

Immune System Secrets, Techniques for extending Life and surviving Pandemics

*Scientific methods for creating a longer
lifespan and improving vitality*

Scott Rauvers



Scott Rauvers

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Dedication



This edition is dedicated to Luigi Cornaro, one of the first persons to not only write about anti-aging, but to also live by his words. At around 40 years of age Cornaro was exhausted and in poor health, so on advice of his doctor, he started to adhere to a calorie restriction diet, which included drinking wine. After adapting to his new lifestyle, he remained in good vigorous health well into old age

("Cornaro, Luigi". *Encyclopædia Britannica*. 7 (11th ed.). Cambridge University Press. p. 163). Cornaro firmly rejected the old belief that growing older needed to be a period of misery and decay.

In 1550 he wrote **The Art of Living Long**. His book was eventually translated into, French, Dutch, English and German editions, becoming the bible of longevity for anti-aging enthusiasts of the time. As the 19th century approached, While 83 years of age, Cornaro's health was excellent. He was able to perform most functions unassisted, and associated with a wide audience of younger friends and correspondents. It was during this time that (*during 1550*) Cornaro wrote in further detail his secrets of longevity and its English translation titled: **The Sure and Certain Method of Attaining a Long and Healthful Life**, was successful as well, going through numerous editions; he published three follow-ups in 1553, 1558 and 1562.

Luigi Cornaro stated man was not destined to die at 60 or 70,

but with moderation and care could live an extremely long life. Cornaro's secret to longevity was partly spiritual based, in stating that longevity was desirable and "*God wills it*". Cornaro died at 98 years of age (**Chisholm, Hugh, ed. (1911). "Cornaro, Luigi" . *Encyclopædia Britannica*. 7 (11th ed.). Cambridge University Press. p. 163. gives a birth date of 1467**), with other sources stating he died at 102 years of age (**Arthur V. Everitt; Leonie K. Heilbronn; David G. Le Couteur (2010). "Food Intake, Life Style, Aging and Human Longevity". In Everitt, Arthur V; Rattan, Suresh IS; Le Couteur, David G; de Cabo, Rafael (eds.). *Calorie Restriction, Aging and Longevity*. New York: Springer. pp. 15–41. ISBN 978-90-481-8555-9**). To live until the age of 98 during the 1500's was a rare thing in those days. This proves that Luigi must have been onto something.

Loss of Vital Energy

Luigi implied old age was caused by a significant decline in what he termed "**vital energy**". This force supplied the vitality for growth in childhood and for stability in middle age. However, by mid age (40's) this reserve supply became depleted; leaving many individuals debilitated. However, moderation was one method to maintain this supply of vital energy, including through diet. With the proper accumulation and conservation of this vitality, diseases that accompany old age would disappear, and one would remain happy and productive until their final days (***Journal of Gerontology: BIOLOGICAL SCIENCE. Vol. 59A, No. 6, 515.–522. Anti-Aging Medicine: The History. Life Extension and History: The Continual Search for the Fountain of Youth. Carole Haber. Department of History, University of Delaware, Newark, United States***).

In summary, Cornaro stated the key to a long and happy life was available to all who controlled the means to retain their vital energy. This "**vital energy**" Luigi talks about sounds a lot like "QI"

or "Chi" energy that is generated via specific breathing or prana type exercises. I have written an entire book on how to generate this energy called Deciphering Tablet Number XIII The Keys of Life and Death by Thoth the Atlantean (*recently revised in July 2019*).. Also in this text, I outline in great detail scientific evidence documenting that QI energy that has been generated by QI Gong masters has been shown to prolong the lifespan of cells, compared to control groups, as well as many other studies documenting the positive effects of QI Gong upon living organisms. Could it be that this vital energy becomes conserved by antioxidants in the diet (*which reduce oxidative stress*) which reduces overall oxidative stress in the body, which in turn preserves this "*vital energy*"? This would mean that vital energy is constantly flowing through us and that the right exercises (*and antioxidants*) allow one to capture, retain and preserve this vital energy.

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Introduction



First and foremost, I would like to personally thank each one of you for the astounding success of the Solar Institute's anti-aging series. The most recent text, **Reverse Aging Naturally. Alchemy and Ayurveda Longevity Anti-aging Secrets**, published in December 2019, included the major discovery that Quercetin may be related to the philosopher's stone. Since that time numerous studies have confirmed the astounding healing and anti-aging properties of Quercetin. Some of these amazing published studies are documented in this latest 2020 edition you are now reading.

Lately so much new information on anti-aging has occurred just within the last couple of years. The information you read in this edition comes from the most recent research studies conducted within the last 3 years or so, including my latest discoveries and anti-aging breakthroughs as well as new anti-aging formulas, which are more effective than ever before.

As stated in many of my anti-aging books, there are numerous nutraceutical herbal formulas used as successful alternatives to pharmaceuticals. They also appear in this edition. Also this edition explores the evidence that diet is a key component in curing schizophrenia. I specifically list numerous published studies stating these facts.

This text in this edition is a little over 300 pages, the shortest in our anti-aging series, yet is filled with the most recent and potent anti-aging formulas and studies you will find anywhere, as well as the latest research studies on

resveratrol and other anti-aging substances.

