose they used. None of the patients had any significant side effects from the melatonin.

The substantial reduction in risk of death, low adverse events reported, and low costs related to this intervention suggest great potential for melatonin for treating cancer. A few of the many articles in print—melatonin can halve the spread of cancer in a wide variety of tumors. For example, it regulates estrogen receptor expression and transactivation, modulates the enzymes involved in the local synthesis of estrogens, and serves to modulate cell cycle and induce apoptosis.

Moreover, for the inhibition of telomerase activity, plus a similar effect on metastasis, there are direct anti-neoplastic effects. Melatonin decreases cell proliferation at low concentrations and at high concentrations, direct cytotoxic effects occur. Melatonin works as a mitochondrial stimulant.
Furthermore, there is stimulation of cell differentiation and induction of apoptosis and anti-angiogenesis activity. Plus, when it is administered in combination with chemotherapy, a synergistic effect has been found in several cancer types.

There is nothing to lose with high dose melatonin.

If you want to spend the afternoon (or weekend … or longer) looking at PubMed, there’s plenty of material there. For example, while still on the melatonin’s anti-cancer front:

The first reference to a possible role of pineal gland in the growth and spread of malignant tumors is attributed to Georgiou writing about this in 1929. These authors concluded that something of pineal origin actually stimulated tumor growth. Almost 50 years later, in 1977, Vera Lapin organized the first international workshop in Vienna on the relationship between the pineal gland and cancer: it’s called The Pineal Gland as a New Approach to the Neuroendocrine Control Mechanism in Cancer.

This workshop systematized all the knowledge generated to the date of the workshop and was the stimulus of numerous studies on the role of pineal gland in the etiology and pathogenesis of neoplastic diseases. Its ultimate goal was to identify therapeutic tools useful in the treatment of human cancer. Curiously, contrary to Georgiou’s original proposal, it is now commonly accepted that melatonin, the most relevant pineal secretory product, has oncostatic (cancer stopping) properties on a wide variety of tumors and, especially, in those identified as being hormone dependent.

**Suppressing melatonin**

Remember that natural endogenous production of melatonin is immediately suppressed by light, even ambient light, especially blue light, but not red light.

Therefore, always sleep in a blacked-out bedroom. However, light will not affect melatonin taken exogenously, in other words, as supplements by mouth.

**It can be effective for brain cancers**

As mentioned, melatonin rapidly crosses the blood-brain barrier and enters the central nervous system. It is thus beneficial for brain issue problems such as brain cancers and Alzheimer’s disease, Parkinson’s disease, and dementia. Melatonin does not alter any other hormones. As such, there is no negative feedback inhibition.
Melatonin is a naturally occurring molecule secreted by the pineal gland and known as the gatekeeper of the circadian clock. Mounting evidence indicates that melatonin, employing multiple and interrelated mechanisms, exhibits a variety of oncostatic properties in a myriad of tumors during different stages of their progression.

Gatekeeper of the circadian clock
Melatonin is a naturally occurring molecule secreted by the pineal gland and known as the gatekeeper of the circadian clock. Mounting evidence indicates that melatonin, employing multiple and interrelated mechanisms, exhibits a variety of oncostatic properties in a myriad of tumors during different stages of their progression.

Tumor metastases
Tumor metastases, which commonly occur at the late stages of cancer are responsible for many cancer deaths. Metastases lead to the development of secondary tumors distant from a primary site. In reference to melatonin, most investigations have focused on tumor development and progression at the primary site.

Recently, however, interest has shifted toward the role of melatonin on tumor metastases. In a scientific review, the authors highlight current advances in understanding the molecular mechanisms by which melatonin counteracts tumor metastases, including experimental and clinical observations. They place their emphasis on the impact of both cancer and non-neoplastic cells within the tumor microenvironment.

Due to the broad range of melatonin’s actions, the mechanisms underlying its ability to interfere with metastases are numerous. These include modulation of cell-cell and cell-matrix interaction, extracellular matrix remodeling by matrix metalloproteinases, cytoskeleton reorganization, epithelial-mesenchymal transition, and angiogenesis.

Glucose transporters
In another paper, melatonin is shown to be taken up through members of the glucose transporters family and these thus have a central role in the inhibition of cancer. Glucose concentration and the presence of competitive ligands of GLUT1 affect the concentration of melatonin in cells. As a regulatory mechanism, melatonin reduces the uptake of glucose and modifies the expression of GLUT1 transporter in prostate cancer cells. More importantly, glucose supplementation promotes prostate cancer progression in Transgenic Adenocarcinoma of the Mouse Prostate (TRAMP) mice, while melatonin attenuated glucose-induced tumor progression and prolonged the lifespan of tumor-bearing mice.

But melatonin does not induce sleep
Contrary to what many believe, melatonin doesn’t make you sleepy. For the sake of our cancer conversation, melatonin is secreted by the pineal gland. Light suppresses it. Melatonin sensitizes us to light, and darkness causes us to sleep. Dr. Shallenberger has been taking it for nearly three years, as have many of his patients. Nobody has gotten any adverse effects from melatonin, even at the high levels they are taking.

Endothelin-1 (ET-1) is a peptide that acts as a survival factor in colon cancer, inducing cell proliferation, protecting carcinoma cells from apoptosis, and promoting angiogenesis. The data presented show that melatonin inhibits END-1 mRNA expression, the first step in ET-1 synthesis.
In conclusion, melatonin may be useful in treating colon carcinoma in which the activation of ET-1 plays a role in tumor growth and progression. Almost all cancer cells produce it.

Melatonin exerts pleiotropic, (many sided) anticancer effects against a variety of cancer types. Herein, the authors review the correlation between the disruption of the melatonin rhythm and non-small-cell lung cancer (NSCLC) incidence. They also evaluate the evidence related to the effects of melatonin in inhibiting lung carcinogenesis. A special focus is placed on the cancer-stopping effects of melatonin, including anti-proliferation, induction of apoptosis, inhibition of invasion and metastasis, and enhancement of immunomodulation.

NSCLC is a leading cause of death from cancer worldwide. As an indoleamine discovered in the pineal gland, melatonin exerts pleiotropic anti-cancer effects against a variety of cancer types. Melatonin may be an important anti-cancer drug in the treatment of NSCLC. Herein, this correlation between the disruption of the melatonin rhythm and NSCLC incidence is reviewed; the researchers also evaluate the evidence related to the effects of melatonin in inhibiting lung carcinogenesis.

The best treatment for any disease is not to get it!

Special focus is placed on the anti-cancer effects of melatonin, including anti-proliferation, induction of apoptosis, inhibition of invasion and metastasis, and enhancement of immunomodulation. The researchers strongly suggest the
drug synergy of melatonin with radio- or chemotherapy for NSCLC is valuable. The information herein serves as a comprehensive reference for the anti-cancer mechanisms of melatonin against NSCLC.

**Darkness, melatonin and cancer**

It is suggested that the drug synergy of melatonin with radio or chemotherapy for NSCLC could prove to be useful. Melatonin is released in response to darkness. The key cause of disease is the disruption of the circadian system. This is not debatable anymore. If you go to PubMed some day and plug in ‘melatonin,’ you’ll find oodles of material to read. If the half-life of melatonin is 3 hours and you take 180 mg about 45 minutes before sleep, you’ll be at the half-way mark about 4 hours later.

**The key cause of disease is the disruption of the circadian system**

The aforementioned article burrows into melatonin containing over 140 references. It is written by Reiter students Mills and Wu. When looking for melatonin articles, be aware that if Reiter’s name is not on these, his students’ names certainly are. This is a great paper to have in your library. In just a few pages it gives you the lowdown on melatonin.

**Melatonin for gastrointestinal cancer**

In the review titled Melatonin as a Treatment for Gastrointestinal Cancer, the authors first clarify the relationship between the disruption of the melatonin rhythm and gastrointestinal cancer (based on epidemiologic surveys and animal and human studies) and summarize the preventive effect of melatonin on carcinogenesis. Thereafter, the mechanisms through which melatonin exerts its anti-gastrointestinal cancer actions are explained, including inhibition of proliferation, invasion, metastasis, and angiogenesis, and promotion of apoptosis and cancer immunity. Moreover, the paper discussed the drug synergy effects and the role of melatonin receptors involved in the growth-inhibitory effects on gastrointestinal cancer. Altogether, the information compiled here serves as a comprehensive reference for the anti-gastrointestinal cancer actions of melatonin that have been identified to date.

