

Living Healthy Beyond 120, A Centurion's Plan for Longevity

2016 Revised and Expanded Edition





Scott Rauvers, Author

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Other books published by the Institute of Solar Studies on Behavior and Human Health include:

- 1. Released August 2013 - Anti Aging Nutrition Secrets. The Fountain of Youth Seekers Guide to Longevity**
- 2. Released Late-December 2012 - How to Make and Sell Your Own Aromatherapy and Herbal Products**
- 3. Released Mid-December 2012 - How to Sell Your Homemade Products Online**
- 4. Released November 2012 - Solar Visualization Tools for Health and Prosperity**
- 5. Released May 2014. - Solar Flares and Their Effects upon Human Behavior and Health**
- 6. Revised December 2016. The Complete Guide to Natural Toothache Remedies and Re-mineralization**
- 7. Revised October 2016. - The Official Guidebook of How to Make Tinctures and Alchemy Spagyric Formulas.**
- 8. Released April 2015. - The Any Climate Survival Guidebook. Maintain Resilience in Rain, Snow or Desert**

9. **Revised November 2015 – My Book of Stem Cell Longevity Formulas and Nutraceutical AntiAging Combinations. Based on scientific research studies of foods, herbs and extracts proven to grow stem cells that extend lifespan**
10. **Foods, Herbs and Pharmaceuticals that Extend Lifespan. An in-depth research title covering more than 200 herbs and Nutraceuticals proven to extend lifespan**
11. **Released - Aug 29, 2014 - Following the Sun. Using Sunspot Cycles to Change Your Destiny and Empower Personal Growth and Other Stories**
12. **Released June 2015 - A Pod Publishing Manual. Free Marketing Strategies for Experienced Amazon Authors**
13. **Released March 2016. Wormhole Theories, Sunspot Activity and Remote Viewing Stocks**
14. **Deciphering Tablet Number XIII the Keys of Life and Death by Thoth the Atlantean**

You may preview the first 3 chapters of any of these books by visiting:

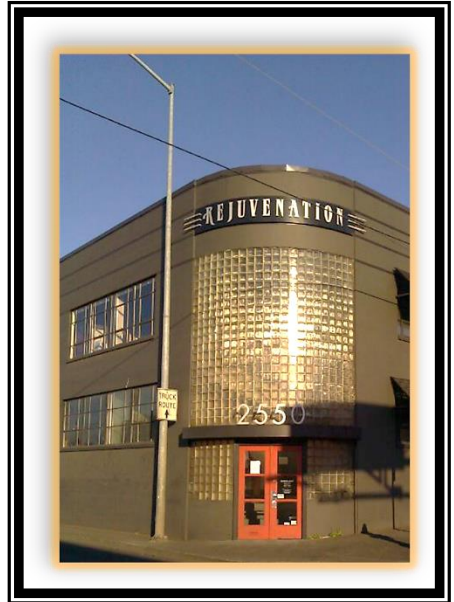
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This is a summary of just a few of the Anti-Aging Herbs and extracts discussed in this book as well as their healing abilities

- **Krill oil for enhancing cognitive functioning**
- **Vitamin D with Vitamin K to maintain calcium balance**
- **Acetyl L-Carnitine for prevention of early cognitive decline**
- **Aspirin or Willow Bark, on an alternating weekly cycle**
- **Curcumin / turmeric after heavy exercise**
- **Deprenyl / Selegiline as part of an overall longevity program**
- **Horny goat weed as part of an overall longevity program**
- **Magnesium after heavier than usual mental activity**
- **Melatonin at bedtime to enhance sleep**
- **Metformin / Berberine as part of an overall longevity program**
- **Resveratrol as part of an overall longevity program**
- **Rhodiola to increase energy and fight infection**
- **Astragalus extract/tincture, Carnosine, Ashwagandha, Milk Thistle/Silymarin for Telomerase protection/lengthening**

As well as the latest gene therapies and extracts scientifically proven to extend lifespan.

The Solar Institute, founded in Santa Monica, CA in 2012, is a leading research facility into health and aging, having published more than 4 books containing more than 1,500 pages within the last 5 years about extending lifespan. The information published consists of the latest scientific and research studies on longevity extracts, herbal formulas lifestyles and our special projects section on how Solar Weather is used to extend lifespan and enhance wellness.



When we keep ourselves healthy and learn how to heal ourselves, we are creating more courage within us. This in turn leads us to listening to and following our inner guidance, which shows us new ways of doing things or developing technologies that don't harm the planet. It is like tapping into and living in a form of universal harmony and well-being. We become courageous leaders and teachers, blazing the path towards sustainable technologies and a responsible way of looking after our health. Be part of the new generation of centurions who will live well beyond 100 years.

A section of this book is devoted to the study of Chronobiology, which examines periodic (cyclic) phenomena in living organisms and their adaptation to solar and lunar-related rhythms. This book gives examples on how to use these cycles that occur in living organisms to bring wellness and lengthen lifespan based on these solar and lunar rhythms.

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Why Eating Healthy Lengthens Lifespan

A recent report on lifespan in the United States issued by the Centers for Disease Control stated that during the year 2012, life expectancy rose in 2012 to 78.8 years – a record high. This finding showed an increase of 0.1 year from 2011 when life expectancy was 78.7 years. According to their most recent report issued in 2013, life expectancy in 2013 remained the same as in 2012. The future looks even brighter with more and more knowledge and information about extending lifespan becoming ever the more accessible. A part of this book is devoted to vegetarians or light vegetarians (*those eating only fish*). Being vegetarian or a light vegetarian greatly increases your chances of living beyond 100 years.

The 2016 Harris Interactive Poll

The 2016 Harris Interactive study commissioned by the Vegetarian Resource Group, found that five percent of the U.S. is vegetarian (*close to 16 million people*). The most interesting part of the study found that the number of vegans in the U.S. doubled since 2009, growing from 2.5 percent of the U.S. population. So as of 2016, 7.5 million Americans now follow a diet that does not include animal products. The study also discovered that 33 percent of Americans consume more vegan/vegetarian meals (*though they are not 100% vegan or vegetarian*). This means more than 100 million Americans or one third of the population consciously choose to live a plant-based lifestyle.

Being vegetarian offers the following advantages

Vegetarians are Significantly Less Likely to contract cancer

In a study published in June 1994 titled: *Risk of death from cancer and ischemic heart disease in meat and non-meat eaters*, involving a study of more than 61,000 people, and that tracked meat eaters and vegetarians for more than 12 years was conducted by M. Thorogood and colleagues. The study found the following:

- Risks of cancers of the bladder, stomach and blood was 12 per cent lower in vegetarians

- Striking differences were noted in cancers of the blood, especially leukemia, multiple myeloma and non-Hodgkin's lymphoma. Vegetarians were much less likely to have cancers in these locations of the body.
- Overall the **risk of vegetarians contracting cancer was 45 % lower** in vegetarians than in meat eaters, with vegetarians much less likely to develop cancers of the blood.

Vegetarians are significantly less likely to contract diabetes

Another study involving more than 96,000 people found the following:

- Vegetarians are at a 25% to 49% **lower risk of contracting type-2 diabetes**. (*Lap Tai Le and Joan Sabaté May 2014*). A previous study published in 2009 also confirmed this fact (*Serena Tonstad et al. May 2009*).

Vegetarians are less likely to contract Alzheimer's sooner than non-vegetarians

A study published in 1993 titled: *The incidence of dementia and intake of animal products: preliminary findings from the Adventist Health Study* by P. Glem and colleagues found that:

- Vegetarians contracted Alzheimer's at a **slower rate than meat-eaters**.

Vegetarians live longer

A study published in September 2003 titled: *Does low meat consumption increase life expectancy in humans?*, conducted by P.N. Singh and colleagues, found the following:

- A lifestyle pattern that includes a very low meat intake is associated with **greater longevity**.

Vegetarians suffer less stomach discomfort

A study published in November 2014 titled: *The Health Advantage of a Vegan Diet: Exploring the Gut Microbiota Connection*, conducted by Marian Glick-Bauer and Ming-Chin Yeh found the following:

- Vegetarians have **stronger stomachs** protecting them against negative healthy threatening inflammation and bad bacteria.

Vegetarians have healthy blood pressure

A study published in January 2012 titled: *Vegetarian diets and blood pressure among white subjects: results from the Adventist Health Study-2*, conducted by Betty J. Petersen and colleagues found that:

- Vegetarians don't suffer from higher than average **blood pressure**

Other studies have also confirmed this (R.L. Phillips et al. October 1978)

Vegetarians are less prone to heart disease

A study published in September 1999 titled: *Associations between diet and cancer, ischemic heart disease, and all-cause mortality in non-Hispanic white California Seventh-day Adventists*, conducted by G.E. Fraser showed that:

- Vegetarians on average are less likely to suffer from heart disease.

Vegetarians have lower cholesterol

A study published in January 2007 titled: *Vegetarian diet and cholesterol and triglycerides levels, conducted by S.G. De Biase* and colleagues, concluded that:

- Vegetarians have lower cholesterol

In closing, being vegetarian or living on a diet consisting of low meat intake is beneficial. However, it does have its risks. You have to know the right type of protein to take for extra energy, as well as the right types of B vitamins to help maintain healthy homocysteine levels. Vegetarians are also more at risk for bone fractures. This book is your guide designed to teach you (*or any aspiring vegetarian*) everything you need to know on how to maintain a healthy vegetarian lifestyle and live a long healthy life, possibly even beyond 120 years. Also included in this guide are the latest gene therapies for extending lifespan.

As more and more people learn to learn to take responsibility for their own health and wellbeing, we will continue to see less and less burden put on the medical community, allowing them to focus more on trauma and accident type injuries.

Where appropriate, this book includes documented scientific studies, references and citations listed in peer reviewed journals published by the United States National Institute of Health



**This book is dedicated to
Kobo Daishi - Kukai.
Founder of Shingon
Buddhism 774-835 AD and
to the faithful monks at the
temple monastery on the
Island of Oahu, Hawaii**

*Thanking them for their efforts in
making the world a better place.*



Introduction

It seems everyone wants a good vegetarian cookbook. A search yields a plethora of choices. However, how many of these books clearly discuss the link between longevity and vegetarianism? Some vegetarian diets are full of unhealthy fats and lack the necessary protein vegetarians need for extra energy and strength.

Throughout the past few decades attitudes towards vegetarians have progressed from being ridiculed and full of skepticism to one of envy. Now there exists a wealth of scientific studies confirming the link that a vegetarian diet shows reduced risks of diabetes, heart conditions, cancer and more. This change in public perception has led to the acceptance of the vegetarian lifestyle and is continuing to be seen as one of the key steps towards a longer lifespan.

The Vegetarian's Guide to Longevity via Gene Therapy and Raw Foods has been an amazing and memorable journey. It is a great honor and privilege to have met so many amazing people that led to the completion of this book. It began as a research project on longevity at the Solar Institute, a research think tank on longevity and anti aging in Santa Monica, CA. The material for this book began on the Hawaiian Island of Oahu culminating in the first edition of *Living Healthy Beyond 120, A Centurion's Plan for Longevity*. Now, 7 years later, the revised version includes scientific studies confirming the 3 way link between solar weather, a vegetarian diet and lifespan.

What we eat has vast consequences on our rivers, oceans, air and soil. By making a choice to become vegetarian, it greatly softens our ecological footprint. This is the single most powerful choice we can make to ensure such vital and beautiful resources survive for our children, and our grandchildren. As more and more people become conscious about the connection between the earth and lifestyle, the shift towards a vegetarian diet will continue to make more sense. The goal of The Vegetarian's Guide to Longevity via Gene Therapy and Raw Foods is to assist people in the task of designing for themselves not just a diet for longevity, but to make it a lifestyle. My dream is that all who choose the vegetarian lifestyle succeed brilliantly. The message put forth is meant for those seeking a longevity lifestyle via a plant based, or

near plant based diet. This book does not exclude non-vegetarians, but embraces near vegetarians, lacto-ovo vegetarians and vegans.

How is this edition different than the original?

This second edition digs deeper, and questions harder. This edition speaks with greater confidence, experience and provides much needed guidance for seekers. Issues not dealt with in the previous edition have been covered in far greater detail with references. This guide not only is seasoned with rich experiences from the past 7 years, but includes numerous scientific studies, allowing the reader to further explore the links between vegetarianism, lifespan and solar weather. The challenge of linking these 3 has all been done for the reader cumulating into this summarized, easy to reference guide.

Just a decade ago, nobody thought solar weather influenced lifespan or health, now what was speculation is mere fact. The Vegetarian's Guide to Longevity via Gene Therapy and Raw Foods was written especially for you. It is my hope that it provides you with all the information you will ever need to construct not only an exceptional diet, but a lifestyle that nourishes your mind, spirit and soul. May you confidently move forward with conviction in your journey towards a kinder, gentler and healthier world!

Scott Rauvers

Author

Why Death is Bad and Living is Good

Today a lifestyle of longevity requires a resilient way of life. Newly emerging lifespan extension formulas and the rapid pace of innovation are creating better and better formulations and extracts that extend lifespan. Anyone wanting to live past 100 must also have a will to live longer and have a healthy sense of self-worth. This is probably why we don't have a Manhattan style anti-aging project today. With the uncertainty surrounding some economies, anti-aging therapies, especially HGH therapies, can cost thousands of dollars a month. Cost affordable alternatives are your guarantee that in any economy you will know the right foods and methods to defeat aging. Let's explore the myth that we as a species should only accept a lifespan of between 70 and 120 years. The most common questions about extending lifespan organically are displayed below in Q & A format.

1. Will longer lifespans threaten Medicare, Social Security and Pensions?

Over the long term they will unless changes are made. Human lifespans have gradually been rising for most of this century. Average American lifespans have increased by 29 years since the year 1900. Since that time governments and the medical industry have adjusted to it without any major burdens.

It is a fact that today's elderly make up the vast reasons for doctor's visits. If we as a society don't find ways to treat the illness aging causes, we will have a large portion of old and frail people. The solution to this is to avoid doctor's offices filled with the elderly and instead keep them youthful, knowledgeable and productive. This makes sense to solving the aging crisis. People that live longer would also be more productive to society. Without the burden of age related illnesses, the economy and healthcare would benefit tremendously. This gives sound reason to the myth that it is immoral to suppress life extending technology, based on protecting the status quo. As a person ages, they acquire more knowledge, experience, wisdom and skills.

2: Is aging a prerequisite to life?

Some ocean species which were around before the great flood such as rockfishes, lobsters, some tortoises and some trees and plants do not appear to age. This could mean that after the great flood earth's climate and magnetic field were altered in such a way it reduced the lifespan of land animals including man.

3. Who would want to live forever?

People leading healthy fulfilling lives want more of it. Those welcoming death are victims of the gradual aging process whose lives become unbearable towards the end of their life. The goal of longevity scientists is to reverse those gradual side effects of aging. If anyone enjoys a fulfilling lifestyle, why would they ever want it to end?

4. Won't life extension increase population and tax our planet's resources?

Since the start of the Industrial Revolution, people with their own depopulation agenda have screamed doom and gloom about limited resources. In fact since their deaths, the exact opposite has occurred. Population has increased by 740% and the standard of living has soared. This is because as life expands and grows, the brainpower needed to solve overpopulation and crowding automatically solves itself.

In fact if immigration is factored out, industrialized countries are experiencing population declines. There also exist vast open regions such as Africa, Australia and Antarctica, once made uninhabitable due to climate, are now made suitable for living through new technologies and climate change. The cost of rearing a cow and slaughtering it was a huge drain on local resources. In a few years we will be able to make a hamburger at 1\10th the cost of rearing a cow, all made possible by growing beef in the lab.

As the population continues to expand, more people born with the abilities to develop better technologies for more plentiful and cheaper food, pure air and clean water, clean abundant energy and affordable housing will present their solutions to science. People with the abilities to solve these problems are the beneficial result of an ever expanding

population. As technology continues to grow, it not only extends lives, but makes it further more livable for growing populations.

When depopulationists tell people that they should die so they can *'make room'* for more people, it is like trying to drain the ocean of its minerals. The minerals in the ocean exist to support life and it is the natural purpose of nature to grow and expand. History is starting to show this line of thought is narrow minded and purely selfish thinking on behalf of some people. Some people fail to see the long term benefits of extending lifespan for the human population.