Motivation is the key to Successfully Adhering to a Longevity Lifestyle

2000 years ago in the classic Chinese medical text titled: **Yellow Emperors Internal Classic**, Su Wen stated a balanced diet is the prime foundation and should contain five vegetables for filling, five animals for benefit, five grains for nutrition and five fruits for help. Hence, diet is but one of two vital keys necessary for a lifestyle of longevity. However, Su Wen overlooked one key component; **motivation**.

In the chapter titled: The Latest and Best NON-INVASIVE Natural Herbs and Supplements to help defeat the COVID19 Virus, I lay down the latest studies and herbs that have been used to successfully treat and enhance one's resistance against COVID19.

In addition to this latest edition from the Solar Institute, I share studies on how gratitude contributes to motivation, which in turn leads to better health and income. Most important of all, this book diffuses the fallacy that an anti-aging diet has to contain bitter tasting foods that taste bad. Nothing could in fact be further from the truth.

In summary, this book seeks to align you with the longevity version of yourself, so you not only experience a longer life, but a life filled with health, joy and vitality along the way. Incorporate the information in this edition into your strategic anti-aging plan in order to accomplish your longevity goals.

*Scott
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Rauvers.

Chapter 1

Exploring the Necessary Tools for a Lifestyle of Longevity



We all want to live longer, healthier lives. Today, thanks to the emerging field of anti-aging medicine, this long sought after dream is becoming a reality. During the last 10 years I have published a number of books on anti-aging, totaling thousands of pages, and many of you have asked the question "*I can't give up certain foods in my diet that accelerate aging because they taste so good.*" I agree, there is nothing wrong with having an ice-cream sundae every now and then or celebrating a victory with a good enjoyable meal. However, there exists a belief that foods that extend lifespan have to taste bitter or bland. Nothing could be further from the truth.

Longevity

Foods

Taste

Good

Let's begin with super-centurion Jeanne Calment who lived to over 120 years of age. Jeanne attributed her long and healthy life to eating a kilogram of chocolate every week as well as olive oil (*Jeanne Calment. Wikipedia*).

Dark chocolate has been found to exert protective effects on the cardiovascular system (*Effect of dark chocolate on arterial function in healthy individuals. Vlachopoulos C et al. Jun 2006*) and a study involving soccer players found that LDL-cholesterol levels dropped 15% after they ate 105g of flavanol-containing milk chocolate for two weeks (*Regular consumption of a flavanol-rich chocolate can improve oxidant*

stress in young soccer players. Fraga CG et al. Mar 2005). Dark chocolate contains cacao (***David L. Katz et al. Nov 2011***) and Cacao extract has been shown to stimulate NRF2 (***Cocoa Bioactive Compounds: Significance and Potential for the Maintenance of Skin Health. Giovanni Scapagnini et al. Aug 2011***).

Dark Chocolate Protects DNA

Dark Chocolate has been shown to protect DNA from the effects of oxidative stress and that worms fed cocoa powder exhibited increased resistance against the oxidative stressor hydrogen peroxide. This in turn caused their lifespan to exhibit an increase from 36% to 53%, with an overall lifespan of 17% after being fed cocoa powder (***Cocoa Polyphenols and Their Potential Benefits for Human Health. I. Andújar et al. Oct 2012***).

Red Wine

A research study concluded that consuming red wine or quercetin reduced LDL oxidation (***Reduced progression of atherosclerosis in apolipoprotein E-deficient mice following consumption of red wine, or its polyphenols quercetin or catechin. Hayek T et al. Nov 1997***).

Proanthocyanins

Proanthocyanins. These are some of nature's most powerful cancer fighters. Proanthocyanins can be obtained from grape seeds, cranberries (***Cranberry and Grape Seed Extracts Inhibit the Proliferative Phenotype of Oral Squamous Cell Carcinomas. Kourt Chatelain et al. Oct 2010***) and dark chocolate. They are also found in red wine, red kidney beans, plums, black plums, pecans, pistachios, hazelnuts, pecans and almonds, avocados, peanuts, curry, cranberry,

plum,, and cinnamon (***Screening of foods containing proanthocyanidins. Gu L et al. Dec 2003.***)

Further Reading

Multi-targeted prevention and therapy of cancer by proanthocyanidins. Vijayalakshmi Nandakumar et al. May 2008.

Cocoa-enriched diet enhances antioxidant enzyme activity and modulates lymphocyte composition in thymus from young rats. Ramiro-Puig E. et al. Aug 2007.

The neuroprotective effects of cocoa flavanol and its influence on cognitive performance. Astrid Nehlig. Feb 2015),

Cocoa flavonoids protect hepatic cells against high-glucose-induced oxidative stress: relevance of MAPKs. Cordero-Herrera I et al. Apr 2015.