**Almost a slam-dunk**

For estrogen dominant and testosterone prostate cancers, melatonin is a key. Apoptosis is important too. Melatonin has a direct and an indirect anti-cancer effect. It proves a very pleiotropic effect on cancer. One thing that melatonin is very effective for is radiation. So, if the need arises to get an MRI, take melatonin. For radiation therapy take several hundred mg of melatonin (from 100 to 200 mg) about an hour before your MRI. On average, the combined results of these studies show that melatonin reduces the death rate by a whopping 44%. These are from human studies.

**Mitochondrial aspects of oncology**

Because of its selective estrogen receptor modulators (SERM), selective estrogen enzyme modulators (SEEM), and its virtual absence of contraindications, melatonin could be an excellent adjuvant with the drugs currently used for breast cancer.
The antioxidant actions also make melatonin a suitable treatment to reduce oxidative stress associated with chemotherapy, especially with anthracyclines, and radiotherapy.

Melatonin’s anti-estrogenic properties are especially useful for breast cancer prevention in cases of obesity, steroid hormone treatment, or chrono-disruption by exposure to light at night even as little as a tiny fraction of (non-red) light.

The possible anti-cancer properties of melatonin on different types of neoplasias (abnormal growth) have been studied especially in hormone-dependent adenocarcinomas. Despite the promising results of these experimental investigations, the use of melatonin in breast cancer treatment in humans is still uncommon.

This article reviews the usefulness of this indoleamine (a family of neurotransmitters) for specific aspects of breast cancer management, particularly in reference to melatonin’s anti-estrogenic and antioxidant properties:

- Treatments oriented to breast cancer prevention, especially when the risk factors are obesity, steroid hormone treatment or chrono-disruption by exposure to light at night (LAN);
- Treatment of the side effects associated with chemo- or radiotherapy.

The clinical utility of melatonin depends on the appropriate identification of its actions. Because of its SERM and SEEM properties, and its virtual absence of contraindications, melatonin could be an excellent adjuvant with the drugs currently used for breast cancer prevention (anti-estrogens and anti-aromatases). The antioxidant actions also make melatonin a suitable treatment to reduce oxidative stress associated with chemotherapy, especially with anthracyclines, and radiotherapy.

In another study, ER+ breast cancer rat model was established and then rats were randomly divided into five different groups as follows:

1. Control group,
2. Diss group,
3. Adriamycin (ADM) group,
4. Melatonin group, and
5. Melatonin combined with Adriamycin (M + A) group.

Tumor weights were significantly lighter in M + A group than those in ADM group. Under optical and electro-microscopy, tumor cell apoptosis was obviously increased in the melatonin group, and tumor cell injury was more severe in the M + A group than in the ADM group.

Decreased E-cadherin expression in cancer cells increases proliferation, invasion, and/or metastasis. Expression of E-cadherin was higher in melatonin group and M + A group than in other groups. The Melatonin group had the highest one-month survival rate (100%), there was the poorest life quality in ADM group, but the best life quality was in the melatonin group.

Melatonin enhanced the sensitivity of tumors to ADM and improve patient’s life quality.

Acute tubular necrosis is a major side effect of cisplatin. Melatonin is a direct free radical scavenger and indirect antioxidant. We investigated the effects of melatonin on cisplatin-induced changes...
of renal malondialdehyde (MDA), a lipid peroxidation product, and blood urea nitrogen (BUN) and serum creatinine (Cr). The morphological changes in kidney were also examined using light microscopy.

Melatonin administration either before or after CDDP injection (see below) caused significant decreases in MDA. The morphological damage to the kidney induced by cisplatin was reversed by melatonin.

The results show that pharmacological and physiological concentrations of melatonin reduce cisplatin-induced renal injury. Melatonin is both a direct and indirect free radical scavenger. The radical scavenging ability of melatonin works via electron donation to detoxify hydroxyl radical. Ionizing radiation results in the production of hydroxyl radical.

The results from many in vitro and in vivo investigations have confirmed that melatonin protects mammalian cells from the toxic effects of ionizing radiation.

Furthermore, several clinical reports indicate that melatonin administration, either alone or in combination with traditional radiotherapy, results in a favorable efficacy: toxicity ratio during the treatment of human cancers.

Radiation-induced dermatitis is commonly seen during radiotherapy for breast cancer. In a randomized, placebo-controlled double-blind study, patients were allocated to a melatonin-containing topical cream twice daily during radiation treatment and 2 weeks following the end of radiotherapy.

Grade 1-2 acute radiation dermatitis was 59% vs. 90% in the melatonin group. Patients treated with melatonin-containing emulsion experienced significantly reduced radiation dermatitis compared to patients receiving placebo.

### Dosing with Melatonin

- For prevention, take 180 mg about 45 minutes before bedtime every evening.
- If you have cancer, take 60 mg 3-6x/day (always work with a clinician).
- If you have a PET (Positron Emission Tomography) scan, take 300 mg two hours before.

Remember, there are no known contraindications for melatonin.

### References


Please note that this article is abbreviated- to see the complete article please head for:

www.aging-matters.com
Intervention

For years, my friend and colleague Bill Faloon wanted to create a Manhattan Project–like undertaking to solve aging. Until fairly recently, however, there simply wasn’t enough promising science to give such a project more than the wobbliest of legs to stand on. This changed in the 2010s. Suddenly there were concrete, if tentative, scientific findings in mice and even humans showing that aging could be slowed and, in some ways, even partly reversed.

As the results of studies involving blood-based therapies, senolytics like dasatinib and mTOR inhibitors like rapamycin – to name a couple, it began to look as though aging could be understood and controlled almost completely within a handful of decades, provided enough resources were put to the task. The time was thus nigh to focus squarely on solving this problem. For this reason, in the summer of 2019, Bill Faloon and I founded the Vitality in Aging Research Group.

The Vitality in Aging (VIA) Research Group seeks to solve this problem and plague of aging by pursuing two separate tracks.

Vitality in Aging Interventions Program: Halt the Plague of Aging

The plague of aging demands immediate remedial measures, as would any plague. People are dying of aging – tens of thousands per day – and we need to learn how best to keep those alive who are at most immediate risk. For Bill and me and so many others born in the 1950s and 1960s, this goal has deep personal significance: We have elderly parents who, with no antiaging treatments, will not live to see the dramatically effective therapies likely coming in ten to twenty years. And regardless of whether it’s a parent, aunt, uncle, grandparent, or neighbor, all of us should seek to keep our elders alive and well: they are the living, breathing bearers of the cross-general wisdom our society so desperately needs.

In order to identify, optimize, and test the safety of treatments that could be made available today for those who most need them, VIA created the Interventions Program. This program is designed to bring order to the often-chaotic information with which we are so often presented about how to put into practice the knowledge we already possess about promising
interventions. Which of these interventions should one undergo first? How do we arrive at the optimal protocol? How do we identify and mitigate risks?

The first trial that we created under the Interventions Program is the VIA Interventions Trial. This is a multi-intervention trial seeking to test the safety and efficacy of several putative antiaging treatments with which many of us have already started experimenting. The interventions and schedule of treatment are shown in table 1. The trial is planned to run for 15 months. After the fifteen-month period has elapsed, we will evaluate the results, and either extend the trial, likely adding new interventions, or start with a new set and schedule of interventions. We also intend to run several other trials in the coming years, in order to test promising but mostly neglected individual compounds. For example, does rapamycin really increase autophagy? Or does metformin really improve glucoregulatory markers?

### Table 1: The interventions being incorporated into the VIA trial, (shown alphabetically).

- Betaine
- Dasatinib
- Fisetin
- Glucosamine
- Gynostemma pentaphyllum
- Metformin
- Nicotinamide riboside
- Pterostilbene
- Quercetin
- Rapamycin

In the life-extension community, the practice of geriatrics is often denounced as bandaidery, (too little too late). But geriatrics in some cases might keep some of our elders alive long enough for them to be

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**Stair Step Approach to Biological Age Control**

**New interventions improve life extension**

![Stair Step Approach to Biological Age Control](image-url)
able to benefit from future interventions that address the root causes of aging, something that geriatrics often fails to address. In many ways, our Interventions Program is a kind of ‘advanced geriatrics.’ We seek to make this program so advanced that anyone who has aged at all – even people in their twenties – can benefit from the findings the program generates. After all, all adults are aging, and all of us need treatment.