5. Some of my friends have religious beliefs that a long life is selfish and against god's divine universal plan.

It was god's plan before the flood for people to live hundreds of years. Your friends have a choice to live or die. If they chose to ignore life extension technologies, why would you let them drag you along? As life continues on and we live longer, we meet new people who become new friends, and a few of these become close friends. How many new friends could be made in several more lifetimes? People get over emotionally draining situations and discover new ones after a period of turmoil. Emotional loss and heartbreak always heal through time. As your newfound recovery proceeds, you will discover lots of interesting new people in this world who would love to know you.

6. Modern technology is the only way to extend life.

It is a fact, back in biblical times, the average lifespan was 700 years. If we can combine diet, changes to our genes that contribute to longevity and health along with the same atmospheric and mesio-magnetic conditions that existed before the great flood and generate these conditions in regions where population centers are, we will have suitable conditions to greatly extend lifespans. There is also debate that *"in-breeding"* after the great flood is what lead to a reduction in lifespan.

7. Why haven't universities or the medical establishment declared a Manhattan style project on aging?

Aging gradually sneaks up on us. Because aging is not treated as a disease, the time factor between research and results gradually ignores the real discoveries. Take carnosine for example, before resveratrol, it was the number 1 longevity supplement. When resveratrol came on the market it overlooked the power of carnosine and studies are now showing excess resveratrol causes cancer and only works best when taken with the right diet. Also there are firm studies showing that HGH can be increased in the body via Niacin and Exercise. 100 tablets of niacin cost \$7.00 as of 2016.

8. Won't extreme life extension technologies only be for the rich?

History has shown that any new technology is always expensive, especially if it has not been in the marketplace long enough to prove itself. Since the year 2000, industrialized society has been undergoing a 50% annual deflation factor or less for many new technologies. Over the years this trend has been growing. The manufacturing of new technologies is becoming automated, allowing them to be more affordable at a faster pace. Once a technology has progressed through its second stage, (*from becoming expensive and rare*) it becomes available to many more people. During this process it tends to have proven itself. By the third stage they they're almost free. The current rate of time from unaffordable to inexpensive is an average of 8 to 10 years. As the pace of technology continues to grow, the following trend is expected to emerge:

- Ten years from now, unaffordable technology will become affordable in five years
- Twenty years from now unaffordable technology will become affordable in two years or less

9. Won't people grow bored if they live a long time?

The World Bank reports that poverty in Asia has been cut in half just over the last 10 years alone. Part of this is largely due to information technologies. At the current rate of progress, it will be slashed 90% or

more during the next decade. And this is not only isolated to Asia, but the trend is also spreading worldwide.

A longer lifespan will afford us the opportunity to spend quality time with our children's great, great grandchildren. New knowledge acquired through education will allow us to go back to school to studying something we really love. Haven't you already noticed the range of topics in education has kept pace with lengthening lifespan?

Anyone with an open-ended future would never have time to be bored. Most people who are bored are lazy or want to exploit others because they fail to see life as a growing and learning experience.

10. Doesn't the bible state it is against the will of God's divine plan to alter nature?

Was it god's intention to create mankind with a mind able to enjoy the richness and fulfilling experiences of life, and then frustrate him with a short lifespan? Over the years breakthroughs in aging have given man the ability to successfully extend lifespan. Why would god have given us these tools without wanting us to use them? Wouldn't god take pleasure in seeing us choose life? Would this not than be a sin for us to suppress life-extending technologies?

If humanity decided to just follow nature's will we wouldn't have all the medical miracles we take for granted today. Laser surgery, antibiotics, organ transplants, just to name a few all came from seeking solutions to where nature wanted to follow its course of entropy (*nature follows the law of ever creating destruction*).

Just remember, it was Mother Nature who spawned polio, smallpox, leprosy, the black plague, cancer and more. For intelligent beings that want to responsibly evolve, indefinite life becomes part of the natural order of further progress.

11. Wouldn't stopping the process of aging extend the years of being frail and sickly?

Research has shown that people spend more on hospital bills during the last year of their lives compared to what they spent on hospital visits

the rest of their years combined. Nobody wants to spend years in a boring, meaningless nursing home. Anti-Aging is all about transforming seniors into a youthful state of health and well-being. Resetting the biological clock, while the chronological clock is ticking, is key to solving the aging process.

12: Shouldn't we use our resources more wisely, instead of just finding a cure for old age?

As covered earlier, as a population expands, there will always be people born along with that expansion that can solve upcoming problems. Whether it be overpopulation, more electrical energy etc.. Now just think how we could double the pace of finding solutions to mankind's problems by extending the lifespan of our seniors.

Knowledgeable human beings are the ultimate resource. Elderly people are the most knowledgeable people we will always have. If they chose to continue to remain productive, their knowledge and resources can be effectively channeled into solving numerous problems once deemed impossible. Problems such as worldwide hunger, energy shortages, overpopulation, access to good education and the diffusing of conflicts, both local and international just to name a few.

Estimates show that our earth can accommodate approximately 12 billion people (*not expected until 2100*) before becoming overburdened. People with knowledge, brains and resources can expand on existing technologies such as mile high buildings (*Frank Lloyd Wright designed one in 1956 that could have housed all of downtown Chicago*), seabed farming, mining asteroids, clean energy-saving technologies and more. Not to mention the coming technologies still to be explored such as nanotechnology and genome engineering.

13. We as a species can't even find the cure to common cancers, how do we expect to solve the riddle of aging?

The riddle of aging may not be as complex as it seems. For example there is some evidence to suggest humans could once produce their own Vitamin C, like many animals do today. Thousands of years ago the gene that produced vitamin C suddenly turned itself off and nobody knows why. It may have been due to inbreeding after the great flood. If

we can figure out a way to turn this gene back on it would be a tremendous leap forward in age reversal genetics.

As a result of technology, biological problems that once took years to solve, now take just 45 minutes or less with the aid of a computer. Today we already know how to lengthen lifespans up to twenty years in humans using low-tech lifestyle modifications. Recent giant computational and technological leaps continue to give us the tools to make reversing the process of aging a reality. These information and technology tools will continue to grow in speed with the exponential growth of the human population as a whole.

So in conclusion, delaying life is going against the flow of natural evolution and development

The 1968 bestseller "The Population Bomb", written by Mr. Paul Ehrlich, stated the imminent breakdown of the world's ability to feed itself would result in a multiple cataclysmic events. The original edition of The Population Bomb began with this statement: *"The battle to feed all of humanity is over. In the 1970's hundreds of millions of people will starve to death in spite of any crash programs embarked upon now. At this late date nothing can prevent a substantial increase in the world death rate."*

Paul Ehrlich stated at a speech at the British Institute For Biology on September 1971 ***"By the year 2000 the United Kingdom will be simply a small group of impoverished islands, inhabited by some 70 million hungry people ... If I were a gambler, I would take even money that England will not exist in the year 2000."*** It is safe to assume that Mr. Ehrlich's book "Bombed" as far as the accuracy of the information goes.

The Marshmallow Experiment

This was an experiment carried out at Stanford University. It consisted of a series of studies on delayed gratification conducted during the 1960's and early 1970's. Head psychologist Walter Mischel initiated a series of tests where children were offered a choice between one small reward that was given immediately or a larger later reward, if they waited for approximately 15 minutes. (*The reward was a marshmallow, cookie or pretzel.*) The researcher then left the room and then later returned. Years later the researchers followed up on the children in the study and discovered that children who waited longer for the rewards (*more patience*) had better life outcomes, measured by SAT scores, better educational attainment, a healthier body mass index (BMI) and other life measures. What's the moral of this study? That sometimes delaying self-gratification can lead to long term benefits.



Chapter 1 - Early Lifespan Extension Advocates

Luigi Cornaro. Early adopter of Caloric Restriction



Luigi Cornaro was born in 1467. He was one of the early public adopters of caloric restriction for longevity. He lived to 98. This is remarkable considering the average lifespan of people during the 1400's was approximately 45 years of age. Luigi's story is fascinating. As he approached 40, Cornaro was exhausted and in a

deteriorating state of poor health. After visiting a doctor, who advised him to change his diet, he began to adhere to a calorie restriction diet. He started eating as little as possible and wrote the book *La Vita Sobra*. After a few months his food intake was down to twelve ounces a day of solid food consisting of two meals. He also drank plenty of pure grape juice (*14 ounces daily*). Cornaro died in his rocking chair with perfect vision and hearing and without Alzheimer's. He stated the two rules to a long life were:

1 - Eat what agrees with your digestion

2 - Eat as little as possible

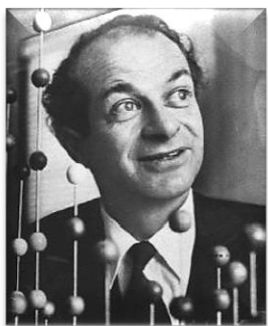
Every now and then he would consume an egg yolk and enjoyed panado (*a vegetable soup*) with a little tomato. He believed that you should "*Please the stomach and not the palate.*" He also reported that hatred, melancholy and other violent passions had great influence on the health of the body. He also stated that after reaching puberty, the amount of food the body consumes should be reduced. He proved to many men in science at the time that anyone living beyond 75 years of age was not devoid of life but could enjoy life by adhering to proper diet and having the proper state of mind.

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Linus Pauling. An early advocate of Vitamin C Mega dosing

Linus Pauling was born in Portland, Oregon in 1901 and lived to 93 years of age. He advocated high levels of vitamin C. Dr. Pauling published over 1200 papers and numerous books (*850 were scientific*). New Scientist ranked him as one of the 20 greatest scientists of all time. As



of 2000, he ranked as the 16th most important scientist in history. Dr. Pauling was also one of the founders of molecular biology and quantum chemistry. He was the founder of Pauling Therapy. He also conducted research into using a combination of Lysine and Vitamin C to effectively cure heart disease, thus eliminating surgery. There was considerable controversy about Dr. Pauling's claims that Vitamin C could cure cancer. Since that time

Vitamin C in mega doses using the Dynamic Flow model, which involves taking multiple amounts of vitamin C over a period of hours, is being looked at as a cancer cure. Also differences in taking vitamin C tablets (*ascorbic acid*), foods high in Vitamin C, and intravenous intake (IV) of Vitamin C are being studied to find the most effective delivery system for killing cancer cells with the least side effects. After taking an oral dose of Vitamin C, it remains in the body for a maximum of 2 to 3 hours, before going into decline. Excess levels can be stored in the body as reserves, and are used more often when the body is put under stress. So Dr. Pauling may have been onto something when he stated Vitamin C can help halt the spread of cancer. Further research into the properties of Vitamin C and how best to deliver it to treat cancer are underway.

Chapter 2 – Why Serotonin is a Key Player in Extending Lifespan

A study published in October 2007 titled: *An antidepressant that extends lifespan in adult Caenorhabditis elegans*, conducted by Michael Petrascheck, Xiaolan Ye and Linda B. Buck involved a study testing more than 88,000 substances for their ability to extend the lifespans of adult *Caenorhabditis elegans* nematodes. The study found that 13 substances increased lifespan by 30–60%. The substances that extended lifespan the most were antidepressants that affected intercellular signaling by serotonin, although not all antidepressants extended lifespan. A further four compounds increased lifespan by 20–33%. These were all pharmaceuticals. They were mianserin, mirtazapine, methiothepin and cyproheptadine. In humans, all four of these substances are antagonists of serotonin 2 (5-HT₂) receptors. The study concluded that lifespan extension was most likely the result of serotonin receptor SER-4, and a probable octopamine receptor SER-315. Octopamine is responsible for burning fat.

"Perceived Starvation" and Longevity

Tests involving the longevity pharmaceutical mianserin showed that it created a '*perceived*', although not real state of starvation that activated mechanisms of lifespan mimicking the effects of dietary restriction. When mianserin is consumed by humans it causes increased appetite. This suggests a strong link between sensations of appetite and lifespan. As will be shown later in this book, the technique that increases Human Growth Hormone in the body naturally 600% or more causes these same "*perceived starvation*" effects from the combination of Niacin and exercise. Simply put having adequate serotonin levels combined with foods that activate neurotransmitter receptors such as Omega 3's, Vitamin B6, Vitamin C or curcumin will extend lifespan.

The Role Serotonin Plays in the body

Serotonin can be produced in the stomach as well as the brain. When serotonin levels are altered, it affects bone mass (*M. Frost Andersen et al. 2019*). This loss of bone mass occurs most commonly through selective serotonin re-uptake inhibitors, which are commonly used in

anti-depressant medications. Studies in humans have shown higher blood serotonin levels are used as a predictor of low bone density (*Ulrike I Mödder et al. February 2010*). Because higher serotonin levels deplete calcium, it is key to include adequate calcium in the diet, as well as magnesium in the diet.

To verify that calcium is a fuel source of serotonin, there would exist a seasonal variation between calcium. This is because serotonin uses calcium as its fuel source. A study published in April of 2016 titled: *Seasonal Variation of Blood Calcium Levels in Children Aged 1–10*, and conducted by Melchun Zhang and colleagues, concluded that the seasons spring and summer were seasons that children had significantly lower calcium levels, with the lowest levels of calcium occurring during spring of each year.

A study titled: *Effect of sunlight and season on serotonin turnover in the brain*, published in December 2002 by G.W. Lambert and colleagues concluded that Serotonin levels were lowest during winter and that the rate of serotonin increased significantly according to the duration of sunlight.

Curcumin

Not only does serotonin use calcium for its fuel, it also uses amyloid- β (*John R. Cirrito et al. September 2011*). Amyloid- β is a protein necessary for brain health. It is interesting to note that curcumin is a substance that enhances amyloid- β levels in the brain. The study Amyloid-binding compounds maintain protein homeostasis during ageing and extend lifespan, published in March 2011 and conducted by Silvestre Alavez and colleagues showed that curcumin extended worm lifespan by up to 45%. Curcumin is also one of the best substances to use to reduce inflammation and for performance recovery (*J.M. Davis et al. June 2007*). Curcumin also shows strong antidepressant properties (*S.K. Kulkarni et al. December 2008*).

So in summary, spring and summer are times that sunlight is growing and causing an increase in Serotonin. This increase in sunlight puts a demand on calcium levels in our body in order for the body to produce more serotonin.

A quick review of the pharmaceuticals that extended lifespan

- Mianserin is a prescription only substance in the UK and is banned in the U.S.A. 5htp is a common mianserin alternative.
- Cyproheptadine can be purchased at a pet pharmacy and mirtazapine is available by a doctor's prescription.
- Methiothepin can be purchased from Sigma-Aldrich. A paper titled: Identification of an amino acid residue important for binding of methiothepin and sumatriptan to the human 5-HT(1B) receptor was published in 1999 by C Grånäs and D Larhammar showing experiments with Methiothepin on hamsters.

Chapter 3 – How to use Solar Weather to Extend Lifespan

People Born In the Fall Live Longer

A study conducted by Leonid A. Gavrilov, PhD, and Natalia S. Gavrilova, PhD, of the University of Chicago showed that people born in September, October or November had higher chances of living past 100. This happens to be the time of year Vitamin D levels start falling in the body.

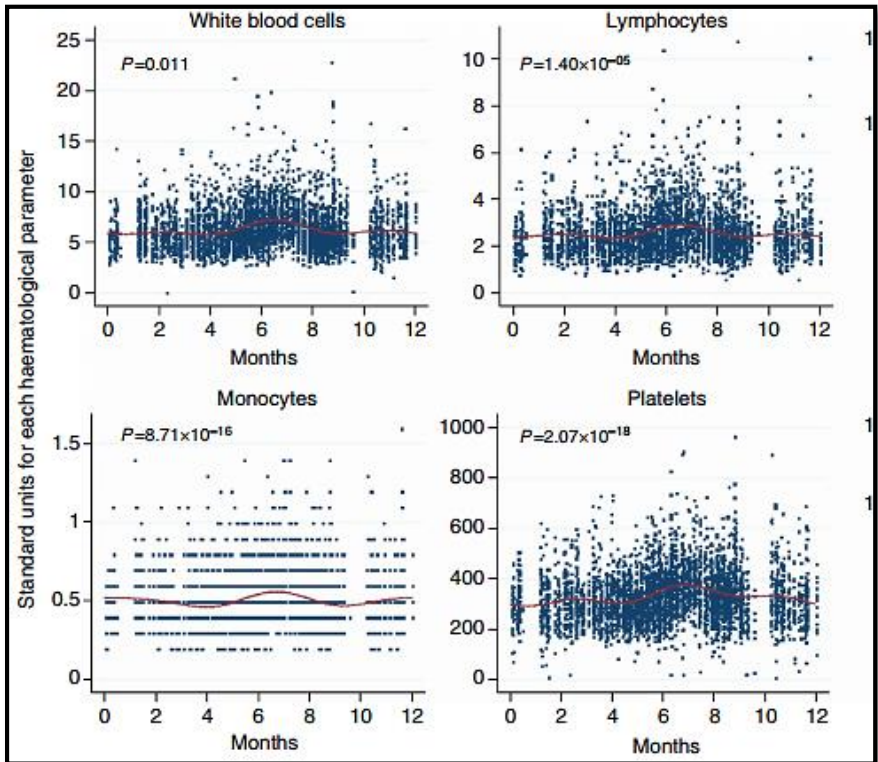
Genes and Seasonal Variation

September is 6 months from spring. September is the time of year solar activity and sunlight is declining. Our genes may be more sensitive to certain types of foods during fall. Perhaps eating smaller meals throughout the day. Eating meals consisting of one third carbohydrates, one-third protein and one-third fat would be ideal for keeping the genes in check. Because longevity is related to genes, foods that influence genes such as onions should be taken during fall and condition green periods (*quiet solar activity*). Onions also happen to be a food that is in season during fall.