Xylitol Enhances Glucose Tolerance

Xylitol, a natural sweetener used to sweeten tea or foods, also has been shown to improve glucose tolerance. Because many anti-aging foods, herbs and substances that extend lifespan also treat or reduce the risk of diabetes, it may be that small, intermediate amounts of Xylitol also extend lifespan. In diabetic rats fed Xylitol (*at 10% xylitol solution*), scientists discovered that their glucose tolerance was significantly better compared with the control and sucrose groups (***Effects of xylitol as a sugar substitute on diabetes-related parameters in nondiabetic rats. Md Shahidul Islam. May 2011.***)

Strawberries

The sweet tasting strawberry contains an abundance of Fisetin, which is also found in abundance to apples. Recent studies are just starting to show that Fisetin may be a more powerful anti-agent than quercetin. This is because Fisetin is a potent senolytic. In a research study, out of the 10 flavonoids tested, fisetin was the most potent senolytic. The study screened a panel of flavonoids for their senotherapeutic activity in order to determine if they could improve upon quercetin. Out of all flavonoids tested, Fisetin was the most effective. It reduced senescent markers in aged mice, as well as human explants of adipose tissue. The study concluded that Fisetin extended the lifespan and in aged animals (***Fisetin is a senotherapeutic that extends health and lifespan. Matthew J. Yousefzadeh et al. Sept 2018).***

What is a Senolytic?

I go into great detail about senolytics later in this book, because it is currently a hot anti-aging topic, but in a nutshell, senolytics flush dead cells from the body; behaving as a kind of enhanced detoxification system; similar in scope to giving your car's radiator a flush to get rid of all the gunk and dirt that has built up over time. Because our kidneys already do this for us, senolytics are better suited to people of older years. Expect to see many groundbreaking studies involving senolytics in the coming years.

Further Reading

Kidney disease: Senescent cell burden is reduced in humans by senolytic drugs. Date: September 18, 2019. Mayo Clinic.

Senolytics Improve Physical Function and Increase Lifespan in Old Age. Ming Xu, et al. Jul 2018.

Coffee Extends Lifespan. The Scientific Evidence Unveiled

A May 2012 NIH study confirmed that coffee drinkers have a lower risk of death. The National Institutes of Health has stated that older adults who consumed caffeinated or decaffeinated coffee exhibited a lower risk of death overall than others who did not drink coffee. The study was conducted by the National Cancer Institute (NCI).

The study, overseen by Mr. Neal Freedman, Ph.D., of the Division of Cancer Epidemiology and Genetics, (***The NIH-AARP Diet and Health Study***) looked for a link between coffee drinking and the risk of death in approximately 400,000 participants in the United States. The study was conducted from the years 1995 to 1996 and the participants were followed until the date of their death or until the study cut-off date (*Dec. 31, 2008, whichever came first*). As far as cause of death was concerned, the coffee drinkers were less likely to die from diabetes, respiratory disease, stroke, heart disease, injuries and accidents and infections. However this beneficial association was not seen for cancer.

Reference

Association of Coffee Drinking with Total and Cause-Specific Mortality. Neal D. Freedman et al. May 2012.

A Lollipop that Prevents Cavities

I include cavity prevention foods here because many of them extend lifespan, which I show in greater detail in my book *The Complete Guide to Natural Toothache Remedies and*

Re-mineralization.

The herb Licorice root (*Glycyrrhiza glabra*) is a sweet tasting herb that contains substances that exhibit strong antimicrobial activity against cariogenic bacteria. A research study created a method for producing a sweet, yet sugar-free lollipop containing licorice root, aiming to effectively kill cariogenic bacteria such as *Streptococcus mutans* (*which causes tooth decay*). The study found that the antimicrobial activity exhibited by the licorice lollipops was stable in lollipop form. Two human studies were conducted which found that brief applications of these lollipops (*twice a day for 10 days total*) led to a significant reduction of oral causing cariogenic bacteria in the mouth among most of the human subjects tested (***Development and evaluation of a safe and effective sugar-free herbal lollipop that kills cavity-causing bacteria. Chu-hong Hu.et al. Jan 2011.***

In a research study, worms fed the herb licorice root lived 14.28% longer (at a concentration of 250 µg/mL). Researchers speculated this was due to the high antioxidants in licorice root (both in vitro and in vivo) which extended lifespan (***Antioxidant and Antiaging Effects of Licorice on the Caenorhabditis elegans Model. Inés Reigada et al. Jan 2020.***

Dark Chocolate reduces cavities by 73 per cent
Studies on hamsters in which 20% of their sugar containing control diet was replaced with sweetened chocolate, displayed not only a happy diet, but also a reduction in their caries by up to 35 per cent when fed milk chocolate and up to 73 per cent when fed dark chocolate (***Inhibition of hamster caries by substance in chocolate. A Strålfors. Sept 1967.***

Concluding Summary

In closing there are great tasting foods, herbs and drinks one can incorporate into their anti-aging regime to stay healthy for many years to come.

Stress and Aging

Cellular senescence is defined as a state of irreversible growth arrest that causes aging. It was first discovered by Leonard Hayflick more than 50 years ago (*Hayflick L, Moorhead PS. The serial cultivation of human diploid cell strains. Exp Cell Res (1961) 25:585–621.10.1016/0014-4827(61)90192-6*). Premature senescence induced by stress in healthy cells has been shown to be critical in the aging and longevity of organisms..

Cellular Senescence

Cytogeneticist Paul Moorhead showed that cells enter a state he called senescence due to prolonged explicative stress. Cells that exhibit cellular senescence have an enlarged, flattened appearance. Serrano observed this shape in response to an over expression of a cell growth regulator gene. It may be that these cells undergo senescence to prevent themselves from becoming malignant.