Vitality in Aging longitudinal study: Solve the problem of aging

While the plague of aging constitutes an emergency that requires immediate application of whatever measures we have on hand, the problem of aging – understood in the sense of a mathematical puzzle that needs to be solved – requires us to take a step back, or rather a step up, into the realm of basic science.

The current COVID-19 pandemic provides a perfect analogy: humanity must use what we have at hand; whether that be physical distancing, sanitizers, masks, vitamin C infusions, colloidal silver, vitamin D3, mushroom extracts, oregano oil and antiviral drugs etc., to save lives that are under threat now from the plague, but we can’t be penny-wise and pound-foolish: basic science must also be prioritized in order to find a cure along with highly effective preventive measures, such as a vaccine, in order to have a more comprehensive, long-lasting solution to the problem of COVID-19.

To solve the problem of aging, we have adopted a second research track: the creation of a large, observational study designed to understand aging in sufficient detail that we will have a biological roadmap to the development or discovery of highly effective treatments, treatments that will stop and ultimately reverse all aspects of aging. The VIA Longitudinal Study is thus designed in the spirit not of geriatrics, but of gerontology: What is the ultimate logic (logos) of aging body (geron)?

Bill Faloon, our colleague Dr. James P. Watson, and I were all inspired by the achievements of the Framingham Heart Study, and reasoned that a study of aging that followed the Framingham model might ultimately achieve similarly powerful results in the realm of the biology of aging. Let us review the Framingham Heart Study in order to see what an observational can achieve.

The Framingham Heart Study: An exemplary search for the root causes of a serious medical problem

In much the same way that, today, most people regard death as a natural and unavoidable consequence of aging, people living in the first half of the twentieth
century regarded heart disease and high blood pressure as ‘normal’ consequences of aging. It was only with the untimely demise of a cherished, war-time American President that this attitude began to change.

By the early 1940s, half of all deaths in the US were caused by cardiovascular disease. Yet at that time, few of the risk factors for cardiovascular deaths were known, so heart disease was regarded as an unfortunate, but inevitable consequence of aging. In the 1940s, even the President of the United States was suffering from untreated hypertension. As early as 1932, before he became President, Franklin D. Roosevelt’s blood pressure was measured at 140/100 mm Hg. Yet his doctors ignored this, since 140/100 was then considered to be ‘normal blood pressure’ for a man of his age. In April 1945, when his blood pressure reached 300/190, the President died of a cerebral hemorrhage. He was only 63, and his death was completely preventable.

The president’s premature death made an indelible impression on the American public and prompted the medical community to question the long-standing conventional wisdom that hypertension did not need to be treated. In 1948, largely as an outcome of FDR’s death, President Harry Truman signed into law the National Heart Act, which included funding for a 20-year epidemiological study of hypertension and heart disease. $500,000 (that’s around $5,000,000 in 2020 Dollars) in Federal grant money was made available for this study and awarded to the US Public Health Service.

The town of Framingham, Massachusetts, was chosen as the location for this epidemiological study of hypertension and heart disease. This one study has yielded more scientific discoveries about heart disease than any other research study in history.

In the two decades following the death of President Roosevelt, the Framingham researchers proved that many of the commonly accepted medical beliefs from the 1940s were erroneous. They showed that in patients with blood pressure over 165/95 mm Hg, there was a four-fold increase in coronary heart disease. They also showed the direct link between hypertension and stroke, as well as between hypertension and heart failure. Research from the Framingham Heart Study was also the key to establishing the link between diabetes and cardiovascular disease. Framingham researchers were also one of the earliest groups to show the cardioprotective value of high-density lipoprotein (HDL).

Researchers from the Framingham Heart Study were also among the earliest to show that obesity was an independent risk factor (from diabetes, hypertension, etc.) for cardiovascular disease. Research at the Framingham Heart Study also provided some of the earliest evidence for the link between atrial fibrillation and stroke risk.
The success of the research made it clear that there was no reason to stop at the twenty-year mark. Indeed, the study continues to this day! Today, 70 years after the Framingham Heart Study was launched, researchers are still discovering new details about hypertension and heart disease. Over 3,000 peer-reviewed scientific papers have been published based on the data gathered by the Framingham Heart Study.

Just as the Framingham researchers observed the subjects in their study long enough and carefully enough to glean new details about heart disease and hypertension, we intend to observe a large cohort of people over many years to unearth new details about biological aging. These details will then be used to guide our thinking about the development of better treatments for aging.

**Measuring biological age**

The Framingham researchers observed participants’ habits and lifestyle choices and then observed which ones were correlated with markers that they hypothesized are predictive of health outcomes, (cholesterol, blood pressure and so on), as well as which ones were correlated directly with the health outcomes themselves – including the outcome that is of the greatest interest and concern to most of us: mortality.

The outcome – or a particular-measure that is a proxy for the outcome – of a scientific study is often referred to as the endpoint of the study. This term takes on a particularly grim meaning in a study focused on aging itself: In a study of aging, the most relevant scientific endpoint is precisely the point at which life ends: death. Yet we do not want to rely solely on this objective, scientifically powerful, yet tragic measure: each death observed would end up twinning scientific utility with an ultimate sign of scientific failure, the failure to have solved aging. If our work and that of other researchers proceeds as quickly as we hope it will, there will thankfully be too few deaths within a reasonable timeframe for this ultimate endpoint to have statistical relevance.

If we want to observe lifestyle and health choices to see how they correlate with a deceleration of the aging process, yet don’t want to wait decades to be able to have a large, statistically significant body count from among those we’d love to keep alive and well, we must have scientific endpoints other than the point at which life ends. Yet we need endpoints with objectivity. This requires accurate and precise measures of biological, or functional age.

We almost always know to the day (and sometimes even the hour) when someone will die. The ideal measure of biological age would be just as precise. For example, let us say that someone who is chronologically exactly 50 years old (1) tries weekly rapamycin for 60 calendar days, then (2) we measure their biological age after the rapamycin treatment, and (3) see that the
biological age is 50 years and 49 days, even though his calendar age is now 50 years and 60 days. So imagine this measure is indeed accurate to within one day. Such a precise and accurate measure of biological age would utterly transform all clinical research into understanding aging, including of course not just observational studies, but intervention studies as well. Trials could be far shorter and have far fewer subjects. This would mean, of course, that the money and other resources needed to conduct these trials would be far more modest than that which is needed today. There would be an explosion of clinical trials for all the promising antiaging treatments that many of us have been learning about and are eager to try.

A measure of biological age that has day-length precision is of course an unrealistic goal for the foreseeable future. But any improvements in the suite of tests of biological age that research has at its disposal will accelerate the achievement of effective antiaging treatments. A significant goal of the Vitality in Aging Longitudinal Study is thus to develop better measures of biological age. These improved measures will be needed in order to solve aging as quickly as possible, before more of us perish.

"But without the objective touchstone of actual longevity achieved, how can an objective test of biological age be developed? Why would the connections drawn between biomarkers and biological age not be simply a castle in the sky – tetherless and groundless?"

The answer, in short, is that biomarkers of biological age can have objectivity by some old-school measures of functional age, along with some biostatistical wizardry.

The traditional measures of functional age include tests such as grip strength, hearing threshold, the six-minute walk test, and so on. Even reports of aches and pains can be extremely useful.

For example, we know that osteoarthritis tends to increase with age. If an intervention improves symptoms of osteoarthritis, we might be able to conclude it has slowed aging. Depending on the intervention, it may be that the effect is local, and won’t affect whole organismal aging. A conventional knee replacement, for example, is unlikely to slow aging. But when we have reason to believe an intervention has systemic effects, and when we have enough effects that we can examine – as well as enough interventions – we can begin to get a sense both of whether an intervention is having a systemic effect, as well as how strong the effect is. If we give someone a treatment that we know reduces inflammation globally, and we see improvements in cognition, improvements in autoimmunity, along with improvements in joint pain, then we might be able to conclude it is having a systemic effect on aging.