A study published in September 2014 titled: *Widespread seasonal gene expression reveals annual differences in human immunity and physiology* and conducted by Xaquín Castro Dopico and colleagues, discovered the following:

A quarter of human genes (5,136 out of 22,822 genes) showed seasonal variation. Some genes were more active in the summer, and others more active in winter. The biggest changes were observed in white blood cells and adipose tissue, which affect the immune system. A six month shift exists between European and Australian patterns, due to the opposition of seasons. The variation of genetic activity also varied by latitude. People's genes in the UK showed peaks in April or October. People's genes in Gambia peaked during June and October (*the rainy season*). Gambia is noted for its high infectious disease burden, showing that white blood cells come alive to fight infection during the

rainy season. White blood cells were not the only substrate showing a seasonal peak, peaks in summer or winter were also observed in adipose tissue. Adipose tissue is composed of adipocytes, whose primary function is to store energy in the form of fat. The following image shows the genetic variation of white blood cells and adipose tissue discovered during the scientific study.



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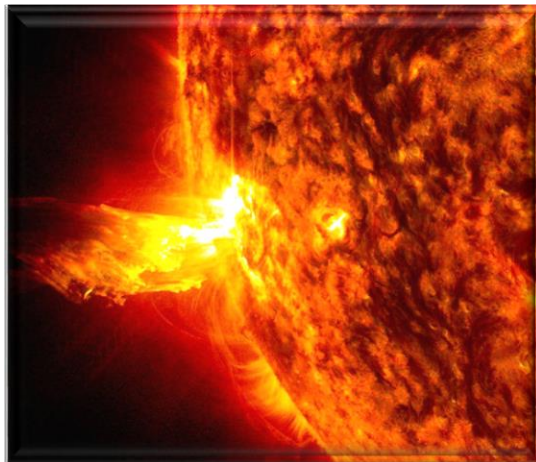
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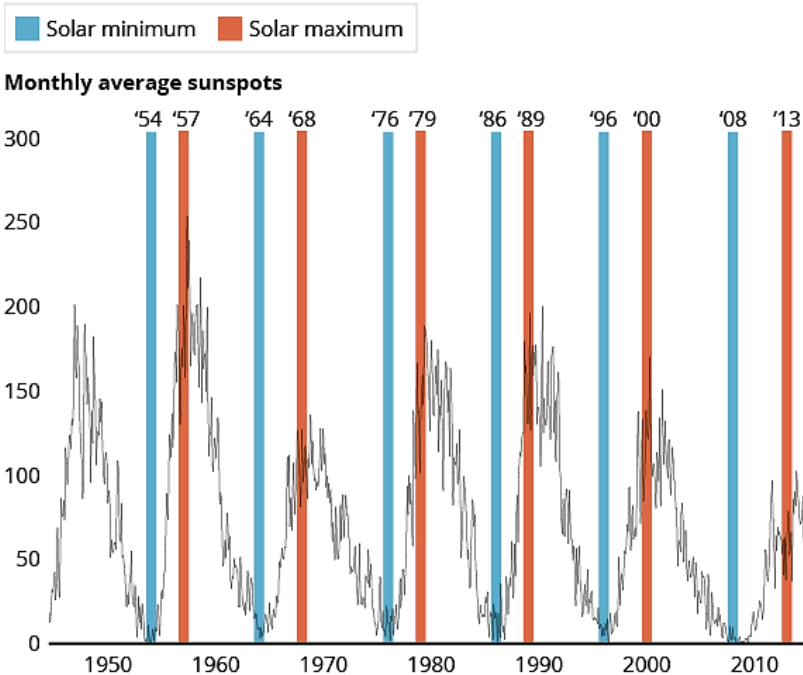
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People Born during Quiet Solar Activity Live Longer

Researchers at the Norwegian University of Science and Technology in Trondheim examined the age of death of individuals born in Norway between 1676 and 1878 and plotted the data to solar activity levels. The study concluded that individuals born during solar maximums tended to die younger. The study also showed that fertility was reduced in women during solar maximum. The graph on the following page goes into more detail.



New research suggests that people born at times of high solar activity may have shorter lifespans. Solar maximums occurred in 1957, 1968, 1979, 1989, 2000, and 2013. Solar minimums occurred in 1954, 1964, 1976, 1986, 1996 and 2008.



Why the Immune System is Strongest during Fall

In the May 2010 study quoted earlier titled: ***Influenza pandemics, solar activity cycles, and vitamin D*** conducted by D.P. Hayes, the study concluded that solar ultraviolet B (UV-B) radiation is the main source that produces vitamin D in the body. This UV-B radiation has a cycle that waxes and wanes over the Schwabe solar cycle. The study proposes that **maximum vitamin D production levels occur during solar cycle minimum.**

This maximum cycle provides prophylactic protection and a stronger immune system, thus contributing to less infection from influenza.

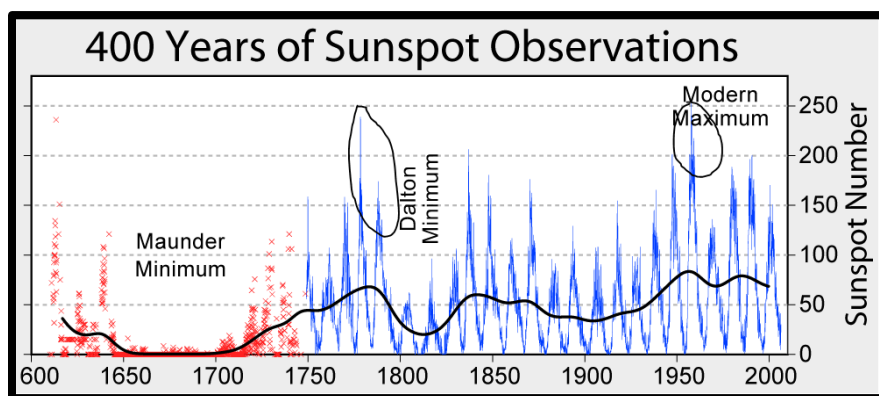
Minimum vitamin D production levels occur during solar cycle maximum and create detrimental conditions thus leading to less adequate levels of prophylactic protection and a weaker immune system. Furthermore Vitamin D and solar ionization exist as a delicate

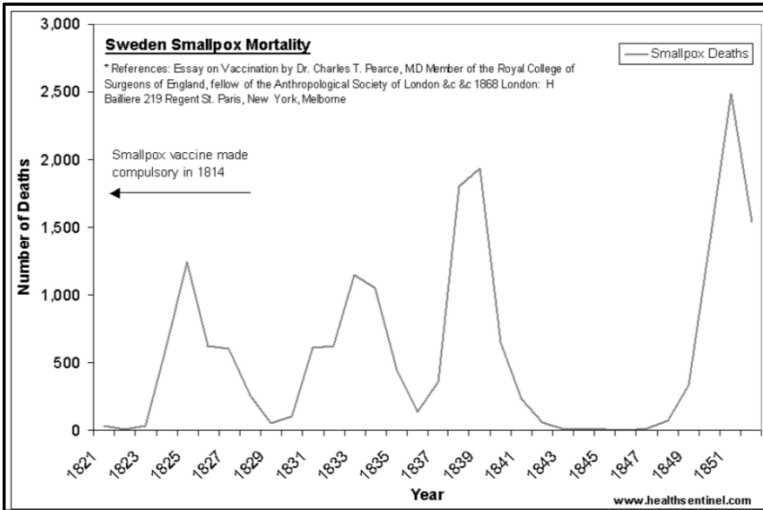
balance and even minor changes in either one trigger the rate at which the body can effectively fight infection.

So we can conclude from the following study that as solar activity declines, (*which in a yearly cycle is during fall as sunlight begins to fade*), the immune system of the body is strongest. This would also imply that cod liver oil (Vitamin D) is a seasonal food and less cod liver oil should be taken during fall.

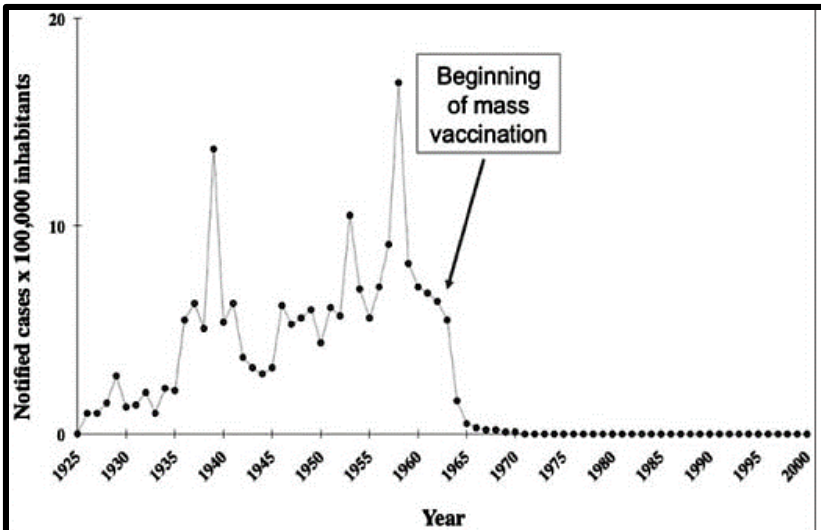
So from looking at all the data, we can see that as the sun becomes less and less brighter (*during fall there is less sunlight*) it puts less oxidative stress on our immune system. Therefore people born during fall enter a world whose genes are affected by solar radiation, thus contributing to a longer lifespan. Could a form of radiation based on the same spectrum of solar radiation be invented that can modify human genes? Further research is needed to confirm this.

Let's next examine the danger periods of solar activity. A May 2010 study titled: *Influenza pandemics, solar activity cycles, and vitamin D*, published by D.P. Hayes concluded that there exists historic evidence that influenza pandemics are correlated with solar activity cycles (*Schwabe-cycle of 11 years periodicity*). These pandemics were associated with levels of vitamin D in the body. Let's take a look at a couple of pandemics and how they peaked when sunspot activity started declining. Shown below is a graph with the last 400 years of sunspot activity.





If we take a look at Sweden Smallpox Mortality, we see that there was a peak in 1851. By looking at the previous image showing 400 years of sunspot activity, there were maximum levels of sunspot activity that began around 1840. Polio reached its worldwide peak from 1940 to mid-1955 (*History of poliomyelitis. Wikipedia*). 1950 was a period leading up to a solar maximum. Polio, as shown in the graph below also shows the same trend.

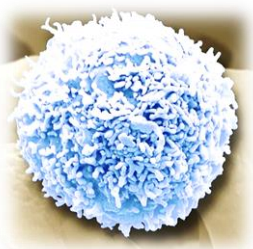


From personal research I have discovered that the period just after solar maximum, just as the sunspot numbers have peaked and are beginning to go into decline, is the key maximum period where many of the world's influenza pandemics begin.

During low sunspot periods or “maunder minimums”, it is a good time to review, prepare and observe what information and resources are currently available so we can make new tools, and find new ways of doing things for when the next upswing occurs. It is not a time of productivity or growth, but rather observation and allowing what new information, ideas and ways of doing things emerge. A time to pay attention to detail and fruition. The real danger today is becoming so over reliant on technology that if another smallpox type epidemic hits, instead of the medical “cure” being organically solved, it may be solved with the use of nanotechnology, or small miniature robots that destroy the “bug”. I personally would rather organic methods to solve such problems. Especially with all the research and technology that we have today, that shouldn't be hard.

How to Smoothly Transition the Return of Your Immune System in February/March

Researchers have asked the question *How do seasons influence the immune system?* A study using deer mice concluded that housed mice that were submitted to shorter days of light showed higher white blood cells and lymphocyte numbers ^[1] (*an enhanced immune system*). A picture of a lymphocyte is shown on the right. The mice that were exposed to longer days of light did not show as strong as an immune system. The red blood cell and differential cell counts did not differ between both groups of housed mice. The study concluded that the length of day affects the immune system. This study clearly shows how seasons affect the immune system.



Dr. William Hrushesky at the WJB Dorn Veterans Administration Medical Center in Columbia, S.C. looked at more than 900,000 Pap tests done in southern Holland during the years between 1983 and 1998. He discovered that there were more HPV cases during sunnier months. The sunnier the year and month, the higher the rate of human

papilloma virus. August happens to be the sunniest month in southern Holland, and there were twice as many cases of papilloma virus compared to winter. After September, there was a steep decline in infections [2]. Papilloma virus is a group of DNA viruses that causes warts mostly from unprotected sex.

References:

[1] *Day length affects immune cell numbers in deer mice: interactions with age, sex, and prenatal photo period. Behavioral Neuroendocrinology Group, Department of Psychology. The Johns Hopkins University, Baltimore, Maryland 21218. Joan M. C. Blom, Jonathan M. Gerber, And Randy J. Nelson.*

[2] *Season, sun, sex, and cervical cancer. W.J Hrushesky et al. August 2005*

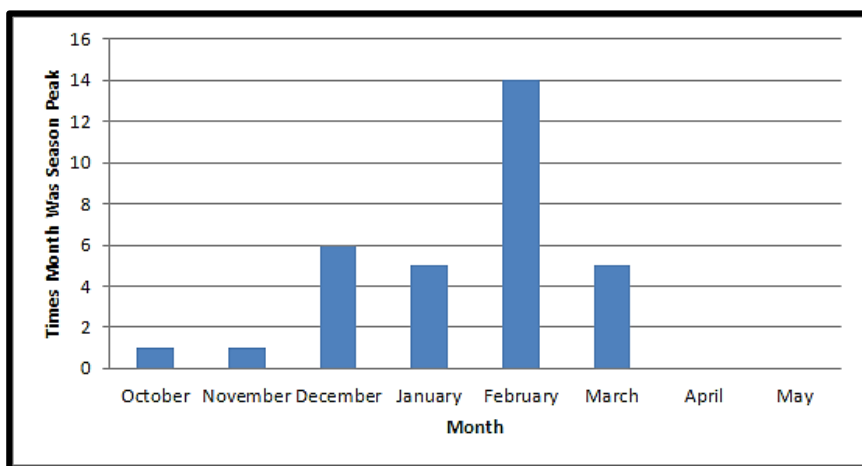
By looking at the graph below from the Deer Mice study previously mentioned, we can see that lymphocyte counts showed a significant increase during days of reduced light. Leukocytes are a type of cell found in the body’s lymphatic system. Normal ranges of lymphocytes in the body is between 1300 and 4000 cells / ml. Anything higher or lower then this means the body is usually fighting an infection.