As cells are exposed to types of stress that trigger cancer, such as DNA damage or other cellular injuries, they may undergo senescence as a way of avoiding passing on damage to future daughter cells. Hence it is now believed that the biological reason for the presence of certain senescent cells is to protect one from cancer. In summary, the role senescent cells play in the body are believed to behave as a protective mechanism against malignancies (*a type of tumor-suppressing mechanism*).

Excessive Stress Contributes to Physical and Mental Illness

A lifestyle of constant chronic stress leads to plaque buildup in the arteries, contributing to the condition known as atherosclerosis. This is exasperated even further if the person's lifestyle includes a diet high in fats and a sedentary lifestyle.

A correlation exists between a stressful lifestyle and psychiatric illness, with those living a stressful lifestyle being more likely to be diagnosed with a medical condition or physical illness. (*Life Event, Stress and Illness. Mohd. Razali Salleh. Oct 2008*).

The Link Between Stress and Cancer

No scientific studies have found that a direct cause-and-effect relationship exist between the human immune system and one's chance of contracting cancer. Studies do exist however showing a link between stress, the body's suppression of natural killer (NK) cells and tumor development (*Psychologic stress, reduced NK cell activity, and cytokine dysregulation in women experiencing diagnostic breast biopsy. Linda Witek-Janusek et al. Feb 2014*).

Gratitude Reduces Stress

One simple, free and quick method to remove stress quickly is to expres more gratitude. Studies have shown that grateful people are better adapted to difficult situations and express better coping strategies under stressful circumstances (*Watkins, 2004*). A gratitude list has also been found to reduce stress (*Kerr et al., 2015*) as well as depression (*Southwell, 2012*). Gratitude has also been shown to be strongly associated with emotional as well as physical

wellbeing (**Wood AM, Froh JJ, Geraghty AW. *Gratitude and well-being: a review and theoretical integration. Clin Psychol Rev. 2010;30(7):890–905***).

The Placebo Effect and Knee Surgery

Every year on average there are approximately 650,000 knee surgeries for arthritis of the knee, costing on average \$5,000 per surgery. A study conducted by Dr. Bruce Moseley in 1996 discovered that participants given a fake sugar pill for a knee problem recovered almost just as well compared to a group that was given a real pharmaceutical pill. This study is key, showing that some pains in our body are psychological and that the power of belief can create healing in our body. Research has also discovered that the placebo effect is effective in one third of the human population (***The placebo enigma revisited. JMS Pearce. Emeritus consultant neurologist. August 2011***).

Reference

Arthroscopic treatment of osteoarthritis of the knee: a prospective, randomized, placebo-controlled trial. Moseley JB et al. Jan 1996.

Chapter 2

The Anti-aging Lifestyle

The anti-aging lifestyle consists of two main parts -

1 - **Environment**

2 - **Diet**

Environment

The majority of people who live remarkably long lives do so in an environment that supports it. For example, in the online video titled ***Physical Immortality - Is it possible and what do you need?*** it talks about the organization called **People Unlimited** (www.peopleunlimitedinc.com) located in Arizona USA, which dedicates itself to creating a nurturing and supporting community for people who want to become physically immortal. Another example of where environment plays a role in lifespan, is living in an environment that challenges one's mental faculties. For example in the United States, people who live the longest lives live in College Towns where many people have educational degrees.

Can Environment Stimulate Neurocognitive Abilities?

The website 24/7 Wall Street compiled a list of people living in rural cities that had the longest life expectancies in the United States (2016). They discovered the following -

City	Average Lifespan
Naples-Immokalee-Marco Island, Florida:	83.5 years
San Jose-Sunnyvale-Santa Clara, California:	83.3 years
Corvallis, Oregon:	82.1 years
Bridgeport-Stamford-Norwalk, Connecticut:	82.1 years
Ames, Iowa:	82.0 years
Fort Collins, Colorado:	81.9 years
Rochester, Minnesota:	81.9 years
State College, Pennsylvania:	81.8 years
Logan, Utah:	81.5 years
Honolulu, Hawaii:	81.3 years

Interesting Facts about some of these Cities

<p>Ranks in the top 10 most educated cities Corvallis, Oregon Ames, Iowa Fort Collins, Colorado</p> <p>Has an above average number of inventors and innovators Corvallis, Oregon Rochester, Minnesota Fort Collins, Colorado San Jose, California</p> <p>Ranks in the top 60 towns with homes connected to the Internet State College, Pennsylvania</p>	<p>Ranks in the top 10 Population for High School Degrees Corvallis, Oregon Fort Collins, Colorado Rochester, Minnesota Bridgeport-Stamford-Norwalk, Connecticut, Ames Iowa Ft. Collins, CO</p> <p>Ranked as a Top 50 College Town to Live in Fort Collins Corvallis, Oregon Ames, Iowa State College, Pennsylvania</p>
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<p>Logan, Utah Corvallis, Oregon (ranks 2nd) Worldwide ranking of the top 5 rural cities of centenarians Okinawa, Japan, Sardinia, Italy, Loma Linda, California, Nicoya, Costa Rica and Ikaria, Greece.</p>	<p>Ranks in the 30 metropolitan cities where the top 1 percent control more wealth than during the 1928 peak. Naples-Immokalee-Marco Island Florida Bridgeport-Stamford-Norwalk, Connecticut San Jose-Sunnyvale-Santa Clara, California</p>
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According to the above data, many of these regions are environments that are academically challenging and have an above average number of educated people. Hence stimulated mental activity may be responsible for people living longer than average lives in these regions.