In seeking to develop new measures of biological age, we will be standing on the shoulders of a veritable army of giants. The phenomenon of inflammation provides one of many examples:

Without the development of the theory of ‘inflammaging’ – the idea that increasing systemic inflammation is part of the aging process – we would not even know to look at anti-inflammatory interventions as potential modifiers of biological age.
Our targeted enrollment drives and unique cohort
The Framingham Heart Study sought to examine a representative sample of Americans. Likewise, the Vitality in Aging Longitudinal Study seeks to enroll a diverse and representative group of people. Yet there is one way in which participants will, on average, be decidedly non-representative. Because those connected to Vitality in Aging Research Group are generally keenly interested in health and longevity, the people most likely to hear about our studies and enroll in them are deeply committed to the project of living a long, healthy life. In the Framingham cohorts, the proportion of people who exercise regularly and eat well is small, precisely because these individuals fairly accurately represent the regrettablly small proportion of those in the US who engage in healthy behaviors. The proportion of those who seek out antiaging treatments is smaller still. In our cohort, we expect to see many people trying even exotic treatments.

Moreover, because the participants in our trials believe so strongly in the goal of the research, they are highly motivated to provide us with meticulous information about their health and undergo frequent testing. In this way, we expect our data will be unusually detailed and robust.

In fact, our very first enrollment drive, at RAADfest in October 2019, serves as an example of the enthusiasm of our research participants, which of course delighted us (even overwhelmed) us.

RAADfest, as many readers of Aging Matters™ are aware, is a large event put on by the Coalition for Radical Life Extension every autumn in the Southwestern United States, (last year and this year the site is Las Vegas).

The Coalition generously offered us help in setting up our own ‘clinic’ in an area of the exhibit hall known as RAADclinic. Given the fee for joining the study (around $500), the amount of time it would take to enroll, and the desire of event attendees not to miss the exciting presentations on the main stage, we thought we might get 50–70 enrollees. We planned for 100 just to be safe. At the end of the conference, we had enrolled 260, and had to turn people away because time ran out. We were thrilled! We had another enrollment drive at People Unlimited in Arizona a month later, where we enrolled another 60 people. Even now, during the COVID-19 pandemic, we have people contacting us all the time wanting to know when an enrollment drive will be taking place near them.

Reaching for thousands of participants, or: Science in the time of COVID-19
The enthusiasm of our participants will help propel our study forward and yield meaningful results quickly. But we naturally want to make our study open to everyone, including those who, whatever their level of interest in the goals of the study may be, might simply not have time to commit to a rigorous schedule of testing.

We thus decided to create multiple levels of engagement in the study. We will of course encourage everyone to take as many of the tests as possible that we will make available: The more data we can gather, the better. We will be offering cognitive testing, various tests of strength and endurance, whole genome sequencing, DNA methylation testing, numerous blood-based biomarkers, and more. But some of these tests will be optional.

The only mandatory steps for participants in the trial – after the completion of the informed consent – are an online medical history and questionnaire, and a blood draw for the Age Management Panel, which is a
collection of blood tests available from Life Extension® that was designed especially for the Vitality in Aging studies. The Age Management Panel includes so many markers of health that, armed with these biomarkers and the health questionnaires alone, we expect to be able to draw powerful scientific conclusions about aging.

In this strange historical moment, where we find ourselves in the midst of a global crisis the likes of which has not been seen for generations, the ability to participate in our longitudinal study with minimal physical interaction with others will enable our study to move forward without undue delay. Aside from one trip to a LabCorp blood draw center, staffed by healthcare professionals who know how to keep their customers safe, participants can take part in the trial without leaving their home.

**Conclusion**

As time goes on, our longitudinal study and intervention trials will feed results into each other. This will enable each to be refined by the other. Methods of solving the plague of aging with targeted interventions we have at hand now will be refined by the results of careful observations of the outcomes of lifestyle and treatment choices, and the outcomes of targeted intervention trials will help refine the nature of the measurements observed in the longitudinal study.

Ideally the gap between gerontology and geriatrics will be closed: An understanding (logos) of the aging body (geron) can be developed that is detailed enough that the doctor who treats the aging body, the geriatrician, knows both how to prevent aging in those who are young, and reverse aging in those who are aged. That is the guiding vision of Vitality in Aging Research Group.
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Up until the late 1990’s, male impotence was a taboo subject and few medications had been developed to treat it. But with the advent of the much publicized and heavily marketed drug Viagra®, a solution – although a temporary and imperfect one – was finally available for the deeply disturbing condition that became commonly known as ‘erectile dysfunction’ (ED).

Although Viagra® is a first-line treatment for ED, it’s not a ‘miracle pill’ – it comes with a list of potential safety issues and side effects, is ineffective in complex cases, and doesn't permanently correct the underlying factors that lead to the development of the condition. It's only a short-term (i.e., two to three hours) fix. The good news is, there's a safe but potent alternative – an innovative product called Vigor-Pro™ that contains multiple ingredients which act synergistically to improve the physiological processes crucial to healthy erectile function while also exerting positive effects throughout the body.

**Vigor-Pro™: An Effective Alternative to Drugs for a Common Problem**

Research shows that the overall prevalence of ED worldwide is 16 percent, (1) but that the prevalence increases with age, affecting 40 percent of men over the age of 70. (1) In addition to aging men, those with co-existing medical conditions such as cardiovascular disease, hypertension, diabetes and depression are more likely to develop ED, as are smokers and the obese.

Because of the relatively high incidence of the condition in older men, especially those with certain diseases, safe and effective treatments are needed. As mentioned, the approval of Viagra® (generic name ‘sildenafil’ – we will use the terms interchangeably in this article) in 1998 revolutionized the treatment of male sexual dysfunction. By blocking an enzyme, phosphodiesterase type 5 (PDE5), Viagra® and similar drugs such as Cialis® and Levitra®, which entered the market in the 2000's, work by relaxing arteries, which increases penile blood flow and facilitates initiating and sustaining erections.
MEN: HOW TO ENHANCE YOUR SEX LIFE NATURALLY AND SAFELY

Figure 2: The chemical compositions of the first 3 approved ED drugs, sildenafil, tadalafil and vardenafil.

But these PDE5-inhibitors have several shortcomings: (1) they function by only one mechanism (enzyme inhibition to enhance blood flow); (2) their effects are temporary (a few hours) without permanent correction of underlying physiological issues; (3) the cost can be high without insurance (although Sildenafil-Pro™ is priced at a reasonable $14.99 for 10 x 100 mg tablets); (4) side effects can range from skin flushing to vision loss; and (5) they aren't effective in all men, especially those with co-existing diseases such as diabetes, cardiovascular and hypertension.

It's clear that safe alternatives to drugs are needed – treatments that address and correct, for the long term, the underlying medical problems contributing to ED. Vigor-Pro™ provides that safe and effective alternative; its eight ingredients improve, by different mechanisms, several aspects of sexual function, as well as provide benefits to overall health. The product contains two derivatives of mitochondrial energy co-factor L-carnitine, two powerful antioxidants, three herbs used in traditional Chinese and Ayurvedic medicine, and zinc, all of which combine for a powerful performance-enhancing effect. Let's examine below each of these ingredients individually.

**Acetyl-l-carnitine and Propionyl-l-carnitine**

L-carnitine, a naturally occurring substance synthesized in the body and consumed in the diet, is an important co-factor for the transport of long-chain fatty acids into the mitochondria to facilitate cellular energy production. Carnitine metabolism is important throughout the body and plays a role in male sexual health. Acetyl-l-carnitine (ALC) and propionyl-l-carnitine (PLC) are two analogs of L-carnitine, each with actions and benefits. PLC plays an important role in male sexual function by activating enzymes involved in the synthesis of nitric oxide from the amino acid L-arginine in endothelial cells (cells that line the interior of blood vessels). Nitric oxide is important to the signaling pathways that stimulate blood flow to facilitate erections, the same pathways targeted by Viagra® and other PDE5-inhibitors. Healthy blood flow is essential to both erectile and cardiovascular function, and nitric oxide acts as a potent vasodilator, enabling blood vessels to relax and expand to promote circulation to vital parts of the body. Its production declines with age, which hinders the ability of blood vessels to dilate in response to the body's need for increased blood flow, resulting in the development of conditions such as cardiovascular disease, diabetes, and ED. Natural compounds such as PLC have been shown to enhance nitric oxide synthesis which promotes blood vessel elasticity and blood flow.

[Note: Nitric-Pro™ is a product in powder form containing precursor L-arginine which can also be used to boost nitric oxide production.]