Table 3. Blood cell counts of juvenile deer mice housed in long or short days

Blood Parameters	Long Days	Short Days
WBC, 10 ³ /μl	2.64 ± 0.25*	3.11 ± 0.24*
RBC, 10 ⁶ /μl	8.21 ± 0.15	8.04 ± 0.13
Hb, g/dl	12.67 ± 0.16	12.05 ± 0.15
Hct, %	38.41 ± 0.53	36.84 ± 0.43
MCV, fl	46.86 ± 0.38	45.86 ± 0.48
MCH, pg	15.45 ± 0.15	15.00 ± 0.15
[MCH], %	32.98 ± 0.12	32.74 ± 0.17
Platelets, 10 ³ /μl	657.13 ± 36.98	579.94 ± 21.58
Bands, 10 ³ /μl	0.00 ± 0.00	0.00 ± 0.00
Segmented neutrophils, 10 ³ /μl	0.79 ± 0.16	0.63 ± 0.04
Lymphocytes, 10 ³ /μl	1.67 ± 0.16	2.27 ± 0.20
Monocytes, 10 ³ /μl	0.09 ± 0.02	0.09 ± 0.02
Eosinophils, 10 ³ /μl	0.09 ± 0.03	0.11 ± 0.03

Randy, one of the researchers in the study, theorizes that this is because the reproductive cycle shuts down during winter, and the immune system uses this extra energy to strengthen itself. Also shorter days of

sunlight mean less solar ionization, which if in excessive amounts weakens the immune system. This is probably why “sun gazing” works so well at sunset, because sunlight is fading and the air is cooler. Fall/Autumn is the only season that temperature extremes show sharper differences between morning and afternoon. In the daytime, it can be 65 degrees, but in the night, it may drop suddenly 10 degrees or more, unlike summer where the heat can remain constant late into the evening.



One of the main changes during Fall is the wind. It becomes much drier, harsher and more penetrating especially when humidity is higher. This harsh wind then changes again around spring, increasing the moisture levels in the air significantly. If you work in a medical office, or know anyone that does, you will know the cold and flu season starts within 48 hours of Halloween, with a reprieve around Thanksgiving and starting again around Christmas and ending again a few weeks after the March equinox. This also happens to be the same time of year that people don't watch what they eat, allowing toxins to build up and gather in the fats in their system, leading to a weak immune system.

Short Term Bursts of Solar Radiation and Human Health

Even though you may be fit and healthy, if you don't know how to fight the bad bacteria, it will take you down no matter how healthy you may be. Let's take the example of fitness guru Jack LaLanne, who died January 23, 2011 of pneumonia. During his entire life he focused on

nutrition and exercise, obtaining one of the fittest bodies in our day for a man who was over 70 years of age. However, he succumbed to the “bad bacteria” called pneumonia after a heart operation he had a few days later. Let’s take a look at Solar activity and how it impacted his health during this time. Let’s take a look at the solar flare activity shown below:

2011 Daily Solar Data															
		Sunspot				Stanford		GOES15		Flares					
		Radio	SESC	Area		Solar	X-Ray	-----			-----				
		Flux	Sunspot	10E-6	New	Mean	Bkgd	X-Ray			Optical				
#	Date	10.7cm	Number	Hemis.	Regions	Field	Flux	C	M	X	S	1	2	3	
#															
1	2011 01 01	91	65	350	2	-999	B1.0	0	0	0	1	0	0	0	
2	2011 01 02	91	38	260	0	-999	A8.8	0	0	0	0	0	0	0	
3	2011 01 03	92	51	320	0	-999	A8.7	1	0	0	1	0	0	0	
4	2011 01 04	91	54	360	0	-999	B1.0	1	0	0	0	0	0	0	
5	2011 01 05	88	50	250	0	-999	A8.4	0	0	0	0	0	0	0	
6	2011 01 06	87	28	230	0	-999	A7.4	0	0	0	0	0	0	0	
7	2011 01 07	86	52	170	1	-999	A7.7	0	0	0	0	0	0	0	
8	2011 01 08	85	52	180	0	-999	A7.2	0	0	0	0	0	0	0	
9	2011 01 09	83	50	150	2	-999	A7.2	0	0	0	0	0	0	0	
10	2011 01 10	83	35	140	1	-999	A7.2	0	0	0	0	0	0	0	
11	2011 01 11	83	26	130	0	-999	A6.5	0	0	0	0	0	0	0	
12	2011 01 12	80	23	80	0	-999	A6.8	0	0	0	0	0	0	0	
13	2011 01 13	80	14	10	0	-999	A7.3	0	0	0	0	0	0	0	
14	2011 01 14	79	11	0	0	-999	A9.3	2	0	0	0	0	0	0	
15	2011 01 15	80	11	120	1	-999	B1.0	1	0	0	0	0	0	0	
16	2011 01 16	80	15	120	0	-999	A7.3	0	0	0	0	0	0	0	
17	2011 01 17	82	36	170	1	-999	A9.0	0	0	0	0	0	0	0	
18	2011 01 18	81	34	190	0	-999	A5.7	0	0	0	0	0	0	0	
19	2011 01 19	81	28	140	0	-999	A5.7	0	0	0	0	0	0	0	
20	2011 01 20	82	32	190	0	-999	A6.8	0	0	0	0	0	0	0	
21	2011 01 21	88	42	160	1	-999	B1.1	7	0	0	3	0	0	0	
22	2011 01 22	88	36	240	0	-999	B1.0	1	0	0	0	0	0	0	
23	2011 01 23	84	38	260	0	-999	A7.7	0	0	0	0	0	0	0	
24	2011 01 24	83	28	270	0	-999	A6.4	1	0	0	0	0	0	0	
25	2011 01 25	81	27	230	0	-999	A5.7	0	0	0	0	0	0	0	
26	2011 01 26	80	25	400	0	-999	A6.1	0	0	0	1	0	0	0	
27	2011 01 27	81	0	0	0	-999	A7.2	2	0	0	0	0	0	0	
28	2011 01 28	81	27	30	2	-999	A9.3	2	1	0	2	0	0	0	
29	2011 01 29	81	27	25	0	-999	A6.1	0	0	0	1	0	0	0	

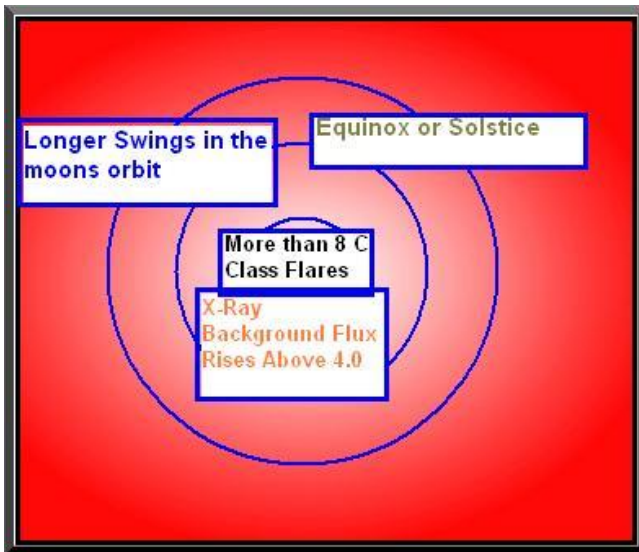
On January 21st, 2011, there were 7 “C” Class flares. If we look closely we can see that the 7 C class solar flares were the first solar flares in weeks, causing a “shock” to the immune system. So why did he die even through the X-ray background levels were below 4.0? Because Jack was 76 years old at the time. This sudden increase in solar activity caused his ability to fight his illness to be much weaker than usual. The

geomagnetic field was quiet and the solar wind speed was between 357 and 447 km/s. Also personal research from the Solar Institute has shown that perigee moons create more of a stress on the body's immune system. A perigee moon is when the moon orbits closer to earth. January 22, 2011, happened to be when the moon was about 8 weeks from a "Super Perigee" (*the moon was in full Perigee on January 22nd*). "Super Perigee" is when the moon is at its maximum closest to earth. A study published in March 2011 titled: *Effect of solar eclipse on microbes*, conducted by Amrita Shriyan showed that bacteria is affected by solar eclipses, so there is some evidence that the moon influences bacteria.

Could the combination of a perigee moon with unexpected higher levels of solar activity lead to increased deaths of pneumonia? Further research is needed to confirm this hypothesis.

I believe that the underlying trigger leading to the bad bacteria that weakens the immune system during these periods of higher solar activity is when the body is experiencing a high period of emotional or physical stress, or is ill. Because our molecular structure is so similar to that of our sun, when you are stressed, and the sun is "stressed" (*by releasing solar flares*), it increases the strength of the bad bacteria.

Speaking from personal experience, I watch the solar weather more closely than usual during Spring, being on the lookout for the "dark window" period. If solar activity is stronger than usual, then foods that help combat oxidative stress and strengthen the immune system are taken. These include: Onions, Garlic, Apples, extra Vitamin C, Glutamine, Brewer's Yeast and Cod Liver Oil. Since adhering to this regime, I have ceased getting allergies and unknown inflammation.



Triggers shown with most potent in the center

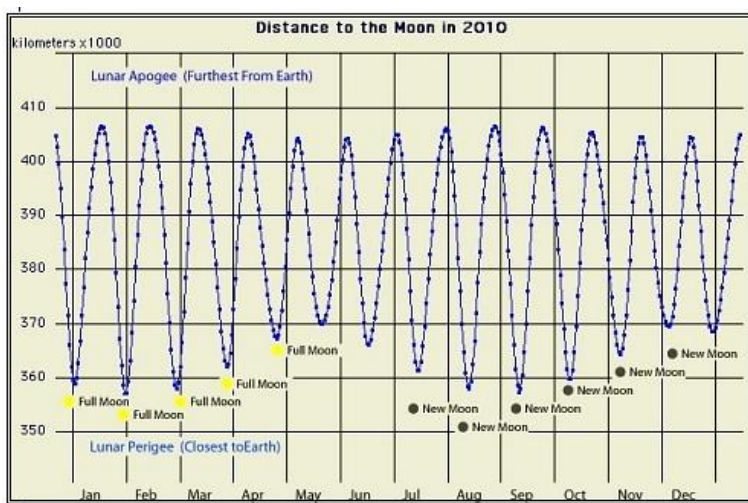
Other Aggravators: 2 or more days of rising sunspots, Solar Wind "Jumps during the above period aggravate the conditions, rising humidity levels.

The Longer Swings in the moon's orbit is during the time the moon is approaching perigee (*gradually orbiting closer to earth*).

The Perigee/Apogee cycle of the moon occurs in a "wave" type formation that gradually builds up its energy over time. At the peak of Perigee, this energy is released. These waveforms gradually move the moon closer or further from the earth, depending on the apogee or perigee cycle, in an approximately 8 month cycle.

The pictured waveforms shown in the next graph show an example of the moon gradually moving closer to earth as it approaches perigee. When it is at maximum closeness to earth, this is when the energy is strongest. When there is a full moon present at this time it is called a "*perigee super moon*", and this can trigger earthquakes and higher than average tides.

The effects are felt strongest within a 72 hour period before and after the moon's approach and the effects can last from 2 to 3 weeks before and after the perigee peak.



As we can see just after the January supermoon perigee in 2010, the moon's distance to earth started getting further and further away. And we can see in the Perigee/Apogee moon calendar below that the varying distance is also noted. I have included the next 2 years of perigee moons for further study. The symbols ++ are dates of perigee supermoons, when the moon is at its closest point to the earth.

Year: <input type="text" value="2016"/>		<input type="button" value="Calculate"/>	<input type="button" value="Previous year"/>	<input type="button" value="Next year"/>
Perigees and Apogees				
Perigee				Apogee
Jan 15	2:11	369618 km	N+5d 0h	Jan 2 11:54 404277 km N-7d13h
Feb 11	2:43	364357 km	N+2d12h	Jan 30 9:11 404552 km F+6d 7h
Mar 10	7:03	359508 km	N+1d 5h	Feb 27 3:29 405382 km F+4d 9h
Apr 7	17:37	357163 km	N+ 6h	Mar 25 14:17 406123 km F+2d 2h
May 6	4:15	357827 km	N- 15h	Apr 21 16:06 406350 km + F- 13h
Jun 3	10:56	361141 km	N-1d16h	May 18 22:07 405933 km F-2d23h
Jul 1	6:46	365982 km	N-3d 4h	Jun 15 12:01 405021 km F-4d23h
Jul 27	11:26	369658 km	N-6d 9h	Jul 13 5:25 404271 km F-6d17h
Aug 22	1:22	367046 km	F+3d15h	Aug 10 0:06 404265 km N+7d 3h
Sep 18	17:01	361893 km	F+1d21h	Sep 6 18:45 405057 km N+5d 9h
Oct 16	23:37	357859 km	F+ 19h	Oct 4 11:03 406099 km N+3d10h
Nov 14	11:24	356511 km ++	F- 2h	Oct 31 19:30 406659 km -- N+1d 1h
Dec 12	23:28	358462 km	F-1d 0h	Nov 27 20:09 406555 km - N-1d16h
				Dec 25 5:56 405869 km N-4d 0h

Year: 2017

Calculate

Previous year

Next year

Perigees and Apogees

Perigee				Apogee			
Jan 10	6:08	363241 km	F-2d 5h	Jan 22	0:15	404911 km	N-5d23h
Feb 6	14:00	368816 km	F-4d10h	Feb 18	21:15	404375 km	N-7d17h
Mar 3	7:25	369063 km	N+4d16h	Mar 18	17:26	404650 km	F+6d 2h
Mar 30	12:40	363854 km	N+2d 9h	Apr 15	10:06	405477 km	F+4d 3h
Apr 27	16:19	359323 km	N+1d 4h	May 12	19:52	406210 km +	F+1d22h
May 26	1:24	357209 km --	N+ 5h	Jun 8	22:22	406401 km +	F- 14h
Jun 23	10:50	357937 km	N- 15h	Jul 6	4:28	405932 km	F-2d23h
Jul 21	17:11	361236 km	N-1d16h	Aug 2	17:56	405024 km	F-5d 0h
Aug 18	13:16	366127 km	N-3d 5h	Aug 30	11:26	404305 km	F-6d19h
Sep 13	16:05	369855 km	N-6d13h	Sep 27	6:51	404341 km	N+7d 1h
Oct 9	5:52	366857 km	F+3d11h	Oct 25	2:26	405150 km	N+5d 7h
Nov 6	0:10	361437 km	F+1d18h	Nov 21	18:53	406131 km -	N+3d 7h
Dec 4	8:43	357495 km +	F+ 16h	Dec 19	1:28	406604 km --	N+ 18h

Year: 2018

Calculate

Previous year

Next year

Perigees and Apogees

Perigee				Apogee			
Jan 1	21:56	356565 km ++	F- 4h	Jan 15	2:11	406459 km --	N-2d 0h
Jan 30	9:55	358994 km	F-1d 3h	Feb 11	14:17	405700 km	N-4d 6h
Feb 27	14:50	363936 km	F-2d10h	Mar 11	9:15	404681 km	N-6d 3h
Mar 26	17:19	369103 km	F-4d19h	Apr 8	5:33	404144 km	F+7d16h
Apr 20	14:46	368712 km	N+4d12h	May 6	0:36	404457 km	F+5d23h
May 17	21:07	363776 km	N+2d 9h	Jun 2	16:36	405314 km	F+4d 2h
Jun 14	23:56	359506 km	N+1d 4h	Jun 30	2:44	406059 km +	F+1d21h
Jul 13	8:30	357431 km	N+ 5h	Jul 27	5:45	406222 km +	F- 14h
Aug 10	18:06	358082 km	N- 15h	Aug 23	11:25	405743 km	F-3d 0h
Sep 8	1:23	361354 km	N-1d16h	Sep 20	0:55	404874 km	F-5d 1h
Oct 5	22:31	366395 km	N-3d 5h	Oct 17	19:18	404225 km	F-6d21h
Oct 31	20:06	370200 km	N-6d19h	Nov 14	15:58	404340 km	N+6d23h
Nov 26	12:11	366622 km	F+3d 6h	Dec 12	12:27	405176 km	N+5d 5h
Dec 24	9:53	361059 km	F+1d16h				

This energy also seems to affect longevity herbs and compounds. During March and September (*equinoxes*), there seems to be a “build up” from taking longevity herbs and substances, just like toxins build up in the fatty tissues of the body. This means 1 to 2 weeks before and after the equinoxes and at perigee moons is a good time to take slightly less, anti-aging foods that are strongly concentrated, such as resveratrol. This is because excess longevity foods weaken the immune system. Another interesting fact is the immune system is influenced by the seasons.

In a 2015 study conducted by researchers from the University of Cambridge, the London School of Hygiene and Tropical Medicine in the UK the Technical University of Munich and the Technical University of Dresden in Germany researchers concluded that human genes and the immune system had seasonal variations. In the UK the white blood cells responsible for fighting viral infections were highest during October and lowest in March. White blood cells were highest during summer. Another study conducted in Germany found that 23% of 5,000 genes showed a seasonal variation in white blood cells. Some of these genes became more active during summer and other genes became more active during winter.