The Longevity Blue Zones

In Costa Rica, which is a "*Blue Zone*" (*a region of people with above average lifespans*), people with the longest lifespan live in regions where the water that they drink on a daily basis is "*hard water*". Hard water is water that contains an abundance of highly bioavailable calcium (*The Nicoya region of Costa Rica: a high longevity island for elderly males. Luis Rosero-Bixby, et al. Nov 2014*). And the Georgians, who make a special Yogurt that is packed with beneficial probiotics, has been scientifically verified to extend lifespan. When researchers looked into the diet of the Georgian Centurions, they discovered that they tended to consume more whole milk, less 2% milk as well as yogurt (*Methodological*

Considerations in Studying Centenarians: Lessons Learned From the Georgia Centenarian Studies. Leonard W. Poon, et al. Jan 2007. In another separate study, when researchers looked at the diets of people aged 100 years or more, they discovered that yogurt consumption was frequent among the participants (***Ozturk O, Celik MA, Tapur MA. Interviews about life with individuals aged 100 years or older. Turk J Geriat. 2017;20(2):135–141.*** The best yogurt to have is the plain yogurt that does not have artificial sugars. All you do is add a little honey and cinnamon and it tastes great!

Yogurt, the Food of Choice for Supercenturions

A 2014 study found that an increased consumption of yogurt intake was associated with a significantly reduced risk of developing type 2 diabetes. This study also stated that low-fat dairy foods (*specifically yogurt*), may act as a protective mechanism against diabetes in older women; especially if they were overweight or obese. Makino et al. demonstrated that eating yogurt on a daily basis (*that contained live cultures*) may enhance the body's resistance to respiratory infections (*especially colds*) in the elderly population. You can find yogurt that contains live cultures by looking at the label.

Reference

Yogurt: role in healthy and active aging. Naglaa Hani El-Abbadi, et al. Apr 2014.

Even if you don't live in a "*blue zone*", I have included a complete list of 30+ anti-aging herbal nutraceuticals supplement formulas **in Chapter 27**. This list of anti-

aging formulas is of tremendous advantage for anyone seeking a long and healthy life because these formulas create the necessary environment in the body for health and longevity to flourish. Combine these formulas with an anti-aging diet, and you are well on your way to achieving a lifestyle of longevity.

A longevity diet does not have to include foods that taste bland, boring or bitter. The hardest thing to give up is the eating of meat. However, today there exists an abundance of protein alternatives. Some of the best are Spirulina and French Lintels. French Lintels has almost the same amount of Protein as Chia Seeds.

The longest lived lady to date, verified by her passport, is **Koku Istambulova**. She was vegetarian, did not eat soup and respected spirituality. According to her passport, she lived 129 years and 240 days. The second is Mr. **Ali Ben Mohamed El Amri** who lived 129 years and 360 days; although little is known about his diet.

The Devastating Consequences of the Regular Consumption of Meat

A March 2012 study confirmed that the regular eating of red meat may shorten lifespan. The study, beginning in 1986, involved 37,000 men and over 83,000 women. All participants were completely free of cardiovascular disease as well as cancer at the beginning of the study. Over the course of the study, approximately 24,000 participants died, including about 9,500 from cancer and 5,900 from cardiovascular disease. What was interesting was that the participants who consumed the largest amounts of unprocessed (*and processed*) red meat exhibited the highest risk of all-cause cancer mortality as well as cardiovascular

disease mortality.

To break the study down into further detail (*adjusting for risk factors*), researchers discovered that just a single serving per day of unprocessed red meat raised the risk of total mortality by 13%. When an extra serving of processed red meat, such as hot dogs, bacon, sausage or salami was added to the diet it raised mortality risk by 20%. As an antidote to this higher risk of death, the researchers stated that adding just a single serving of foods that contain protein alternatives such as nuts, legumes, low-fat dairy, fish, poultry and whole grains lowered mortality risk between 7% and 19%. Past research studies have also tied red meat to increased risks of diabetes, cardiovascular disease and certain cancers.

Reference

Red Meat Consumption and Mortality: Results from Two Prospective Cohort Studies. An Pan et al. Mar 2012.

Scientific Studies Documenting that Vegetarians have Longer Lifespans

The average number of vegetarians in any given country is approximately 10%. The U.S. Population is comprised of vegetarians and vegans estimated to be between 5% and 2% respectively. The average death rate ratio in vegetarians compared with non-vegetarians (*based on a total of 8200 deaths*) was found to be 0.95 (95% CI: 0.82, 1.11) (***Mortality in vegetarians and comparable nonvegetarians in the United Kingdom. Paul N Appleby et al. Dec 2015***).

In a large scale study involving 73,308 participants between 2002 and 2007 that were between the ages of 21 and 39 years of age, researchers discovered that vegetarians

were more healthy due to a reduced death of cardiovascular disease as well as renal mortality and endocrine mortality. The study concluded that a vegetarian diet is associated with reductions in cause-specific mortality and that males that were vegetarian had better overall health than females. Interestingly the study also found that British vegetarians and US Adventist vegetarians ate somewhat differently. This may be due to the effect that American vegetarians consume more fiber and vitamin C than British Vegetarians.