Research shows that serum carnitine levels are significantly decreased in men with ED who do not respond to Viagra®, (3) and in
clinical studies, carnitine analogs PLC and ALC have been shown to improve erectile function in these patients. In one study, men with diabetes-related ED who were sildenafil (Viagra®) non-responders received either PLC (2 g/day) plus sildenafil (50 mg twice a week) or sildenafil only. After one month, a significant percentage of patients in the PLC plus sildenafil group reported improved erections and a greater number of successful intercourse attempts compared with the sildenafil-only group. (4)

In a similar study on men who had undergone prostate removal surgery, one group of patients received PLC (2 g/day), ALC (2g/day), and sildenafil (100 mg as needed); a second group received sildenafil alone; and a third group received placebo. The best outcomes in restoring erectile function were obtained in the PLC, ALC, and sildenafil group. (5) Though neither study included a carnitines-only group, which would have been informative, both did show that adding ALC and PLC to a standard Viagra® regimen restored sexual potency. Another study (which did evaluate a carnitines-only group) compared the effects of testosterone, the primary male sex hormone linked to sexual health, to PLC plus ALC in treating symptoms of male aging, including ED. Patients (66 years old, on average) received one of three treatments: (1) testosterone (160 mg/day); (2) PLC (2 g/day) and ALC (2g/day); or (3) placebo for six months. By the end of the study, the combination of PLC and ALC improved erections more significantly than testosterone. (6) This is an important finding on the efficacy of ALC and PLC to treat ED, perhaps indicating that patients in the first two studies we examined could have dropped Viagra® from their regimens and still have achieved enhanced erectile function.

Vigor-Pro™ contains 1 g each of both ALC and PLC, an ample dose comparable to those used in these studies and a level shown to have therapeutic effects. It should be noted that these carnitine analogs not only act on the male reproductive system but provide general health benefits as well. ALC is a cognitive enhancer, improving memory, learning, and mood. PLC supports healthy endothelial function and blood flow, and enhances energy metabolism, cardiac function, and physical performance.

Antioxidants Alpha-lipoic acid and Superoxide dismutase

Vigor-Pro™ contains two powerful antioxidants. The first, alpha-lipoic acid (ALA), is manufactured endogenously, but also obtained from certain foods. ALA neutralizes oxygen free radicals, binds metal ions, regenerates other antioxidants in the body, and like ALC, promotes mitochondrial energy production. Recent studies have shown that ALA may also be useful in treating male reproductive disorders, such as diabetes-induced ED and infertility. (7) Acting by a similar mechanism as PLC, ALA stimulates the synthesis of nitric oxide from L-arginine. (8) One study found that the ED drug alprostadil in combination with ALA (60 mg alprostadil and 600 mg ALA, given intravenously once per day for two weeks) improved both endothelial and
erectile function in diabetes patients with ED. (9)

Another study compared ALA (600 mg daily by injection for one week, followed by 600 mg orally) to testosterone (50 mg daily transdermally) in the treatment of diabetes-related ED. Both groups reported improved erectile function by the conclusion of the 12-week study, but the ALA group also demonstrated reduced body mass index (i.e., weight loss), lowered hemoglobin A1C (i.e., improved blood sugar control), and lowered cholesterol. (10) These beneficial system-wide effects are not seen with Viagra® or any other ED drug.

The second antioxidant, superoxide dismutase (SOD), is an enzyme that reduces oxidative stress, promotes longevity, and protects against a variety of diseases. SOD is present in relatively high concentrations in the testes (11) and plays a role in male fertility. (11,12) Vigor-Pro™ contains a concentrated source of SOD known as TetraSOD®, derived from a marine phytoplankton strain grown under patent-pending technology.

**Mucuna Pruriens, Bacopa Monnieri, and He Shou Wu**

Vigor-Pro™ also contains three herbal ingredients used for centuries in traditional Chinese and Ayurvedic Indian medicine to improve male sexual performance. The first, Mucuna pruriens, also known as 'velvet bean' is an Ayurvedic medicinal plant used to treat Parkinson's and diabetes, as well as to enhance libido, fertility, and sexual function. One researcher has labeled it a "sexual invigorator," (13) a designation borne out by several animal studies that show significant effects in boosting libido and potency. Although L-DOPA (levodopa), the precursor of the neurotransmitter dopamine, is often thought to be main active ingredient responsible for its sexual enhancement properties, it appears that other constituents may play a role. For example, in one study, a particular extract of M. pruriens that was chemically analyzed and shown to be free of L-DOPA contained other components, identified as catechol and polyphenols, that up-regulated the expression of particular genes linked to nitric oxide production. When administered to male rats with diabetes-related ED, this extract improved sexual behavior and prevented penile tissue deterioration due to diabetes. (14) This protective action on erectile tissue may be due to M. pruriens’ strong antioxidant properties against diabetes-induced oxidative stress. (15) M. pruriens has also been shown to reduce or even reverse age-related penile nerve damage to improve erectile function. (16) Other research has found that M. pruriens inhibits an enzyme known as Rho-kinase 2 that causes contraction of penile smooth muscle, impeding erections. By blocking this enzyme, M. pruriens enables erectile tissue to relax, improving sexual function. (17)

Another Ayurvedic medicinal plant, Bacopa Monnieri, also known as ‘Brahmi,’ has been used as a nootropic (cognitive enhancer) to treat neurological disorders since ancient times. B. Monnieri is still widely used today to improve intelligence, memory, and learning. As far as ‘ale sexual health, B. Monnieri contains a variety of bioactive components that reduce oxidative stress and produce vasodilation via the nitric oxide pathway (18,19), similarly to other ingredients in Vigor-Pro™.

He Shou Wu (Polygonum multiflorum Thunb.) also known as ‘Fo-Ti,’ is another traditional herbal medicine, used for centuries in China. Its name translates to "black-haired Mr. He," apparently due to the rejuvenating effects on its discoverer (i.e., hair growth, hair blackening, and enhanced virility). The plant contains dozens of chemical compounds and has been used to treat a wide variety of conditions, including diabetes, cancer, heart disease, and neurodegenerative diseases.
MEN: HOW TO ENHANCE YOUR SEX LIFE NATURALLY AND SAFELY

Zinc
Zinc is an essential mineral crucial to multiple aspects of cellular metabolism and physiology, including the activity of over 100 enzymes, as well as immune function, protein synthesis, wound healing, growth and development, and male sexual function. Regular dietary intake is required. Interestingly, zinc levels influence testosterone levels in the body. Studies have shown that low serum zinc is linked with low testosterone levels, sexual dysfunction, and infertility in men, (20-23) and that oral zinc supplementation raises testosterone levels, (20,23) which leads to enhanced sexual function. (20) Supplementing with zinc is a simple and inexpensive, though underutilized method to boost testosterone levels and improve male sexual health.

How to Use Multi-ingredient Vigor-Pro™
We have just examined the effect of each of Vigor-Pro™’s eight ingredients in safely and effectively promoting male sexual function. Combined, they exert a potent effect. The usual dose is four capsules, once or twice a day with a large glass of water.

If also supplementing with Nitric-Pro™, you may wish to start with fewer capsules, evaluate the effect, and adjust as necessary. Vigor-Pro™’s ingredients act synergistically to not only enhance erectile function, but also provide benefits throughout the body, including improvements in endothelial health and cardiac function; physical and cognitive performance; mitochondrial energy production; antioxidant protection; and more. Vigor-Pro™ is a win-win alternative to drugs in boosting your sexual performance as well as your general health.

References
Erectile dysfunction is a common medical problem affecting over 150 million men worldwide.

VigorPRO™ is a natural, safe and effective supplement used to aid sexual health and libido enhancement.

120 capsules: $59.99
ON SALE $49.99

To find out more about this product head over to: www.antiaging-systems.com

DISCLAIMER: All educational information is provided under IAS terms and conditions which may change without notice. Restrictions may apply in some countries.
SPOTLIGHT

1ST LINE™ - the first line of immunity

Professor Paul Clayton reported in the Aging Matters magazine No1, 2012, that ‘the age of antibiotics is coming to an end.’ This has been a concern for some time as antibiotics becomes less effective and can’t be relied upon as they were in the past. What’s more, antibiotics do not destroy viruses, and when it comes to effective antivirals there are very few choices indeed.

OSCN

A British chemist by the name of Richard Steed was concerned how chlorine was being in food- as it is sprayed onto salads. It kept the vegetables free of bacteria, but it is hardly a healthy option for the consumers.