When reviewing all data from people in the UK/Ireland, Australia and the United States, 147 genes showed a recurring seasonal variation in both adults and children with the same pattern. Some of these genes became more active during summer and again others became more active during winter. These genes all included an encoding protein. This protein is responsible for controlling production of anti-inflammatory proteins. This particular gene was always more active during summer. Genes that promoted inflammation were more common during winter. However people living in Iceland did not show this pattern. The researchers also discovered that some genes related to fat cells showed seasonal variation.

In summary, gene expression and immune system function varies with the seasons and geographical location. This could explain why increased gene expression of inflammatory proteins that occur during the European winter are more likely to start in the winter, such as type 1 diabetes.

How to Maintain Health of the Immune System

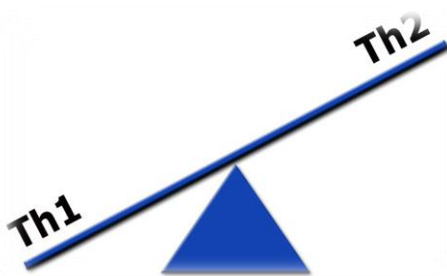
During late Fall we should ease our nervous systems down into a quieter mode, to promote optimum health through the winter. There exists a palpable sense of heaviness, the energy moving downward, back to the ground on its inward voyage during this time of year. Our stomach, where over 70% of our immune system resides (*F. Purchiaroni et al. February 2013*), is at its peak around the Fall season. This “downshift” of the immune system, coming back “online” around early to late February, causes the lungs to become more prone to congestion and may cause immune system impairments, (*due to overstimulated*

intestines). This “overbalance” can be corrected with the following methods: Start exercising the body, allowing your T-Cells to rebuild their immunity. Essential Oils for the Fall season include tea tree, eucalyptus, cajuput, sandalwood, peppermint and rosemary. Essential Oils to help cope with emotions which can be more intense around Fall and Spring include: basil, bergamot, geranium, jasmine, neroli, rose, sandalwood and ylang. You can take a bath with these to help lift spirits and clear the lungs.

The Workings of the Immune System

Quoting Mr. Mark Konlee from his paper “*How to Reverse Immune Dysfunction*” the immune system consists of two ‘arms’ – the **TH1** and the **TH2**. They tend to be connected: when one is strong, the other is weak, and vice versa. A

normal body maintains a healthy balance between both. During certain times a ‘shift’ in this balance occurs. Pregnant women for example will lean more towards the TH2 balance.



Echinacea, high in Natural Vitamin C, and also a herb known to build good bacteria in the body and increase oxygen in the bloodstream, will push the body towards the TH1 side. Some natural herbs can also upset this balance greatly. Green Tea is one. This leans the body more towards the TH2 levels, which is why excessive green tea can pose a risk for cancer, but green tea in moderation, prolongs life, and like Vitamin C, will synergize most herbs. Too much green tea will also raise EGC levels. If you have an autoimmune condition, know which side your body is leaning towards and you can try herbs that re-balance the TH levels for optimal healing. Your TH levels can be determined by a simple blood test. The Lemon / Extra Virgin Olive Oil drink has been reported to balance the two arms of the immune system. This would help in both a suppressed immune system and autoimmune conditions.

You will always find that the more “developed” the country, the higher the rate of allergies in the population. This is because the “sterile”

environment of today's over clean and super sanitized homes weaken the immune system by not allowing it to experience small amounts of exposure to negative bacteria, causing the body to become resistant to future infections. Instead, living in excessive sterile environments are counterproductive to a strong immune system, because it makes the body supersensitive to seemingly harmless substances, especially during early Spring when the body is most vulnerable to infection.

Does Excess Vitamin C Cause Kidney Stones?

There was speculation in the scientific community during the early part of the last century that Vitamin C and Vitamin B6 caused kidney stones when taken in excess. A study published by G.C. Curhan and colleagues in April 1999 titled: *Large doses of vitamin B6 may reduce the risk of kidney stone formation in women* concluded that taking large doses of vitamins B6 actually reduced the risk of kidney stones in women and that vitamin C did not cause kidney stones. Another study came to similar conclusions that high intakes of vitamin C in men did not cause kidney stones (G.C. Curhan et al. June 1996). So in conclusion 1 study shows the opposite is true, that B6 can actually dissolve kidney stones in a study done on women. In some cases magnesium is added to vitamin B6 to further dissolve kidney stones.

Surgery is not necessary for Carpal Tunnel. Exploring Vitamin B6 as the Alternative

Today experts are suggesting 90 percent of carpal tunnel syndrome cases can be cured by adding more vitamin B6 to the diet. Because this topic is so new, there are few studies, although the results look promising. For example a study published in March 1987 titled: *Carpal tunnel syndrome and vitamin B6*, conducted by M.L. Kasdan and C. Janes concluded that regulated use of vitamin B6 may help treat many cases of carpal tunnel syndrome. Foods high in Vitamin B6: Milk Thistle, Oats, Onions and Yogurt. Below are listed some of the best studies conducted since the 1980's.

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Chapter 4 - Understanding how the Sun Affects Aging

In this section you will find the terms “**Condition Blue**” or “**Condition Red**” and similar. These conditions represent the energies coming from our sun. I have had much success identifying when these energies occur and using their various levels to prevent ill health. I have decided to share these levels of varying solar activity and how they affect health it with those following our research at the solar institute.

There are now numerous scientific studies documenting how solar activity affects health. Stronger levels of solar activity affect primarily seniors, those under extreme stress and those who have been designated as “*solar weather sensitive*”. Solar weather sensitive people are more prone to the effects of solar activity during solar maximums. Here are just a few scientific studies:

- A 1977 report published In The British Journal Of Ophthalmology by Jeffrey S. Hillman and Jonathan D. C. Turner showed a distinct connection between **acute glaucoma and sunspot activity**.
- A January 7, 2015 research study titled: *Solar activity at birth predicted infant survival and women’s fertility in historical Norway*, published in the Proceedings of the Royal Society B, Norway, by Gine Roll Skjærvø, Frode Fossøy and Eivin Røskoft showed that **persons born during solar maximums (higher solar activity) had shorter lifespans**.
- A July 2010 report by W.E. Lowell and G.E. Davis GE Jr titled: *The effect of solar cycles on human lifespan in the 50 United States: variation in light affects the human genome* also came to the same conclusion that **person’s born during solar maximum lived shorter lives**.

To put it simply, stronger solar activity is detrimental to health and well-being. So now that we know this, all we have to do is locate the cycles of solar activity where solar activity is stronger than average.

Solar Cycles and Human Progress

During World War 1 Russian professor of Astronomy and Biological Physics, Alexander Leonidovich Tchijevsky, observed that particularly severe battles regularly followed each solar flare during the sunspot peak period of 1916-17. Tchijevsky found that fully 80% of the most significant events occurred during the 5 years of maximum sunspot activity. Tchijevsky divided these periods of activity into four periods:

Period 1: - (approximately 3 years, minimum sunspot activity). Peace, lack of unity among the masses, election of conservatives, autocratic, minority rule.

Period 2: - (Approximately 2 years, increasing sunspot activity). Increasing mass excitability, new leaders rise, new ideas and challenges to the elite. This manifested in 2012/2013 during the Occupy Movement.

Period 3: - (Approximately 3 years, maximum sunspot activity). Maximum excitability, election of liberals or radicals, mass demonstrations, riots, revolutions, wars and resolution of most pressing demands. This is the current period we are in as of 2012. This cycle will next occur between 2020 and 2021.



Period 4: - (Approximately 3 years, decreasing sunspot activity). Decrease in excitability, masses become apathetic, seek peace. This is the cycle we are in as of 2016. Period 4 is also a time where all information, knowledge and research comes to fruition. A time where "connecting the dots" occurs.

Reference: Tchijevsky's Disclosure: How The Solar Cycles Modulate The History © Smelyakov S.V., 2006.

We can match these 4 cycles with the seasons of the year as well as give these cycles names. Condition Red is maximum excitability. During this time those most at risk are seniors and those under physical or emotional stress.

The 3 other cycles are Green, Orange and Blue. These "condition colors" follow the same path as a standard 11 year solar cycle. A condition blue

begins the cycle, building up energy, followed by a condition red, which is a peak of the energy, which is then followed by a condition green, which is a period of harmony and peace. Using Professor L. Tchijevsky's cycles just mentioned, we get the following results: Period 1 is condition Blue, period 2 is condition red, period 3 is condition orange and period 4 is condition green. For illness or pandemic outbreaks, the period shifting from period 3 to period 4 is the most dangerous, as this is when the solar activity suddenly "drops" causing a "shock". Therefore solar maximums should coincide with pandemics or influenza outbreaks. This is similar to the phase between seasons of each year where the body's immune system becomes weaker.

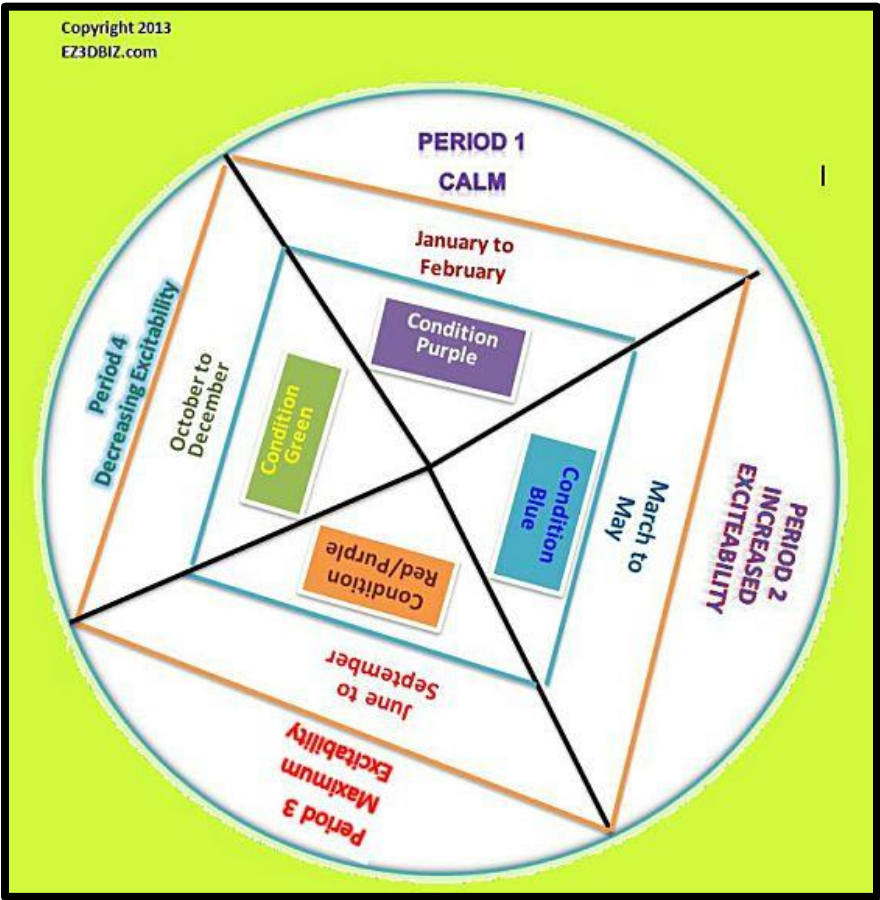
Periods of Synergism in Solar Activity

These condition color cycles have the following effects on the body. Just before the sunspots increase, a period of aches and pains can occur in the body, which is the result of oxidative stress, at the peak of the solar flare, the body's immune system will undergo a tremendous change caused by the high speed solar winds, which can result in health problems for those most at risk. A few days later, a condition green occurs, allowing the body to adjust itself to the new conditions, resulting in a return to good health and harmony. This is a period where exercise is recommended, and where oxidative stress is "relieved". Next the cycle repeats itself again.

The complete cycle of solar activity lasts approximately 11 years. During this time, effects from the condition colors become more intensified, depending upon if the sunspot cycle is headed towards solar maximum or solar minimum.

The condition color is greatly accelerated or gains strength, when it falls within one of the 4 periods of Professor L. Tchijevsky's chart. As of 2016, we are in Period 4, so when the condition color green occurs, we can expect more peace, calm, harmony and a reduced level of interest and enthusiasm. Period 4's are also excellent times to review and "*connect the dots*" and do a summary of past information received. It is a time where new ways of doing things emerge and new ideas start to sprout and take hold. Because we are in Period #4, whenever there is a condition Green, the results become greatly amplified due to the synergy of Period 4 + the Condition Green.

Each condition period becomes further “stimulated” or receives even more energy when there are between 4 and 8 C class solar flares, when 80 or 160 sunspots are present or when the S Class flares number 8 or higher. When all three of these overlap (A Period + condition color + 4 and 8 solar flares) they cause major synergy. This amplifies the condition to extreme maximum. This synergy can result in a more aggravated condition or a more positive condition. The chart below summarizes what we have just covered. There is also a condition purple mentioned, which is a period of extreme calm, which leads into a condition blue.



Scientific Studies showing Solar Activity Affecting Health

A study published in 2010 titled: *Blood Pressure, Heart Rate And Melatonin Cycles Synchronization With The Season, Earth Magnetism And Solar Flares*, conducted by G. Cornelissen and colleagues concluded that Heart Rate may be affected by solar activity.

A study titled: *Solar cycles and their relationship to human disease and adaptability*, published in May 2006 and conducted by G.E. Davis and W.E. Lowell, found that after gathering the birth dates of approximately 237,000 people from 1995 to 2004 (covering 7 solar cycles) he found the following:

- When radiation peaks during solar cycles, particularly chaotic solar cycles (**CSC cycle**) that a higher incidence of mental disorders exists.
- The outermost layer of the body's cells are affected the most by higher solar activity.
- Autoimmune diseases showed sensitivity, especially the developing immune system. It became more suppressed during peak X-ray solar activity.
- People born during chaotic solar cycles showed more genetic mental diseases such as schizophrenia and bipolar disorder.
- As the chaotic solar cycle decreased, people with diseases such as multiple sclerosis and rheumatoid arthritis became more susceptible. **This is a peak danger time for the immune system.**
- Latitude (*e.g., variation in light*) creates an added stress upon the immune system, with maximum values at 53-54 degrees N. latitude.

A study published in March 2011 titled: *Sunspot Dynamics Are Reflected in Human Physiology and Pathophysiology*, conducted by William J.M. Hrushesky and colleagues, found a firm pattern existed showing strong 10-year and weaker 5.75-year cycles that affected physiologic functions. The study concluded that solar magnetic storm periodicities affect human physiology and pathophysiology.

In a 2014 study by Laith M. Karim and Marwa H. Abbas published in the Karim & Abbas Iraqi Journal of Science, titled: *The Relation between Influenza Pandemics and Solar Activity*, concluded that significant influenza epidemics do not occur during solar minimums. The worst

influenza epidemics were shown to begin between 2 and 3 years before and after maximum solar activity within a range of 2 to 3 years. The worst flu epidemics coincided during peaks of solar activity.

A study published in march 2002 titled: *An estimate of premature cancer mortality in the U.S. due to inadequate doses of solar ultraviolet-B radiation* conducted by W.G. Grant, showed that there exists a connection between Solar UV-B levels and cancer of the colon, breast, ovary and prostate as well as non-Hodgkin lymphoma. The study found that when UV-B levels were lower, there were more premature deaths. Because Vitamin D levels come from UV-B, perhaps decreased vitamin D levels cause cancer. A study published in February 2006 titled: *The Role of Vitamin D in Cancer Prevention*, conducted by Cedric F. Garland and colleagues, found a protective relationship exists between sufficient vitamin D status and lower risk of cancer. There have also been multiple studies looking into UV-B levels and cancer and what the recommended levels for health should be.

This would then mean on a seasonal basis each year when sunlight is fading there would be an increased risk of cancers. A study titled: *Season, sun, sex, and cervical cancer* published in August of 2005 by W.J. Hrushesky and colleagues, which looked at data spanning 16 consecutive years in Southern Holland, concluded that during August of each year, there was a 2 fold increase in enereal human papillomavirus (*the bacteria responsible for cerical cancer*).

Scientific Evidence showing Solar Activity affects Human Lifespan

A study published in 2008 titled: *The light of life: evidence that the sun modulates human lifespan*, conducted by W.E. Lowell and G.E. Davis studied 320,247 Maine citizens over a 29-year period (*11 solar cycles*).

The study found the following:

- People born during solar maximums (*peaking solar activity*) lived an average of 1.5 years less compared to those born during years when solar activity did not peak.
- Males were more prone to “*solar weather sensitivity*” than females.

- When the month of birth was compared the pattern of peak to non-peak lifespan, there existed a nearly identical difference to the pattern of seasonal variation in light.