Reference

Vegetarian Dietary Patterns and Mortality in Adventist Health Study 2. Dr. Michael J. Orlich et al. Oct 2014.

Further Reading

Mortality in vegetarians and comparable nonvegetarians in the United Kingdom. Paul N Appleby et al. 2015.

Causes of Death

Another study discovered that compared with regular meat eaters, low meat eaters showed between 30% and 45% lower mortality risk from respiratory disease, pancreatic cancer and other causes of death. The fish eaters showed an approximate 20% lower mortality from malignant cancer as well as an approximate 20% higher risk of circulatory diseases. Dedicated vegetarians, as well as vegans fared best with a significant 50% lower death rate from cancers (*lymphatic/hematopoietic*) as well as a showing a lower risk of death from pancreatic cancers.

Reference

Mortality in vegetarians and comparable nonvegetarians in the United Kingdom. Paul N Appleby et al. Dec 2015..

The Key for continued Motivation

When you can understand the basic fundamentals of why certain foods cause harm to the body, and know that most super-centurions abstained from eating meat, you gain a newfound awareness that protects you from craving it in the first place. This sets the foundation for motivation to adhere to a longevity diet.

To break out of an addiction, one only need remind oneself that the situation or habit itself is not truly 100% PLEASURABLE, but only the HABIT that FOOLS you into BELIEVING it is pleasurable

Milk and Opioids

As I have outlined earlier in many of my anti-aging books, milk is good for a growing body, but after the body reaches maturity, it may do more harm than good. There are numerous calcium substitutes available today that one can take to get a good supply of calcium in their diet.

Did you know that the reason milk is addictive is because it contains opioids? Just 1 g of casein, which is approximately equal to almost two tablespoons of cow milk, creates large numbers of opioids in the brain. Over time excess amounts of these opioids have been shown to exert physiological effects (**Meisel and FitzGerald, 2000**).

Further Reading

Differential neurogenic effects of casein-derived opioid peptides on neuronal stem cells: implications for redox-based epigenetic changes. Malav Trivedi. et al. Nov 2015.

Exorphins and Mental Health

Evolution has conditioned us to intuitively drink milk when we are born because when we are born our guts are naturally highly permeable to our mother's antibodies so we accept milk in order to strengthen our immune system. It is during this time it produces opioid like effects (*Teschemacher, 2003*). The opioids in wheat have been found to be even stronger than those found in bovine milk (*Zioudrou et al., 1979*).

What are Exorphins?

Exorphins are exogenous opioid peptides. This makes them distinguishable from endorphins (*or endogenous opioid peptides*). Exorphins include opioid food peptides such as microbial opioid peptides and the Gluten exorphin. It also includes any other opioid peptide foreign to a host that exerts metabolic efficacy for that host. Endorphins can be produced on demand, such as through exercise, social occasions and certain foods (*and unfortunately illegal drugs*). Also exorphins are generated at virtually every modern meal we eat. It may be that one of the prime reasons calorie restriction extends lifespan is because it is associated with reduced exorphin intake.

Reducing Exorphin Intake Benefits Mental Health

When excess exorphins were eliminated from the blood of schizophrenia patients over the period of a year, it led to remarkable improvements; with 40% of the participants exhibiting improvements or fully recovering from schizophrenia. Of the five patients undergoing combined dialysis and a diet free of gluten and casein, the group became entirely normal or improved significantly (*Cade et al., 2000*).

As climate change continues, some companies may genetically modify foods in such a way as to combat the effects of climate change. These modified foods may make it even harder for the stomach to digest. Hence, could this lead to increased levels of mental illness and depression in the future if this occurs? You can read firsthand accounts of where a doctor successfully treats numerous "incurable" cases of bad behavior as well as illness simply by removing gluten from their diet. In many cases, symptoms vanished in only a few days. The study is listed below.

Reference

Bread and Tears-Naughtiness, Depression and Fits Due to Wheat Sensitivity. GuY DAYNES, M.R.C.S., L.R.C.P., D.C.H. Feb 1956.

Could high gluten foods be partly responsible for mental disorders, including schizophrenia?

A study discovered that when children abstained from gluten and casein for several months, it was of benefit to their health (*Whiteley et al., 2013*). Another study involving 70 children who hadn't responded to any therapy, exhibited

after 3 months on the diet, an impressive 80% (***Cade et al., 2000***) enhancement in their health.

Chapter 3

Quercetin moves to the Forefront in Anti-Aging Research

When my last book on anti-aging was published in December of 2019, titled: **Reverse Aging Naturally. Alchemy and Ayurveda Longevity Anti-aging Secrets**, I dedicated the opening chapters to how Quercetin greatly extends lifespan, as well as its possible link to the Philosopher's Stone. Since the publishing of that edition, Quercetin has moved to the forefront in anti-aging research and remarkable studies have surfaced during this time.

Is Quercetin the Golden Elixir of Youth?

Senescence occurs when our cells reach their explicative potential and slow down their ability to successfully reproduce due to external stressors.