He investigated nature and found that oxythiocynate ions, otherwise known as OSCN are present in tears, saliva and mother’s milk and appear to destroy many pathogens including viruses, since OSCNs are literally the first line of immune defence.

Thereafter, he created the world’s first supplement containing OSCN molecules. Soon it was realised that they also had massive health implications.

An OSCN kit

An OSCN kit OSCNs have a very short half-life, something like 30 minutes, which is why you have never seen them presented in a supplement before.

But 1ST LINE™ is different because it is a kit containing the active and 3 enzymes to make up the supplement in a glass of water for consumption straight away. It is easy to use, simply add the 4 agents in the right order (marked 1-2-3-4), stir and drink. 1st Line™ has no smell or flavor.

Doing so creates 25 mg of OSCN, the equivalent to what a healthy body produces in a day.

How to use

Obviously, there are a plethora of infections out there, but on a simple level take a 1st Line™ dose at the first sign of infection and repeat the dose for a day or two afterward, as necessary. For maintenance, some individuals like to take one dose of 1st Line every month in order to keep the ‘body burdens’ low.

ACF228® - the ultimate free radical scavenger

The ACF abbreviation means ‘antioxidant complete formula’ and 228 because it was Dr. Richard Lippman’s 228th formula that proved to be very effective. Dr. Richard Lippman was nominated for the Nobel Prize in medicine for his work in measuring free radical activity in-vivo; in other words what happens within the human body. The result of that work led to the incredibly comprehensive formula known as ACF228®.

Free radicals

Free radicals are unstable molecules that can be created ‘naturally’ within the body and they
can ‘disorganise’ healthy cells by crashing around- a bit like bumper cars at a fayre. The free radical theory of aging was first proposed by Professor Denham Harman in the late 1950s and it helps to explain the degenerative processes that occur during aging.

Hierarchy
There are several levels of free radicals, and the worst of them are the superoxide and the hydroxyl free radicals. Neutralisation of ‘higher level’ free radicals can create a plethora of lower level free radicals, so it is important to try and impact every stage, but of course to particularly target the most destructive free radicals.

Potency
In the ACF228® formula there are numerous unique molecules like catalase and especially NDGA within ACF228®.

Synergy
ACF228® has numerous synergistic agents that have been designed to help neutralise every level of free radicals, no other single product has been in-vivo designed- each ACF228® capsule contains:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>N-acetylcysteine</td>
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<tr>
<td>L-methionine</td>
<td>100 mg</td>
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<tr>
<td>Di-indole-methane</td>
<td>83 mg</td>
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<tr>
<td>L-carnosine</td>
<td>83 mg</td>
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<tr>
<td>Deodorised garlic</td>
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<tr>
<td>Vitamin B6</td>
<td>17 mg</td>
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<tr>
<td>NDGA</td>
<td>3 mg</td>
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<tr>
<td>Potassium iodide</td>
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<tr>
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<tr>
<td>Vitamin B12</td>
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</tr>
<tr>
<td>Catalase</td>
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</table>

Dose
ACF228® has been designed as a one capsule per day formula.

BEC5® curaderm - a truly amazing skin cream

The story of BEC5® cream is remarkable. When it is told people often can’t believe it- and when they realise the cream has been available for decades, they become flabbergasted!

How so? Because this naturally derived skin cream has been shown to be virtually 100% effective in removing basal and squamous cell skin cancers (sic).

History
It all starts on the island of Vanuatu in the South Pacific, when a young man by the name of Bill Edward Cham (BEC) walked around the fields and noticed horses and cows rubbing themselves against a local plant called the Devil’s Apple, (a member of the eggplant family).

Asking the farmers why they did this, he learnt that the animals had skin lesions and the rubbing helped clear them up. As Dr. Cham was training to be a biochemist this fascinated him and over 20+ years his research revealed a remarkable secret.

Skin cancers
He identified that the active ingredient was
solasdines and that it ‘ate away’ a ribose coating on cancer cells that isn’t present on healthy cells. The result is that the cancer cells are exposed to the immune system as ‘non-self’ cells, then the natural process of apoptosis is induced and then the body rids itself of the cancer cells.

**Documented history**
Many journals, particularly those in Australasia have published these studies and numerous magazines around the world have divulged this. Two excellent books on this subject are; the eggplant cancer cure and Curaderm a non-invasive medication for skin cancer.

**Application**
BEC5® cream is applied topically to SCC and BCC lesions twice a day and covered with a micropore. The typical treatment time is between 6 to 12 weeks. So why hasn’t this cream, (that avoids the need for surgery in most cases) not become famous and mainstream? The answer is simple, the active agent is natural and can’t be patented and therefore the current medical system will not promote it.

**Note**
BEC5® is not suitable for melanoma cancers.

**Can-C™ eye-drops are the original formula containing n-acetylcarnosine (NAC), a natural di-peptide that has potent anti-glycating and antioxidant properties to prevent lipid peroxidation.**

**Clinicals**
Patients who placed 2-drops of Can-C™ into their eyes twice daily for a 5/6-month period reported:
- An improvement in their visual acuity (90%)
- An improvement in the clarity of their lens (88.9%)

There have been numerous reports of cataract shrinkage and even disappearance with documented evidence that Can-C™ eye-drops remain effective (and safe) more than 24-months later.

**Actuals**
The most commonly expressed initial reports are that glare is significantly improved, (for example night driving is easier) and color perception is enhanced.

Most importantly, is an ability to read eye charts clearer, due to the better transmissivity of the lens.

**Broad spectrum**
Evidence is mounting that Can-C™ is efficacious for many conditions including:
- Cataracts (particularly the senile version) for both humans and dogs
- Glaucoma
- Presbyopia
- Eye strain
- Ocular inflammation
- Blurred vision
- Vitreous opacities and lesions
- Diabetes mellitus complications
- Contact lens comfort
- Dry eye syndrome

CanC™ Eye-drops - a breakthrough for cataract
**Centro-PRO™ - improving mental recall speed**

Centro-Pro™ capsules contain centrophenoxine, (pronounced, centrow-fen-ox-in) and it is a classic ‘nootropic.’

**History**
- Centrophenoxine can increase acetylcholine levels in the brain.
- It is also very effective in reducing lipofuscin levels, this component is part of Alzheimer brain plaques.
- Accordingly, this reduction of membrane toxins like lipofuscin aids cellular communication. This is a key feature of the membrane hypothesis of aging- which has been published by Professor Nagy.
- Thus, centrophenoxine is useful for those concerned about Alzheimer’s, but in addition, centrophenoxine has been noted to help enhance and protect the performance of an healthy, aging individual.

**General cognitive benefits**
Classifying the precise benefits of the various nootropics can be tricky. Many people simply refer to their ailing cognitive facilities as “memory loss.” However, a quick breakdown of that statement requires further evaluation- in order to determine the precise nature of the problem.

In such a case, centrophenoxine is perhaps best suited to the issue of recall speed. So, If your speech appears to be full of “ums” and “ers” (whilst your brain tries to catch up with

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**Dep-PRO™ - for focus and concentration**

Dep-Pro™ contains deprenyl (also known as selegiline), it was created in the 1960s by Professor Joseph Knoll to treat Parkinson’s patients since deprenyl improves dopamine levels.

**Significant longevity studies**
Professor Knoll’s experiments with rats also produced the most incredible longevity benefits. When the animals were fed deprenyl in their food, they lived so much longer that even after the last nontreated rat died, the first of the deprenyl treated rats was yet to die! (Note: importantly, these results were verified independently in another study not undertaken by Professor Knoll).

Based on this research, Dean, Fowkes and Morgenthaler, published in the book, Smart Drugs and Nutrients, that the loss of dopamine in aging humans can be mapped against both the development of Parkinson’s and even death.
**Mode of action**
For a long time deprenyl has been described as a MAO-b inhibitor, that is to say that it prevents this enzyme from destroying dopamine, leading to its improvement. Later, Professor Knoll noted that deprenyl also raises PEA levels and catecholamine sensitivity.

**Typical responses**
Deprenyl can assist:
- The treatment of Parkinson’s and other dementias.
- Male libido enhancement.
- Boost metal energy levels especially focus and attention.
- Life expectancy, at least in animals.

**Dosing**
Parkinson’s patients use high doses, but healthy aging adults typically use 1 mg to 3 mg per day, this is dependent on age and need.

**Note**
These doses do not consider synergy with other dopamine enhancing agents and, in such cases, would have to be adjusted accordingly.