The study concluded that these effects were most likely being caused by ultraviolet light coming from our sun. This was affecting the immune system through the dermis (*the thick layer of tissue below our skin*). The study also concluded that solar events affecting genes after conception may play an important role in future diseases of adults.

Because solar radiation consists of a form of magnetic fields, could the dermal layer of our skin be impacted by mild electrical fields? A study published in July 2008 titled: *Transcriptional response of dermal fibroblasts in direct current electric fields* conducted by J. Jennings and colleagues, concluded that not only did wounds heal faster when subjected to electric fields, but genes and protein synthesis were also affected.

Additional References

Vaquero, J.M. and Gallego, M.C. 2007. Sunspot numbers can detect pandemic influenza A: the use of different sunspot numbers. *Journal of med. Hypotheses*, 68(11), pp:1189-1190.

So now that we know maximum solar activity creates more bacterial infections, we only need to watch out for when condition red (*period 2*) cycles occur. Condition Reds show maximum strength during spring. Condition greens show maximum strength during fall into winter. Condition Red is maximum excitability. During this time those most at risk are seniors and those under physical or emotional stress.

Additional References

Vaquero, J.M. and Gallego, M.C. 2007. Sunspot numbers can detect pandemic influenza A: the use of different sunspot numbers. *Journal of med. Hypotheses*, 68(11), pp:1189-1190.

How can I find a Condition Red?

Condition reds occur when 8 or more C Class solar flares appear after the sun has been quiet for a while. This results in a “*surprise shock*”. It is a time when solar activity begins increasing. A second shock occurs again with another wave of negative energy as the X-Ray background flux levels start climbing above B4.0 and higher for 3 or more consecutive days. In the following image is a condition red. X-ray background flux levels start at B2.8, then rise to 154 sunspots (B6.3).

Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center
Please send comments and suggestions to SWPC.Webmaster@noaa.gov

Quarterly Daily Solar Data

Date	Radio Flux 10.7cm	SESC Sunspot Number	Sunspot		New Regions	Stanford		X-Ray Bkgd Flux	Flares				Optical		
			Area 10E-6	Hemis.		Mean Field	Solar X-Ray		X-Ray C	X-Ray M	X-Ray X	X-Ray S	1	2	3
2015 09 24	107	86	550		0	-999	B2.8	2	0	0	0	9	0	0	0
2015 09 25	120	145	640		3	-999	B3.6	1	0	0	0	7	0	0	0
2015 09 26	120	138	720		0	-999	B4.0	3	0	0	15	0	0	0	0
2015 09 27	128	154	1010		1	-999	B6.3	13	2	0	43	4	0	0	0
2015 09 28	124	120	1050		1	-999	C1.0	13	4	0	25	4	0	0	0
2015 09 29	129	125	1170		0	-999	C1.2	8	9	0	31	4	1	0	0
2015 09 30	131	78	1090		0	-999	C1.2	8	2	0	20	3	0	0	0

Above image courtesy of NOAA

ftp://ftp.swpc.noaa.gov/pub/indices/old_indices/

Condition reds occur more often between February and April. The time the sun’s activity is just starting to increase after a quiet period during winter. The body is most vulnerable always during this time because it has not had time to adapt to the sudden rise in unexpected solar activity.

Deadly Gut Bacteria Infections Peak Each Spring

The bacteria *Clostridium difficile*, which causes severe diarrhea, was found to occur more often during Spring each year ^[1]. The majority of *Clostridium difficile* infections occur after people have been taking winter antibiotics. When spring comes, the levels of bacteria in their gut have not had a chance to adapt to the new seasonal spring conditions. This causes the good gut bacteria to become less resistant to infection.

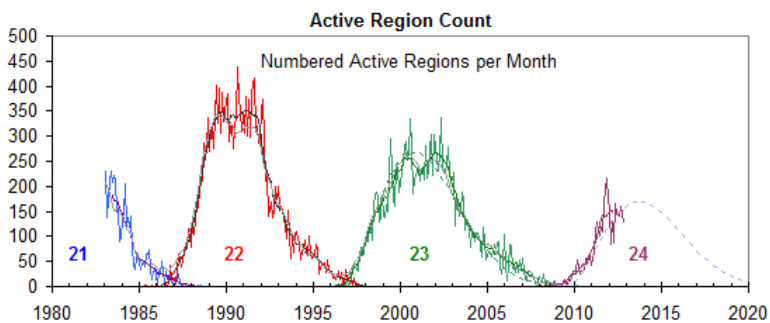
The research study also discovered that the incidents were highest in the Northeast, followed by the Midwest, the South and the West.

^[1] (*Regional and seasonal variation in Clostridium difficile infections among hospitalized patients in the United States. J.R. Argamany et al. May 2015*).

The Condition Red Periods and Its Mental and Emotional Effects

If you are aged, under physical or emotional stress, a prolonged condition red may worsen these conditions leading to Inflammation that may create a mysterious “cough” coming out of nowhere or similar

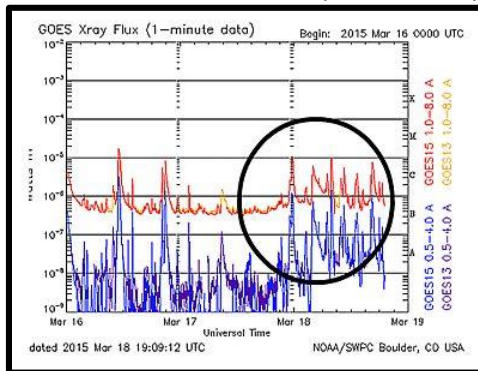
bacterial infections. A perigee moon (closer to earth) also amplifies condition reds. If you work with large numbers of people or the public on a daily basis, this can worsen the condition even more. Condition Reds reach their peak just before, during and a little after solar maximum. The chart below shows solar maximums occurring in 1991, 2002 and 2012. Condition Reds that occurred during this time had increased strength. This was a time of increased stress on the body.



What Is The Sun's Solar Flux?

Our sun emits various forms of energy. One spectrum of this energy is the sun's solar flux. Solar flux is the level of how much radiation is being emitted from our sun. Hence the more sunspots, the stronger the solar radiation. The following image shows the sun's solar flux. The circle indicates the stronger solar flux activity occurring. Real time solar flux

values can be found at: <http://www.swpc.noaa.gov/>



Condition Colors and their Emotional and Physical Effects

Condition: Red.

Solar/Geomagnetic Conditions: 3 or more X category solar flares. Sunspots rising. X-Ray background flux levels at 4.0 or higher. Solar winds at 380 or higher. Sudden rapid increase in Sunspots. If you happen to live in a rural area where there is lots of “dirt”, you will discover that during condition red periods, that the earth soil and ground becomes more “barren”, dry and “dusty” during these times.

Effects Upon the Body: Moods Stimulated. Increased Stress and Anxiety. Immune System will undergo radical shift/change. This is the only time large amounts of antioxidants should be taken, otherwise they just contribute to fatigue. The “drying up” and evaporation of moisture from vegetation may occur, turning grass and leaves brown. Complicated Electrical Devices heavily reliant on software are more prone to malfunction/fluctuation and “freezing” or taking longer than usual to “compute”. In most cases, the most recent 24 to 48 hours after the solar flare event, events may seem ‘speeded’ up, leading to acts of “trying to make up for lost time. If the X-Ray Background Flux rises above B7.0, during this time, odors and scents become amplified and stronger, and scientific breakthroughs happen more easily.

Possible Outcome: Bad bacteria contributing to increased sensitivity triggering Allergies, Asthma, Pneumonia, and other respiratory

infections. Avoid Foods high in Processed Sugar, Trans-Fats, Peanut Proteins, Wheat Products and excessive emotional and physical stress. Foods that cause allergies should be especially avoided.

For maximum protection, take the Herbal Mix #1 formula shown at the end of this book. Taking foods high in Quercetin such as Apples or Onions work extremely well during this time. Artichokes are also packed with quercetin.

Condition: Green. Period: Health and Vitality.

Solar/Geomagnetic Conditions: Solar Wind Speed at 350 and declining with rising Cosmic Rays.

Effects Upon the Body: Pituitary Gland is stimulated. Physical exercise is more beneficial. Spoken word and communication is more stronger and clearer. Chakra Balancings and other spiritual exercises are enhanced. Food becomes more “appealing”. Cravings/Appetite for Junk Foods begin, or if you are a raw foodist, appetite may increase. Photosynthesis in plants is accelerated. Plants and Vegetation retain more moisture. Overall climate becomes more temperate. Condition greens occur strongest after a major solar flare.

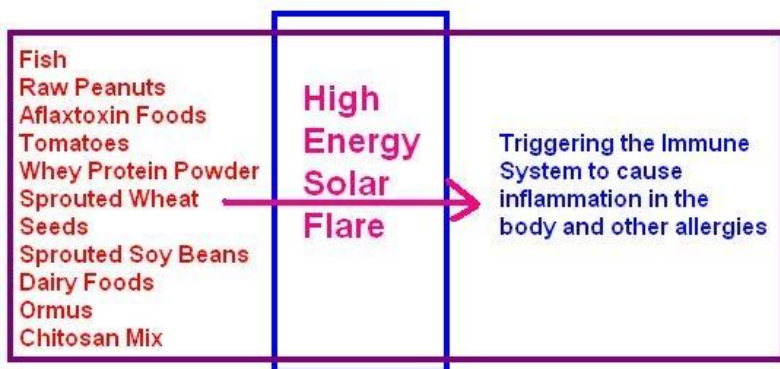
Overall Outcome: Increased Health and well-being.

Recommendations/Advice: Good for physical exercise, especially resistance exercises. A perfect time to perform Yoga or Tai Chi exercises. New overall awareness emerges. Carpal tunnel syndrome symptoms manifest themselves more at this period. This can be solved by boosting levels of Vitamin B6. Life tools you need to further your path manifest easier at this time.

Details concerning the other condition colors are covered in my book *Solar Flares and Their Effects Upon Human Behavior and Health* which you can find in your local bookstore or on Amazon.com.

Solar Flares, Allergies and the Immune System

Below are listed the most common foods that people become most allergic to. Soybeans are in the top 10.

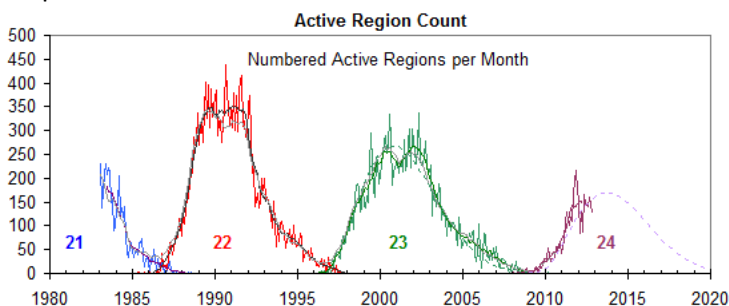


As shown above, these foods, which help renew the body, “turn” on the body’s immune system when there are 8 or more “C” class solar flares with an X-ray background flux of 4.0 and rising in people who are solar weather sensitive. But only if excessive amounts of these foods are present in the body when this higher energy occurs. The X-ray background flux at levels of 4.0 or higher can remain high for up weeks at a time, especially during summer. Usually after a few days a healthy body is able to adapt to these conditions. Higher solar wind speeds can also aggravate this problem when solar activity is stronger. A good combination to take to offset this is by taking the herbal allergy relief formula shown later in the how to make your own formulas chapter.

Do Solar Flares Speed up Evolution?

Quote from by Bob Hartzler at Iowa State University: *“The identification of glyphosate resistant horseweed is the first case of a weed developing resistance in Roundup Ready soybeans. The resistant biotype first appeared in Delaware in 2000. The first population originated in a field in which glyphosate was the only herbicide used in Roundup Ready soybeans in 1999 and 2000. This horseweed biotype has exhibited an 8 to 13 fold resistance to glyphosate.”* This quote shows that the weeds became resistant to round up during an upswing in the sunspot cycle. If we examine the chart below we can see that the year 2000 was the peak of solar activity. Solar cycle 24 lasts from 2008-2018, ending 8 years after 2010. So expect to see the next “surge” in evolution peaking between 2014 and 2018, especially if Round Up has made a new “weed resistant” formula, it too may become resistant to weeds in this cycle, having “evolved”. Perhaps this is also the same trend bacteria follows when they become resistant to antibiotics. The stress may be

accelerating evolution. While further research is necessary, it is likely that not only plants, but our bodies undergo a state of change at sunspot maximums.



Mr. William Herschel showed that a lack of sunspots affects wheat crops. In 1801 Mr. William Herschel wrote the following: *“It seems probable analyzing the period between 1650 and 1713, and judging by the normal yields of wheat, that a scarcity of vegetation occurred whenever the sun appeared to be free from spots.”* This is because wheat is one of the plants most sensitive to electromagnetic energy, which is probably why crop circles form in them often.



What Inflammation is and How to Control It

Two forms of Inflammation occur in our body. The first is good inflammation *“no pain no gain”*. The good inflammation is the pain you feel after excessive exercise that actually heals and mends the body. The second type of inflammation is the type that can cause allergies and if left untreated, eventually infection.

Controlling the bad inflammation is a 2 stage process. First you need to control it. One way to control bad inflammation is to stop taking foods that may be causing the inflammation such as Fish, Tomatoes, Peanuts, Wheat, Soy, Dairy products, Sugars and Oils high in Omega 6 fatty acids.

Also look for alternatives to prescription drugs. Foods high metals such as mercury, lead, cadmium, aluminum and arsenic should be avoided. Stress should be controlled and toxins in the body must be removed, via detoxing. Second, once inflammation is brought under control, you

need to shut down the inflammatory process. Antioxidants in massive amounts are the key to this.

A May 1994 study titled: *Nutritional antioxidants and the modulation of inflammation: theory and practice* conducted by G. Grimble found that the antioxidants Vitamin E, N-acetylcysteine and a cocktail of antioxidant nutrients reduced inflammatory symptoms in acute and chronic pancreatitis, inflammatory joint disease and adult respiratory distress syndrome. The study concludes that treatment with antioxidants may slow the progression of acquired immunodeficiency syndrome.

Additional methods for controlling inflammation include large doses of Vitamin D from Cod Liver Oil (*Between 40,000 to 70,000 units*) are recommended. One tablespoon of cod liver oil contains approximately 14,000 international units of vitamin A. Braised Liver and Cod Liver Oil are 2 of the most powerful super foods that contain high amounts of Vitamin A, DHA, B Vitamins and Arachidonic Acid. Braised liver can also help overcome fatigue and is high in carnitine and lipoic acid.

Another method to quickly relieve allergies is to take a large dose of Vitamin C and take this with 1 tablespoon of Brewer's Yeast and Cod Liver Oil. This combination has also been used to help reduce the symptoms of allergies. It is important to take the Brewer's Yeast, Vitamin A and Vitamin C together. Other synergists include: Parsley, Echinacea, Salmon Oil, Evening Primrose Oil and Kids time Cough Syrup. Once you feel better, reduce the dosage. Because everyone is different, vary the dosage according to your body's intuitive needs, which will start to vary over a 3 to 5 day period. Other antioxidants that help reduce inflammation include coriander, curcumin, quercetin, selenium, n-acetylcysteine and alpha-lipoic acid and zinc.

Another good method is to take a moderate amount of Vitamin B6 with Magnesium. Excessive doses of B6 can cause peripheral nerve damage. This is why Vitamin B6 capsules are so tiny. Dr. Hoffer of the Huxley Institute for Biosocial Research carried out similar research on patients with psychiatric problems and found that up to 75% of psychiatric patients were lacking in Vitamin B6. Pancreatic Enzymes taken with a Digestive Enzyme Complex have also been shown to be successful in treating allergies.

Notes about capsules:

The smaller the supplement capsule the more potent the nutrient, so less needs to be taken. An alternative is to take foods high in the supplement. For example, Kale contains high levels of Vitamin D3, yet the capsules are tiny.

Filling your body with foods that create an alkaline environment can help reduce inflammation as well as allergies. Some good foods for this are: Apple Cider Vinegar, Spring Water with Lemon Juice, Cottage Cheese, Wheat Grass etc.

Chapter 5 - Methods and Techniques

Scientifically Proven to Reverse Aging

What Causes Aging?

Aging and disease are a result of ignorance, an addiction to foods that promote and harbor toxins and a lack of discipline of adhering to the right diet and lifestyle. Most importantly of all, you must have a strong will to enable your body to overcome the many temptations of deviating from your diet or lifestyle, which is why healthy self-esteem is an essential part of longevity.