As mentioned earlier at the beginning of this book senescence plays a role in preventing tumors. However, senescence is a double edged sword. Today's modern anti-aging researchers regard senescence as a primary driver that contributes to physical decline in old age and as a contributor to a range of numerous age-related diseases (*Gil 2019*). Studies have found that by taking substances that target cells responsible for cellular senescence (*destroying senescent cells in the body*) it slows down age-related physical decline as well as boosts overall physical health.

In all my years of anti-aging research, I have found that Quercetin to be one of the best anti-aging substances. However, when it is combined with Dasatinib, it exhibits major anti-aging synergy. In the coming pages I will share

how Quercetin is used to remove excess senescent cells.

How do the anti-aging effects of Quercetin work?

Quercetin's anti-aging magic works by interfering with several anti-apoptotic pathways. It specifically targets senescent endothelial cells. These cells line animals' lymphatic vessels and blood vessels.

How do the anti-aging effects of Dasatinib work?

Dasatinib blocks a specific enzyme which regulates the survival of cells. It targets only senescent mesenchymal cells. These types of cells contribute to the aging process and include adipocyte progenitors and certain myoblasts type cells. Now let's explore what happens when Quercetin is combined with Dasatinib.

A combination of Quercetin and Dasatinib Extends Lifespan by removing Senescent Cells

In a novel experiment, researchers fed mice aged 20 months, which is roughly the age equivalent of a human aged between 57 and 67, a mixture of two substances that had been scientifically proven to kill senescent cells. One was dasatinib which is a drug used in chemotherapy. The other was the supplement quercetin, which is a natural flavonoid found in abundance onions, apples and the herb lovage.

The researchers found that after only two weeks of receiving the combination of quercetin and dasatinib that the mice could run further, were 36 percent less likely to die the following year and performed better on numerous physical tests. The study concluded that killing off senescent cells with this simple combination may rescue old animals from physical deterioration associated with age, as well as

extend the duration of a healthy, disease-free life (***Senolytics Improve Physical Function and Increase Lifespan in Old Age. Ming Xu, et al. Jul 2018***).

In another research study titled: Inducers of Senescence, Toxic Compounds, and Senolytics: The Multiple Faces of Nrf2-Activating Phytochemicals in Cancer Adjuvant Therapy (*published in Feb 2018*) that was conducted by Marco Malavolta and colleagues, they stated that the reactivation of senescence in cancer cells and their subsequent clearing are suggested as therapeutic in the elimination of cancer. Several natural compounds that activate Nrf2 have been paradoxically shown to induce cell death or senescence in cancer.

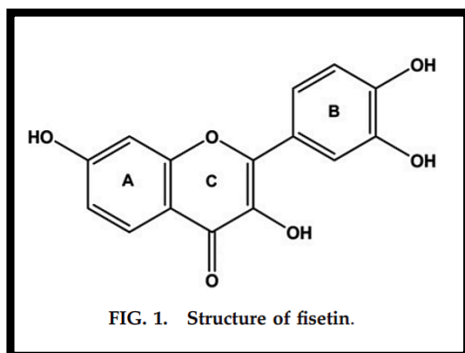
What is NRF2?

NRF2 is short for **nuclear factor erythroid-2-related factor 2**. Simply stated, it activates over 500 genes via tiny molecules known as sirtuins. NRF2 occurs via calorie restriction (*including fasting*), during exercise and by eating natural nutrients that are NRF2 activators.

Natural Nrf2-interacting compounds include: curcumin, epigallocatechin gallate, piperlongumine, fisetin, tocotrienols, genistein, resveratrol, quercetin, silybin, sulforaphane, triptolide, phenethyl isothiocyanate, allicin, berberine, and phloretin.

Because senescent cells display long-term survival, finding ways to eliminate these types of cells may be beneficial in therapeutic strategies against cancer. As stated earlier, senescent cells appear to exhibit tumor-suppressing mechanisms. This may occur so that it prevents the proliferation of cells that are at risk for mutation. In the

long term, the best type of treatment may end up depending upon the cancer type and on the type of therapy used.



Fisetin

In a research study out of the 10 flavonoids tested, **fisetin was the most potent senolytic** (*Fisetin is a senotherapeutic that extends health and lifespan. Matthew J. Yousefzadeh et al. Sept 2018*).

Fisetin is found in abundance in strawberries (160 lg/g) apples (26.9 lg/g) and persimmon (10.5 lg/g). It is also found in grapes, onions, and cucumbers at concentrations between 2 and 160 lg/g. Fisetin has also been found to be of benefit for treating prostate cancer, melanoma and to reduce ischemia-induced brain damage. One research study found that fisetin given to mice with lung cancer resulted in a marked decrease in their tumors compared to the untreated mice. And Fisetin treatment in combination with cyclophosphamide induces greater tumor inhibition.

Reference

Antioxidants & Redox Signaling. Volume 19, Number 2, 2013. Fisetin: A Dietary Antioxidant for Health Promotion. Naghma Khan et al.

The molecular structure of fisetin is **very similar to quercetin**; with the only difference being a hydroxyl group in

position 5. This very similar structure makes it a perfect candidate for an anti-aging substance. The good thing about Fisetin is that no known side effects exist, even when injected at high doses (***Fisetin is a senotherapeutic that extends health and lifespan. Matthew J. Yousefzadeh et al. Sept 2018***).