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**GHRPs - an alternative to growth hormone injections**

*Dr. Daniel Rudman’s research in the late 1980s concluded that elderly patients using Growth Hormone (GH) could reverse their biological age-markers by as much as 20-years! Specifically, he noted that they had improved the patients’ skin, hair, muscle mass, decreased fat levels and enhanced levels of stamina, strength and well-being. The issue with GH, (other than its expense), is that it does have to be injected to be effective; this is because it is a 191-chain of aminoacids so it simply can’t be absorbed via any other route. Furthermore, many countries have classified GH injections as a controlled substance, partly because of its anabolic actions.*

**GHRPs**
Thankfully, Dr. Walker’s research has shown that the use of GHRPs, (growth hormone releasing peptides) have a much safer profile whilst enjoying many of the same benefits. GHRPs can be sublingually and intranasally, and thus avoid the need for needles.
- The GHRP feedback loop means that they cannot cause the pituitary to down-regulate production of GH.
- GHRPs are not controlled substances.
- Rather than inducing a spike of GH in the blood, GHRPs augment GH naturally into the blood.

**Synergy**
The main GHRP is GHRP2 which can be used sublingually, in addition there is also intranasal Sermorelin- this is the precursor to GH, (the first 29-aminoacids). Its function is to release existing stores of GH from the pituitary, rather than encourage more production. Dr. Walker suggests that combining sermorelin with GHRP2 can elicit up to a 5x greater quantity of GH into blood.

**Summary**
GHRPs have created a genuine alternative to GH injections; they are simpler and easier to use and at the same time they have a safer profile.
Met-PRO™ - improving the insulin sensitivity

Met-PRO™ contains metformin, a diabetes type-2 treatment that has been used for many decades. Metformin differs from other insulin medications, since rather than increasing the production of insulin from the pancreas, it improves the sensitivity of the receptor site to insulin; in other words you ‘get more bang for your buck’ by improving the performance of insulin to peripheral tissues, (like muscles).

This has interesting implications for aging since the neuroendocrine theory of aging teaches us that it is the loss of sensitivity at receptors that is a major ‘fault’ in aging.

Weight loss
Persons who utilise metformin, (even those who may be pre-diabetic or otherwise not affected), have often noted that it helps them to maintain a healthy weight with lower fat levels etc.

Antiaging
Dr. Ward Dean has stated that; “metformin is one of the most promising antiaging, life-extending drugs available.”
It’s a profound statement, but it is predicated on the amazing range of metformin’s clinical effects which include:

- Lowering the blood cholesterol, triglycerides and beta lipo-proteins.
- Reducing the development of atherosclerosis.
- Reducing insulin levels.
- Increasing hypothalamo-pituitary sensitivity.
- Improving the cellular immunity.
- Enhancing the activity of anti-cancer drugs.
- Suppressing the growth of some tumors.
- Increasing the maximum life span of animals.

Miles
Metformin is a milestone, since it is the first medicine in the world to be granted an FDA approved study for antiaging titled; metformin in longevity study.

Note
Metformin does inhibit the uptake of vitamin B12, so in order to counter potential side-effects it is recommended to supplement with B12 at the same time.

MZS™ - because not all melatonins’ are created equal

Melatonin is produced at night by the pineal gland to help regulate the circadian rhythm. As we age, the amount of melatonin we produce declines and it results in many persons having a lower quality of sleep.

MZS™ has been formulated by the world’s foremost melatonin expert- Dr. Walter Pierpaoli, his MZS™ (melatonin, plus zinc and selenium),
is totally unique since it is designed to mimic the natural night peak of melatonin - leaving you refreshed and alert the following day.

**What does melatonin do?**
Melatonin is vital to protect our hormonal system, regulate immunity and repair our body’s cells. It is commonly used by shift workers and to treat jet-lag and age-related sleep disorders, but its abilities go far beyond its sleep improvement properties.

**Antioxidant effects**
Melatonin is an extremely effective antioxidant; in fact, on a molecule to molecule basis, melatonin has proved to be more efficient in neutralizing toxic hydroxyl-radicals than the two well-known free radical scavengers, glutathione and mannitol.
- Lowering the blood cholesterol, triglycerides and beta lipo-proteins.
- Reducing the development of atherosclerosis.
- Reducing insulin levels.
- Increasing hypothalamo-pituitary sensitivity.
- Improving the cellular immunity.
- Enhancing the activity of anti-cancer drugs.
- Suppressing the growth of some tumors.
- Increasing the maximum life span of animals.

**Melatonin and longevity**
Melatonin’s effect on longevity is well documented. Laboratory tests on animals have demonstrated that melatonin increased their lifespans by 20%.

**MZSTM and ARMD**
Age related macular degeneration comes in two forms, wet and dry and it is a notoriously difficult disorder to treat - linked to blindness. In a 24-month study, (NY Academy of Science, 2005, 1057:384-392) on 100 patients showed that after 3 months, the majority of patients taking 3 mg of MZSTM nightly had halted the progression of their AMRD and at 6 months many reversed their ARMD.

Remarkably this was true for both the wet and dry forms!

**Dr. Pierpaoli’s melatonin**
Dr. Pierpaoli’s MZSTM formula mimics the pineal gland’s release of melatonin when it is taken between 9-11 PM because it releases between 1-3 AM, the natural night-peak of melatonin in blood.

**Nature’s Marvels™ - how peptide bioregulators in food are gene switches**
Professor Vladimir Khavinson is the President of the European Academy of Gerontology and Geriatrics. In the 1980’s he was a Colonel in the Soviet Union military medical corps. He and his team were approached by Kremlin who wanted a way to protect their troops from various problems. The research uncovered a remarkable link between short-chain peptides and DNA. Basically, short-chain peptides - in food act as gene specific switches; they termed them ‘peptide bioregulators.’

This former military secret is now available and to-date 21 have been identified to assist various organs, glands and tissues. These peptides, unlike proteins, can enter through the stomach and a comprehensive list of patents, confirms that each of the peptide bioregulators interact with DNA - activating repair and regenerative processes.

**Original materials from the trials**
Nature’s Marvels™ are the English packaged and approved peptide bioregulators from Professor Khavinson, (all bovine sourced).
Here is the complete list:

1. Adrenal
2. Bladder
3. Blood vessels
4. Bone marrow
5. Brain (CNS)
6. Cartilage
7. Heart
8. Kidney
9. Liver
10. Lung
11. Muscle
12. Ovaries
13. Pancreas
14. Parathyroid
15. Pineal
16. Prostate
17. Retina
18. Stomach
19. Testes
20. Thymus
21. Thyroid

**Dosing**

A typical program is as follows:

- Start with an intensive course of 2-capsules once a day for 30-days.
- Thereafter, use 2-capsules once a day for 10-days, repeat every 1, 2 or 3 months.

**Oxy-Pro™ - for passion and sex**

Oxy-Pro™ contains oxytocin, a hormone produced by the hypothalamus but excreted via the pituitary gland. Its orthodox role is to help women give birth, since the large dose that’s injected helps relax the uterus and alleviates the passage of the child.

Meanwhile, Dr. Thierry Hertoghe’s book; ‘passion, sex and longevity, the oxytocin adventure’- has shown it to have many other roles.

**The love hormone**

Oxytocin has been dubbed ‘the love hormone’. This is because oxytocin can induce feelings of bonding and care. Not just between individuals, but even with animals too!

Oxytocin measurements have been taken between lovers, friends, relatives, parents and their children etc. From those results, it has been noted that oxytocin levels are higher when they are in their presence.

Mothers naturally bond with their children, but even men, (especially those who experience the live birth), express their emotions as wanting to care and protect their offspring, these effects may be attributable to the release of oxytocin, hence triggering the bond.

On the other side of the coin, psychopaths are notoriously low in their oxytocin levels, which may be a cause of their uncaring feelings towards other humans.

**The pain and orgasm connection**

Fibromyalgia can be a very debilitating disorder with a lot of pain, sometimes constant for those who suffer with it.

In women with fibromyalgia it was noted that when they were experiencing an orgasm, they felt no pain at all. Later, it transpired that women undergo a burst of oxytocin during orgasm.

Trials were undertaken to see if oxytocin supplementation could alleviate the pain of fibromyalgia, there was some success, but the sideeffect noted was that those women now enjoyed multiple orgasms! This was a fact picked up on by the popular press and is
probably singularly the action most responsible for bringing oxytocin into the public gaze.