Diets high in excess proteins and artificially processed sugar can cause an increased risk of cancer, arthritis and stroke. We as individuals have free choice as to what foods we consume which will determine the future consequences of our health.

A simplified form of the aging process is the cells start to have a decreased ability to produce ATP from carbohydrate sources. This results in an excess accumulation of glucose in cells. This excess glucose then circulates around the cells with proteins and fats, rather than being burned as energy, resulting in cellular damage.

Another cause of aging is the reduction of the pancreas to create sodium bicarbonate, thus limiting the amount that the cells in our body absorb important nutrients. When the pancreas fails to function properly, it assists in acidification of the body, leading to disease. The pancreas in the body acts as our mouth's salivary gland. Its role is to provide digestive enzymes for our stomach so that nutrients are properly absorbed by the body.

Other factors include a lack of the proper enzymes needed to digest proteins, which in turn leads to phosphoric acid buildup, causing kidney stones, stiffening of the cells and arteries and dehydration of the cells. *(Grapefruit or an increase in Potassium and Vitamin B6 in the diet can help remove kidney stones)*. This results in a severe decline in nutrient and oxygen delivery into the cells as well as gradual inability for toxins

and wastes to be removed from the cells. The toxin accumulation in the cells of the body builds up in progressive "stages" over time, until a "peak" is reached and the body becomes very susceptible to disease.

How Can We Prevent or Reverse Aging?

I believe that this has already been accomplished and today we have people alive that will effortlessly live to greatly extended ages. This will happen without the use of robotic implants, but via organic methods. In the future, we will be able to adjust our genes so that the body naturally produces more Superoxide Dismutase and other antioxidant enzymes.

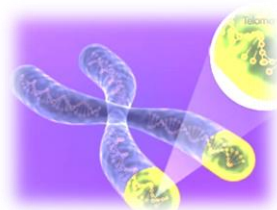
Today, to help keep the body in perfect shape is to have the right digestive enzymes and foods, the right amount of exercise, the proper mental attitude, and a purpose in life.

Enzymes and Immortality

Eukaryotic chromosomes consist of DNA-proteins that are compacted. This compact manner in which it is stored allows large amounts of DNA to be stored in cells. At each end of an eukaryotic chromosome are the telomeres.

The enzyme telomerase reduces the shortening of the eukaryotic chromosome. This acts as a rubber band, going back and forth, back and forth, gradually stretching it.

When a person ages, this yo-yo effect becomes less and less boyant leading to aging. Lobsters for example have the telomerase telomere-lengthening enzyme and a 1998 study showed that this enzyme is found in all their organs, which keep their cells looking youthful for longer (*Wolfram Klapper et al. 1998*). Some large lobsters have been found to be up to 60 years old. Lobsters "renew" themselves by moulting their shells, a process that consumes much energy. Eventually the lobster dies from exhaustion during its continued "moulting" process.



The Enzyme Telomerase and its ability to Stop Aging by Telomere Regeneration

In a study titled: *Telomerase-Based Pharmacologic Enhancement of Antiviral Function of Human CD8+ T Lymphocytes*, published in

November 2008 and conducted by Steven Russel Fauce and colleagues, the study concluded that extracts found in Astragalus root (*called cycloastragenols and astragalosides*) slowed the aging process due to its ability to activate telomerase enzyme production, allowing for telomere regeneration. **Astragalus is also sometimes called milkvetch or goat's thorn.** Astragalus is commonly combined with Garlic, Elderberry, Olive Leaf and Oregano. These compounds may show synergy.

Harvard team successfully reverses the aging process in mice

Donald DePinho and colleagues experimented on mice to see what would happen if their telomeres stopped shortening. The mice were genetically-engineered with their ability to produce telomerase. Over time, the mice showed rapid aging. Next the mice were given injections that re-activated their telomerase enzymes. After their telomerase enzyme injections, the mice started aging backwards, just as the *Turritopsis dohrnii* (*immortal jellyfish*) does. The organs of the mice repaired themselves and new neurons started forming in their brains.



Tests in Humans

This test differs from humans due to the complex physiology of the human body. Mice constantly produce telomerase throughout their short lives. In humans, this enzyme is turned off in adulthood. This acts as a safety switch because if our cells were allowed to divide and replicate continuously, they would turn into cancer. While telomerase-based anti-aging treatments are possible, excessive use of them would increase the risk of cancer by several orders of magnitude.

One company known as T.A. Sciences states it has invented a telomerase shortening prevention pill, based on the Harvard Study, in hopes of halting the aging process. It is called **TA-65** and it is an **extract from the herb Astragalus**. Extracts of astragalus in its concentrated form are thought to "*turn on*" the enzyme telomerase (hTERT) that lengthens telomeres in humans.

Will a standard Astragalus Tincture/Extract work as well as "TA-65"?

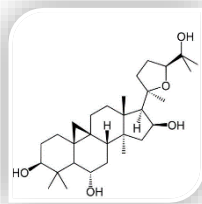
Speaking from personal experience one of my anti-aging combos known as Overnight Rejuvenescence (*which is a stem cell based longevity formula found in my book Foods, Herbs and Pharmaceuticals that Extend Lifespan*), used Astragalus powder. I then decided to remove the powder from the capsule and instead take 12 drops of Astragalus Tincture while taking the capsules. I found that taking the Astragalus extract/tincture with the Overnight Rejuvenescence formula dramatically increased the revitalization results. The complete formula and more information is discussed in my book: *Foods, Herbs and Pharmaceuticals that Extend Lifespan. A Summary Of Over 200 Research Studies Proven To Lengthen Lifespan (revised edition 2016)*. Apparently I am not the only person to have experienced this restorative effect using an extract of Astragalus extract. Extracts of Astragalus can be found in Astragalus tinctures/extracts which can easily be made at home. My book *The Official Guidebook of How to Make Tinctures and Alchemy Spagyric Formulas* goes into detail of how you can make your own tinctures/extracts. Astragalus synergizes with Ginseng and Schisandra berry.

Josh Mitteldorf

An anti-aging enthusiast named Josh Mitteldorf also has been experimenting with astragalus extract. Josh had the opportunity to take TA-65 and astragalus extract. He states that astragalus extract worked out better than TA-65. Perhaps an astragalus tincture / extract synergizes with stem cell based longevity formulas.

Astragalus Injections

A study conducted by a team of researchers at UCLA showed that injecting the telomerase gene into T-cells kept telomeres from shortening. The team used an extract from Astragalus root known as cycloastragenol to accomplish this^[1]. Cycloastragenol has been proven to prevent or slow the loss of telomeres in key immune cells. This makes it especially powerful in fighting viral disease and infection. The image at right is the molecular symbol for Cycloastragenol.



^[1] *Telomerase-Based Pharmacologic Enhancement of Antiviral Function of Human CD8+ T Lymphocytes.* Steven Russell Fauce et al. November 2008.

Company Patents Telomere Lengthening Herbal Pill

A patent filed in February of 2012 titled: *Compound and method for increasing telomere length* (Patent Number: WO 2012106692) is the result of extensive testing by the company Isagenix for natural herbal combinations that increase telomere length. The main ingredients are Milk Thistle extract, Ashwagandha and Horny Goat Weed (*Epimedium*). The exact ratios in the combination were approximately 455 mg of activating ingredients and Vitamins C, E and B12 were added for stability. The activating ingredients were made up of 50% by weight and include milk thistle seed extract, and approximately a 25% combination of horny goat weed extract, grape seed extract, turmeric root extract, ashwagandha root extract, bacopa leaf extract, DL-alpha lipoic acid, N-acetyl-L-cysteine, pomegranate fruit extract and Asian ginseng root extract.

Another 25% of the formula consists of a combination of red raspberry fruit extract, green tea leaf extract, white tea leaf extract, black tea leaf extract, berberine rhizome extract, bilberry fruit extract, blueberry fruit extract, acacia bark extract, plantain leaf extract, L-glutathione, velvet bean extract, hawthorn root extract, quercetin, boswellia fruit extract, maca root extract, hawthorn fruit extract, resveratrol, harada fruit extract, shillajit extract, and chia seed extract. The dosage is three capsules (465 mg each) in the morning and three in the evening.

Although this may seem like a lot of complex ingredients, most companies will not state the full amount of ingredients in their formula due to competition. An example is Astragalus from which the anti-aging substance TA-41 comes from. TA-41 is really an extract from Astragalus, which has been shown to act as a Telomerase activator. So we can see instead of using all the above ingredients in the listed patent an extract of Astragalus works just fine.

A study published in September 2005, conducted by H.J. Kwon and colleagues, titled: *Amelioration effects of traditional Chinese medicine on alcohol-induced fatty liver*, found that a formula consisting of Astragalus *Morus alba* (*white mulberry*), *Crataegus pinnatifida* (*hawthorne berry*),

Alisma orientale (*European water-plantain*), *Salvia miltiorrhiza* (*red sage*), *Pueraria lobata* (*Kudzu*), was extremely effective in reversing liver damage caused by alcoholism. Astragalus is often combined with Kudzu to fight of the coming cold. Astragalus is combined with Ginseng and Apricot for energy. What is most interesting is Mulberry is often combined with Astragalus. In my earlier versions of the Overnight Rejuvenessence formula I used mulberry and astragalus in the formula.

Higher stress levels have been scientifically proven to cause accelerated shortening of telomeres. (*Accelerated telomere shortening in response to life stress. Dec 2004. Elissa S. Epel. et al*). So it makes sense that herbs that reduce stress can prevent this from occurring. Let's next take a look at some of the best herbs scientifically proven to keep telomeres long.

9 Of The Best Herbal Combinations Scientifically Proven To Protect Telomeres

Many of these studies are related to fighting cancer, showing that protection of telomeres is an added side benefit of taking extracts that are used to fight cancer. Many of these studies use the term "*down regulation*". This term means that cancer cells responded in like, thus downgrading their ability to further.

Milk Thistle

This study concluded that telomerase activity was down-regulated by milk thistle (*Inhibition of telomerase activity and secretion of prostate specific antigen by silibinin in prostate cancer cells. Thelen P, Wuttke W, Jarry H, Grzmil M, Ringert RH J Urol. 2004 May; 171(5):1934-8.*).

Green Tea

This study concluded that epigallocatechin-3-gallate (EGCG) from green tea down-regulated telomerase in breast cancers, causing suppression of cell viability and induction of apoptosis. This creates a molecular basis for using EGCG as a pharmacologically safe agent against breast cancer. (*EGCG down-regulates telomerase in human breast carcinoma MCF-7 cells, leading to suppression of cell viability and induction of apoptosis. Mittal A, Pate MS, Wylie RC, Tollefsbol TO, Katiyar SK. Int J Oncol. 2004 Mar; 24(3):703-10.*).

Ginseng

This study concluded that Korean Red Ginseng extract treatment down-regulated the expression of human telomerase reverse transcriptase (*Korean red ginseng extract induces apoptosis and decreases telomerase activity in human leukemia cells. S.E. Park et al. Jan 2009*).

Resveratrol

This study concluded that Resveratrol showed telomerase activity during an analysis of its cancer fighting potential (*Resveratrol down-regulates the growth and telomerase activity of breast cancer cells in vitro. Lanzilli G, Fuggetta MP, Tricarico M, Cottarelli A, Serafino A, Falchetti R, Ravagnan G, Turriziani M, Adamo R, Franzese O, Bonmassar E. Int J Oncol. 2006 Mar; 28(3):641-8.*).

Genistein from soybeans

This study showed that genistein induced growth arrest in association with telomerase inhibition (*Genistein induces growth arrest and suppresses telomerase activity in brain tumor cells. Khaw AK, Yong JW, Kalthur G, Hande MP. October 2012*).

Mistletoe

Mistletoe in this study showed an additive inhibitory effect of telomerase activity (*Mistletoe lectin induces apoptosis and telomerase inhibition. S.H. et al. Jan 2004*).

Ginger

This study showed that a ginger extract / tincture inhibited expression of two molecular targets of cancer (*Ginger extract inhibits human telomerase reverse transcriptase and c-Myc expression in A549 lung cancer cells. W. Tuntiwechapikul et al. Dec 2010*).

Curcumin

One of the studies of Curcumin showed that Telomerase activity in MCF-7 cells showed a 6.9-fold higher increase compared to human mammary epithelial cells (*Mukherjee Nee Chakraborty S., Ghosh U., Bhattacharyya N.P., Bhattacharya R.K., Dey S., Roy M. Curcumin-induced apoptosis in*

human leukemia cell HL-60 is associated with inhibition of telomerase activity. *Mol. Cell. Biochem.* 2007;297:31–39).

Additional References

Singh M., Singh N. Molecular mechanism of curcumin induced cytotoxicity in human cervical carcinoma cells. *Mol. Cell. Biochem.* 2009;325:107–119.

Cui S.X., Qu X.J., Xie Y.Y., Zhou L., Nakata M., Makuuchi M., Tang W. Curcumin inhibits telomerase activity in human cancer cell lines. *Int. J. Mol. Med.* 2006;18:227–231.

Chakraborty S., Ghosh U., Bhattacharyya N.P., Bhattacharya R.K., Roy M. Inhibition of telomerase activity and induction of apoptosis by curcumin in K-562 cells. *Mutat. Res.* 2006;596:81–90.

Ramachandran C., Fonseca H.B., Jhabvala P., Escalon E.A., Melnick S.J. Curcumin inhibits telomerase activity through human telomerase reverse transcriptase in MCF-7 breast cancer cell line. *Cancer Lett.* 2002;184:1–6.

Horny Goat Weed (Epimedium)

This study concluded that Epimedium may delay the aging of cells by inhibiting the p16 gene expression. This promotes the production of phosphorylated Rb protein which protects telomere length. However it did not activate the telomerase enzyme (*Experimental study on effect of epimedium flavonoids in protecting telomere length of senescence cells* (H.W. Hu et al. December 2004).

What does Senescence Mean?

Senescence is the loss of a cell's power of division and growth. It is the process of deterioration with age.

Rhodiola Rosea

No long term studies have been conducted on Rhodiola Rosea's ability to protect telomere length, however it is a promising candidate due to the many numerous documented studies showing its protective effects against oxidative stress. A study published during summer of 2006 titled: *Radioprotection by Rhodiola imbricata in mice against whole-body lethal irradiation*, conducted by H.C. Goel and colleagues, showed that mice exposed to 100% lethal doses of gamma radiation that had taken Rhodiola 30 minutes beforehand showed a 90% survival rate.

80% continued to live for 30 days or more, compared to the rest of the mice that all died that did not take Rhodiola Rosea. The optimal radioprotective doses was 350 mg/kg of body weight. The tincture extract showed the best results.

A brand name supplement known as Vigodana containing Rhodiola Rosea mixed with magnesium, vitamin E and D, folic acid, vitamins B6 and B12 was the subject of a scientific study published in August of 2007 by V. Fintelmann and J. Gruenwald titled: *Efficacy and tolerability of a Rhodiola rosea extract in adults with physical and cognitive deficiencies.*



The study showed that people given the supplement for 12 weeks showed statistically higher improvements in physical and cognitive health. Best results were obtained taking 2 capsules after breakfast. Global assessment reported treatment was "very good" or "good" for 81% of the patients, as reported by doctors. No adverse side events occurred during the study. This study makes sense taking Rhodiola Rosea in the morning because that is when cortisol levels are higher for most seniors. A study published in February 2009 titled: *A randomised, double-blind, placebo-controlled, parallel-group study of the standardised extract shr-5 of the roots of Rhodiola rosea in the treatment of subjects with stress-related fatigue* conducted by E.M. Olsson and colleagues concluded that Rhodiola Rosea lowered cortisol levels.

So in conclusion, we can see that expensive patented supplements can be circumvented with just a little research.

The Chinese Herb Shilianhua (*The Stone Lotus*) and Its Longevity Properties

While I could find no scientific studies verifying the claims of Stone Lotus (*Shilianhua*), it is highly regarded in Chinese folk medicine for its longevity properties. A region called Bama County in rural China is famous for longevity. They have 3.52 centenarians per ten thousand people. This is the highest found anywhere in the world. They attribute their secret to eating a special plant called Shilianhua, which means Rock or Stone Lotus (*Sinocrassula indica*). It is also called He Hua Zhang.