Pira-PRO™ - the original nootropic

Nootropic is a term meaning ‘towards the mind’ and they were originally designed for senile dementias, but now they have become popular for aging individuals to enhance their mental and cognitive processes.

Ward Dean, M.D. has highlighted these facts in his ‘Smart Drug’ series of books; ever since then the term ‘smart drugs’ has become mainstream.

Piracetam, the original

Pira-Pro™ contains piracetam and piracetam was the first nootropic developed by Dr. Giurgea at UCB in the 1960s. Originally, it was used for travel and altitude sickness, but shortly afterward people realised that piracetam had positive effects on cognition.

What does piracetam do?

Piracetam is used for a wide range of conditions. For example, it has been shown to improve attention levels and memory retention. Piracetam can slow down ‘senile involution.’ In other trials, piracetam has improved memory consolidation in those suffering from ‘age-related memory impairment.’

Piracetam has aided patients recovering from strokes, in-particular improving post stroke speech impairment (aphasia).

Another use has been for acute and chronic cerebral ischaemia, (decreased blood flow to the brain). Piracetam has even increased neuronal activity in the brain when measured with EEG.

For normal individuals, piracetam can enhance idea creation and the ability to ‘see things through.’ In other words, to have ideas and then be able to bring them to fruition.

The level of clarity piracetam induces is often described as; “the fog has lifted.”

How does piracetam work?

Piracetam’s key method of action is upon the Corpus Callosum, the region of the brain that links the two hemispheres.

Many experts believe this enables piracetam users to channel greater brain potential by connecting the logical side of the brain with the creative side. This could be described as a Yin and Yang effect.

Thyroids - supporting the hypothyroid epidemic

Dr. Broda Barnes estimated that 40% of adults are deficient in thyroid hormones. As the thyroid gland is of pivotal importance, a lack of its function can affect a wide variety of age-related health disorders. Ergo, supplementation can have many positive effects.
The thyroid gland
The thyroid controls the body’s metabolism, (the rate at which it burns calories for energy) and the body’s utilization of fat; so a decline in thyroid function, can result in poor concentration, confusion, memory problems, cold hands and feet and weight gain. Other conditions triggered by an underactive thyroid are painful musculoskeletal issues that affect tendons, muscles and ligaments.

Do I need a thyroid supplement?
A doctor can check your blood levels, but a simple method is to take your body temperature when you wake in the morning. It should be in the range of 97.8 to 98.2 degrees Fahrenheit. If it is regularly lower than 97.8 F you could be hypothyroid and if regularly higher than 98.2 F then hyperthyroid.

Synthetic vs. natural thyroids
Synthetic thyroids typically only contain T3 or T4, but natural thyroids (like Armour® etc.) are of porcine origin and contain the full spectrum of T1, T2, T3 and T4 thyroid hormones.

Converting between the two
The table provides a helpful guide to the conversion rates for those wishing to switch from synthetic thyroids to natural versions. As always, we recommend consulting with a physician before making changes to your health program.

<table>
<thead>
<tr>
<th>Dose of Dessicated Thyroid (Grains)</th>
<th>Equivalents (mg)</th>
<th>Dose of T3 (Lithytonine) (mcg)</th>
<th>Dose of T4 (Levothyroxine) (mcg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>32</td>
<td>12.5</td>
<td>50</td>
</tr>
<tr>
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<td>400</td>
</tr>
<tr>
<td>5</td>
<td>325</td>
<td>125</td>
<td>500</td>
</tr>
</tbody>
</table>

Publications for antiaging, preventative and regenerative health enthusiasts

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ANTIAGING-SYSTEMS.COM

www.antiaging-systems.com is your comprehensive resource for information about all the leading commercially available antiaging, preventative and regenerative products and therapies available today.

Visit www.antiaging-systems.com and find articles, videos, audio-files, all referenced with a guide of where to obtain your needs.

Currently the site covers topics related to all the following products.

BOOKS

- Atlas of Endocrinology
- Great Teeth for Life
- Passion, Sex & Oxytocin
- Physician Hormone Handbook V2
- Cataract Cure
- Melatonin, the Key of Life
- Peptides in the Control of Ageing
- Reversing Physical Aging V1
- Eyesight Saviors
- Natural Skin Cancer Treatments
- Peptide Biomarker Revolution

DIAGNOSTICS

- Bio-Clip™ CUFF
- Foodsafe®

GHRPS

- GHRP2 (GHRP2-Pro™)
- Sermorelin (Serm-Pro™)

HORMONES

- Aldosterone (Aldo-Pro™)
- HCG (HCG-Pro™)
- MSH2 (MSH2-Pro™)
- Progesterone (Progest-Pro™)
- TRH (Abaris™)
- DHEA (DHEA-Pro™)
- Hydrocortisone (Hydrocort-Pro™)
- Oxytocin (Oxy-Pro™)
- Thymus
- Vasopressin (Vaso-Pro™)
- Estrogens (Esnatri™)
- Melatonin (MZS™)
- Pregnenolone (Preg-Pro™)
- Thyroid (Armour™ etc.)

NUTRITION

- 1st Line™ (OSCN)
- Benfotiamine (Milgamma™)
- Boluoke® (Lumbrokinase)
- Beta-Glucans (BG-Pro™)
- Boost-Pro™
- ACF-228®
- Boluoke® (Lumbrokinase)
- Can-C™ + capsules
- Carnosine (Carno-Pro™)
- DIM (DIM-Pro3™)
- L-tryptophan (Ltryp-Pro™)
- NADH
- Novisyn® (Hyaluronan)
- PQQ (PQQ-Pro™)
- Symprove®
- Vitamin D3 (D3-5000™)
- MultiV45-Pro™
- PEA (Pain-Pro™)
- TA65® capsules (100)
- TA65® capsules (250)
- GCB70-Pro™
- NAD+ (NAD+Pro™)
- Nitric-Pro™
- Sleep-Pro™
- Vitamin B12 (B12-Pro™)
PEPTIDE BIOREGULATORS

- Adrenal (Glandokort®)
- Bone Marrow (Bonomarlot®)
- Heart (Chelohart®)
- Lungs (Taxorest®)
- Pancreas (Suprefort®)
- Prostate (Libidon®)
- Testes (Testoluten®)
- Bladder (Chitomur®)
- Cartilage (Sigumir®)
- Kidney (Pielotax®)
- Muscle (Gotratix®)
- Parathyroid (Bonothyryk®)
- Retina (Visoluten®)
- Thymus (Vladonix®)
- Blood Cell (Ventfort®)
- CNS/ Brain (Cerlutent®)
- Liver (Svetinorm®)
- Ovaries (Zhenoluten®)
- Pineal (Endoluten®)
- Stomach (Stamakort®)
- Thyroid (Thyreogen®)

SMARTS

- Adrafinil (Adra-Pro™)
- Deprenyl (Dep-Pro™)
- Modafinil (Moda-Pro™)
- Hydergine® (Hy-Pro3™)
- Picamilone (Picamilon-Pro™)
- Reminyl® (Galantamine)
- Centrophenoxine (Centro-Pro™)
- Idebenone (Ideb-Pro™)
- Piracetam (Pira-Pro™)
- Vinpocetine (Vin-Pro™)

SPECIALIST (INCLUDING MEDICINES)

- 4MU (4MU-Pro™)
- Anastrozole (Arimidex®)
- BHT (BHT-Pro™)
- Doxycycline
- Finasteride (Proscar®)
- Naltrexone (Nal-Pro™)
- SAMe (SAMe-Pro™)
- Acarbose (Glucobay®)
- ATP-Pro™
- Bromocriptine (Parlodel®)
- Dutasteride (Avodart®)
- Gerovital-H3® (GH3-Pro™)
- Sildenafil (Sildenafil-Pro™)
- Aminoguanidine (Amino-Pro™)
- B17-Pro™ (amadaylin)
- DMSA (DMSA-Pro™)
- EDTA (EDTA-Pro™)
- Metformin (Met-Pro™)
- Reminyl® (galantamine)

TOPICALS

- BEC5® Curaderm cream
- Minmax-Pro™
- Can-C™ eye-drops
- NeyDent® toothpaste
- TA65® cream
- Joint-Pro™ cream
- OraltidePRO™ mouthwash
- Youth Gems®

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