The Chinese government states the reason for the health of the population is due to good water, clean air and a diet that consists preponderantly of vegetables. The region the population is located in is a mountainous region in the west of China situated on the slopes of the Himalayas, named Bama County. It has a particularly harsh environment, and considering their above average life expectancy, the Stone Lotus may prove to be the method they live longer than the majority of the population.

A study published in September 2007 titled: *Bioactive constituents from Chinese natural medicines. XXIV. Hypoglycemic effects of Sinocrassula indica in sugar-loaded rats*, conducted by M. Yoshikawa and colleagues showed that after 2 weeks of feeding mice an extract / tincture of Sinocrassula indicated that it significantly lowered their blood glucose levels. Considering healthy blood glucose levels are a key indicator in people that live to over 100 years of age, this herb shows promising results for life extension as well as for people with diabetes.

A seed over 1,300 years old called the sacred lotus (*Nelumbo Nucifera*), which grows in aquatic conditions, was recovered from a dry lakebed in northeastern China in 1995, and when planted germinated. Shen Miller and her team recommend further study of the seeds to understand the protective effects of the seeds against aging and the environment (*August 2001 J. Shen Miller. et al*).



Additional Scientific Studies showing Telomere Lengthening Effects

Tianshengyuan

A Chinese herbal medicine Tianshengyuan, used to treat bone marrow deficiencies, has been shown to increase telomerase activity and telomere length (*S. Lu et al. March 2014*).

DHEA

A study found that the maximum increase for normal cell telomere is by taking a single optimal dose of between 1.25 and 12.5 mg of DHEA daily. If the person took excessive doses of DHEA, their telomeres decreased and their risk for cancer increased (*Y. Omura 2005*).

Houttuynia Cordata

A 2013 study showed that an alcohol tincture/extract of Houttuynia cordata (*Yu xing cao*) showed excellent inhibition percentages for tail DNA percentages (*telomeres*) and significantly suppressed oxidative damage in lymphocyte DNA (*K.H. Lin et al. November 2013*).

Major Depression

A research team led by Owen Wolkowitz in San Francisco showed that people with major depression have on average shorter telomeres.

Extracts Of Elderberry, Cinnamon and Green Tea Block HIV-1 Entry and Infection

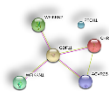
A study published in 2009 titled: *HIV type-1 entry inhibitors with a new mode of action*, and conducted by R.C. Fink and colleagues, found that compounds in elderberry prevent HIV-1 infection. Another study found that cinnamon may stop people carrying HIV from developing full blown aids (*M.E. Biedma et al. September 2012*).

Why Foods that Relieve Depression are Anti-Aging Foods

From my researching longevity and anti-aging foods, besides them having a resinous type structure (*Goji Berry, Apricot etc.*), the second attribute they possess is they relieve depression. This would make sense because when the mind is clear, the ability to picture oneself in good health is much easier.

Chapter 6 – 12 Studies on Anti-Aging Gene Therapy and Herbal Extracts

GDF11



GDF11 is a bone morphogenetic protein that is encoded by the GDF11 gene. A study published in May 2014 titled: *Restoring systemic GDF11 levels reverses age-related dysfunction in mouse skeletal muscle* and conducted by Manisha Sinha and colleagues found that regeneration in aged mice is possible by treating mice with GDF11 for the purpose of rejuvenating their skeletal muscles. The study showed that increased GDF11 levels in older mice showed improved muscle structural, increased strength longer endurance during exercise, lower levels of glucose after 40 minutes of strenuous running and increased average grip strength. The study concluded that GDF11 regulates muscle aging and may be useful for reversing age-related skeletal muscle and stem cell dysfunctions.

Dinh lang and Deprenyl

A study published in 1992 titled: *Extension of lifespan in mice treated with Dinh lang (Polcias fruticosum L.) and (-)deprenyl*, conducted by T.T. Yen and colleagues, concluded that a combination of Dinh Lang Root with Deprenyl significantly increased memory function and the age of old mice when combined together.

B401

A study published in May 2015 titled: *Treatment With Herbal Formula B401 Alleviates Penile Toxicity In Aging Mice With Manganism*, conducted by Chih-Hsiang Hsu and colleagues concluded that B401 reduced erectile dysfunction, increased nitric oxide production, decreased oxidative stress, inflammation and apoptosis in cells, and alleviated manganese toxicity (*metal chelator*). The formula consists of Huang qi (*Astragalus*), Nu zhen zi (*Ligustrum lucidum*), Ginseng (*Ren shen*), Dang gui (*Angelica sinensis*), Shu di huang (*Rhemannia glutinosa*) and Han lian (*Eclipta prostrata*). B401 is a common tonic herbal formula used in Chinese Medicine.

Beta Lapachone

Beta Lapachone is a tri-cyclic molecule that comes from the bark of the Pau d'arco tree in the Amazon rain forest. Pau d'arco is one of the most powerful antibacterial herbs available ranking high with Oregano. Studies have shown it prevents health related decline in aged mice (*Beta-Lapachone, a Modulator of NAD Metabolism, Prevents Health Declines in Aged Mice. Jeong-sook Lee et al. October 2012*).

Pterostilbene

Resveratrol was found to lengthen life span in yeast, worms, fruit flies and fish. Performance in mice only showed that life extension occurred with fat obese mice on a high fat diet. Pterostilbene is very similar to resveratrol and comes from the same fruits and berries and is much better absorbed. It has a much better uptake and metabolic stability in the body compared to resveratrol. Also less is necessary to achieve good results (*Low-dose pterostilbene, but not resveratrol, is a potent neuromodulator in aging and Alzheimer's disease. Neurobiology of Aging. J. Chang et al. September 2012*).

Gynostemma pentaphyllum

Gynostemma pentaphyllum. A study showed that oral administration of gypenoside extract (200 mg/kg) to mice after having their intestines filled with toxins that Gynostemma pentaphyllum significantly reduced their gastric and intestinal toxicity (*Phytopreventative effects of Gynostemma pentaphyllum against acute Indomethacin-induced gastrointestinal and renal toxicity in rats. C. Hesse et al. June 2007*).

C(60)

C(60). A scientific research study showed that oral administration of C(60) dissolved in olive oil (0.8 mg/ml) (1.7 mg/kg of body weight) fed to mice doubled their lifespan (*The prolongation of the lifespan of rats by repeated oral administration of fullerene T. Baati. et al. June 2012*).

Pyrroloquinoline Quinone (PQQ)

A study published in January 2008 titled: *Pyrroloquinoline Quinone (PQQ) Prevents Cognitive Deficit Caused by Oxidative Stress in Rats,*

conducted by Kei Ohwada and colleagues concluded that pyrroloquinoline quinone (PQQ) enhanced the learning ability of rats.

SC100

A herbal formula called SC100, composed of herbal substances that modulate genetic health, showed significant effects in extending the lifespan of *Drosophila*. SC100 consists of *Astragalus* (*Huang qi*), *Polygonum multiflorum* (*Ye jiao teng*), *Schisandra berry* (*Wu wei zi*), *Pycnogenol* (*Pine bark standardized OPCs and lignans*), *Polygonum* (*He shou wu*), *Drynaria rhizome* (*Gu sui bu*), *Perocarupus marsupium* (*Indian kino tree, or Bijaka*), L-theanine, and green tea extract (*Herbal supplement extends life span under some environmental conditions and boosts stress resistance. B. Villeponteau et al. April 2015*).

Premna Integrafolia

A study in 2012 found that extracts from that the herb *Premna integrifolia* (or *serratifolia*), called *Agnimantha*, contains the element 10-O-trans-p-Couraroylcatalpol (*OCC*) which extended the life of animals. It also reduced oxidative stress and promoted gene transcription factors associated with longevity (*V. Shukla et al. December 2012*).

N-acetylcysteine

A study published in December 1997 titled: *N-acetylcysteine slows down ageing and increases the life span of Drosophila melanogaster* and conducted by C. Brack and colleagues, concluded that flies fed NAC at 10 mg/ml had a 26.6% increase in their lifespan.

Supplement Facts	
Serving size: 1 tablet	
Servings per container: 60	
Amount Per Serving	% Daily Value *
Vitamin C (as Ascorbic Acid) 25mg	42%
Niacin 16mg	80%
Folic Acid 0.4mg	100%
Biotin 0.3mg	100%
Magnesium (as Mg Sulfate) 4mg	1%
Potassium (as K Chloride) 11mg	†
Citric Acid 25mg	†
Procaine HCl 100mg	†
Bilberry Extract (<i>Vaccinium myrtillus</i> L.) (berry) (25:1) 25mg	
Ginkgo biloba Extract (leaf) (50:1) 25mg	

Ultra H3

While I maintain the policy of backing up each report about extended lifespan where possible with scientific studies, in the rare case where there is a lot of interest in a new product and it has numerous positive reviews, I will list it. One such brand is a combination of nutrients known as Ultra H3. Their label is shown on the left. It contains anti-aging ingredients Niacin, Vitamin C, Ginkgo and Procaine, so the combination in the right amount seems to be

getting good results for people who want better sleep, more energy and reduced pain. This is based on over 400 reviews with high ratings shown on amazon and unikeyhealth.com of people using the Ultra H3.

GnRH

A study published in May 2013 titled: *Hypothalamic programming of systemic ageing involving IKK- β , NF- κ B and GnRH* and conducted by Guo Zhang and colleagues discovered that NF- κ B turned on genes involved in inflammation, immune response and cytokines. Researchers measured NF- κ B activation in mouse brains as they got older and noted that the protein was barely active in the hypothalamuses of young mice. However as the mice got increasingly older it became increasingly active. To further probe NF- κ B's effects on aging, the researchers then either inhibited or constitutively activated the protein in mouse hypothalamic tissues by manipulating the upstream activator IKK- β . The mice with activated NF- κ B showed deficits in cognition and muscle endurance, thinning skin, loss of bone mass, deterioration of cartilage in their tails, and early death. When researchers added GnRH to the hypothalamuses of the old mice, it promoted adult neurogenesis and after injecting mice with GnRH, the mice showed reduced signs of aging. Researchers suspect the hypothalamus controls aging and that it was the inflammation responsible for the aging in peripheral tissues. This study is one of the first to modulate inflammatory pathways to show outstanding effects on longevity. This means treating the brain with compounds that are anti-inflammatory could slow age-related degeneration. It is thought that sun gazing allows the sun's rays to passing through the eye and charge the hypothalamus tract. This could be why sun gazing is reported to enhance health.

Now that we know of the best extracts to reverse aging using gene therapy, let's take a closer look at how we can remain safe from one of the number 1 killers, cancer.

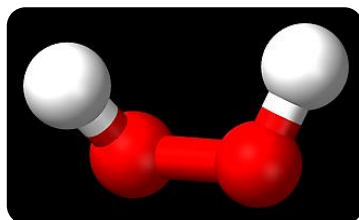
Chapter 7 – How Cancer Forms in the Body

A scientific paper published in August 2011 titled: *Hydrogen peroxide fuels aging, inflammation, cancer metabolism and metastasis*, conducted by Michael P Lisanti and colleagues stated that cancer cells are always in the body, however they only begin to sprout when the right "fertilizer" is present. The study goes on to illustrate that during 1889 Dr. Stephen Paget was the originator of the "seed and soil" hypothesis.



Hydrogen Peroxide and Catalase

Hydrogen peroxide is produced in the body as a byproduct of chemical reactions from enzymes. When our body is attacked by pathogens, the immune system responds by producing large amounts of hydrogen peroxide which come from the body's cells. If hydrogen peroxide become too high, the cell's DNA becomes damaged causing an increased chance of cancer. If excess hydrogen peroxide levels are allowed to persist, they begin to feed the body's cancer cells and fibroblasts and start mimicking the body's immune cells (*macrophages/neutrophils*). The immune cells are the key regulators of local and systemic inflammation in the body, via the innate immune response (*NFκB*). The energy for this mimicking effect can only occur when the right "fertilizer" is present.



Catalase

Catalase is a form of oxygen and is produced in our body from exercise and eating fresh fruits and uncooked raw vegetables. Its job is to decompose excess hydrogen peroxide by converting it to water and oxygen. There exists a delicate balance of catalase and hydrogen peroxide levels in the body. When this balance becomes unstable, the chances of a person getting cancer greatly increase. Cancer thus forms as a result of mild disturbances in the cells from this imbalance.

It is the job of catalase to protect our cells from excessive levels of hydrogen peroxide. Most foods consisting of fresh catalase are easily destroyed by cooking. Eating fresh fruits can make up for this loss. Also there is a clear connection between people who eat lots of garlic having a low incidence of cancer (A. A. Izzo *et al.* July 2004). Could this be because garlic has components that control excess levels of hydrogen peroxide levels in the body? A study published in June 2006 titled: *Protective effects of garlic sulfur compounds against DNA damage induced by direct- and indirect-acting genotoxic agents in HepG2 cells*, and conducted by C. Bellior and colleagues concluded that garlic reduces excess hydrogen peroxide levels, helping protect DNA.

As an example of how these 2 molecules behave in nature is in the bombardier beetle. This beetle uses a chemical reaction of mixing catalase and hydrogen peroxide as a form of self defense. The beetle has a gland in the tip of its abdomen that consists of two chambers. In one chamber there is a mixture of hydroquinone and hydrogen peroxide. The other chamber is filled with two enzymes, catalase and peroxidase. If the beetle feels threatened, it will immediately release and combine the contents of both chambers. The enzymes begin to catalyze the decomposition of hydroquinone and the hydrogen peroxide. This causes an exothermic reaction resulting in heat. The decomposition of the hydrogen peroxide produces oxygen which then builds up pressure. This pressure is then released by a valve in the beetle to spray attackers with hot, corrosive liquid.

How to Keep a Healthy Balance of Hydrogen Peroxide and Catalase

- Eat Fresh Fruits
- Exercise

Conditions contributing to an imbalance of Catalase and Hydrogen Peroxide

Flouride

A study published in 2009 titled: *Effect of Fluoride on Catalase, Guaiacol Peroxidase and Ascorbate Oxidase Activities in Two Varieties of Mulberry Leaves* and conducted by K. Anil Kumar and colleagues, found that fluoride increased oxidative stress levels and lowered catalase levels in mulberry leaves. Although I was unable to locate any studies on

humans, it is possible that the fluoride added to drinking water also destroys catalase levels in the cells of the body. Studies have found that this can be alleviated by taking royal jelly (*M. Kanbur et al. June 2009*).

An example of where hydrogen peroxide is used to remove stains and dirt that has seeped deeply into the enamel of teeth is in the procedure known as "*Teeth Whitening*". The procedure is very simple. The technique uses an LED lamp emitting cold blue light with a wavelength of around 465 nanometers. This wavelength activates the hydrogen peroxide and accelerating the whitening process. The method involves placing hydrogen peroxide gel on the person's teeth. Next a cold blue light is placed directly in front of the teeth and allowed to warm the area for between 15 and 20 minutes per treatment. Typically it takes 1 to 3 treatments to obtain results. Simply put, the light triggers a photocatalyst reaction breaking down the hydrogen peroxide, which then deeply cleans the teeth.

Herbs For Treating Leukemia

A study published in may 2004 titled: Antiproliferative and differentiating effects of polysaccharide fraction from fu-ling (*Poria cocos*) on human leukemic U937 and HL-60 cells, conducted by Y.Y. Chen and H.M. Chang concluded that fu-ling may be effective in treating leukemia.

Curcumin will synergize with Trichostatin to fight leukemia (*G. Yan et al 2013*). However at higher doses can actually be detrimental.

One of the studies of Curcumin showed that Telomerase activity in MCF-7 cells showed a 6.9-fold higher increase compared to human mammary epithelial cells (*Mukherjee Nee Chakraborty S., Ghosh U., Bhattacharyya N.P., Bhattacharya R.K., Dey S., Roy M. Curcumin-induced apoptosis in human leukemia cell HL-60 is associated with inhibition of telomerase activity. Mol. Cell. Biochem. 2007;297:31–39*).

Mistletoe has been found to increase the biophotons of light in our bodies (which has been used to treat leukemia).

GT-701 Body Building Combination herbal Formula. Ingredients: Astragalus, Chinese Ginseng, Atractylodes, Poria, Tang Kuei, Paeonia, Rhemannia, Cnidium, Cinnamon and Coix.

Thank you for reading Living Healthy Beyond 120, A Centurion's Plan for Longevity. This book is available on [Amazon.com](https://www.amazon.com) in hardcover. You may also download it to your [kindle](#) or [nook](#).

*Wishing you success and wellness
in your longevity anti-aging quest!*

Scott Rauvers

Author