Is Fisetin a more Potent Anti-Aging agent than Quercetin?

A study found that administering isetin to aged wild-type mice caused them to experience a reduction in age-related pathology. It also restored their tissue homeostasis as well as extended their lifespan (***Fisetin is a senotherapeutic that extends health and lifespan. Matthew J. Yousefzadeh et al. Sept 2018***).

A combination of Quercetin and Resveratrol reduce Senescent Cells

Chronic administration of 25 μM quercetin along with 10 μM resveratrol has been shown to induce senescent-like growth arrest in human glioma cells (***Resveratrol and quercetin cooperate to induce senescence-like growth arrest in C6 rat glioma cells. Cancer Science. Zamin L. L et al.***).

A combination of Quercetin and Dasatinib Strengthens the Lungs

When Quercetin was combined with dasatinib and administered to mice suffering from a severe degenerative lung disease (*pulmonary fibrosis*), it improved their physical health and lung functioning (***Cellular senescence mediates fibrotic pulmonary disease. Marissa J Schafer et al. Feb 2017***).

This study is a significant finding because the three main regions of the body responsible for anti-aging are -

1- **The Lungs**

2 - **The Kidneys**

3 - **The Liver**

Any substance that keeps these 3 regions in optimal health usually exhibits strong anti-aging properties.

A combination of Quercetin and Dasatinib reduces Brain Damage and Inflammation

In a research study, mice diagnosed with Alzheimer's disease were given a combination of Quercetin and Dasatinib. The researchers discovered to their amazement that the combination reduced inflammation and brain damage, as well as slowed the pace of the mices' memory loss (***Senolytic therapy alleviates A β -associated oligodendrocyte progenitor cell senescence and cognitive deficits in an Alzheimer's disease model. Peisu Zhang et al. Apr 2019***).

2019 Human Trials of a combination of Quercetin and Dasatinib

During February 2019 researchers from the University of Texas and Wake Forest University in North Carolina, published their results from a study that involved 14 participants that participated in a Phase 1 trial that included taking a combination of dasatinib and quercetin.

After the participants consumed three oral doses a week for three weeks, researchers discovered that the participants

walked further in six minutes than they were able to at the start of the study. They also performed better on tests involving physical activity.

Reference

Senolytics in idiopathic pulmonary fibrosis: Results from a first-in-human, open-label, pilot study. Jamie N. Justice et al. Jan 2019.

And in September 2019, the same team stated encouraging results in the form of preliminary data from 9 participants diagnosed with diabetes-related kidney disease that were given the dasatinib and quercetin cocktail. During the trial, the researchers extracted biopsies of the participants' fat tissue before and after the study. To the researchers' amazement, they discovered that their senescence cells were significantly decreased in the fat, blood and skin regions of their body. In summary, these amazing results are the first to document that a combination of quercetin and dasatinib can flush out senescent cells in human beings.

Side Effects of Killing Excess Senescent Cells

The flushing of excess senescent cells all at once is really a type of detoxification of old cells from the body. However, continued excess detoxification of the body is not a good idea. For example in my anti-aging series of books I stress that a detox is best done at the Spring and September Equinoxes, when the body is best able to flush toxins more easily from the body this time of year. Detoxification can also be done at other times that one feels like it such as during fasting or to restore energy or to recover from an illness. At the solstices and especially the equinoxes, the body's

structure switches gears in order to adapt to the upcoming season. In simple terms, anti-aging is how successful the physiology of the human body can rapidly re-adapt to a changing environment.

Anti-aging scientists have discovered that if large numbers of senescent cells are killed off all at once, that **their toxins could spill over into surrounding tissue**. This could then cause organ dysfunction. If this happens in older people, their immune systems may not be strong enough to clear this sudden discharge of waste. Also senescent cells emit important proteins critical for healing wounds. Hence eliminating them all at once may hinder the body's ability to repair wounds. Hence, small doses of a senescent cell flusher taken over a prolonged period of time would work best if one wants to do a thorough flush of toxins from their cells.

Reference

Kidney disease: Senescent cell burden is reduced in humans by senolytic drugs. Date: September 18, 2019. Mayo Clinic.

Chapter 4

The Most Effective and Simplest Anti-Aging Substances to date

Tomatidine

Tomatidine is a natural substance found in abundance in green tomatoes. Studies have discovered that Tomatidine affects aged muscle cells by targeting their genes.

Sarcopenia is a condition that occurs due to aging. Sarcopenia causes a decline in skeletal muscle tissues. A research team from the National Institutes of Health discovered that when the worms *C. elegans* were fed food that had tomatidine added to it, that they lived significantly longer, while at the same time exhibited improved physical health, compared to the control group. The study discovered that tomatidine lessened the decline in cellular function that is the result of aging. Looking at the metabolomics data in the worms fed tomatidine, the data revealed that tomatidine caused many changes in their genes. For example, tomatidine caused an increase in the production of key genes that are associated with mitochondrial (cells) maintenance and health.

The researchers concluded that tomatidine induces mild oxidative stress. This mild stress causes the cells to create signals that upregulate, which in turn improves efficiency and strength. Hence tomatidine exhibits its effects upon cells similar to physical exercise, where exercise causes the muscles to become stronger.

The National Institutes of Health researchers also conducted a human cell testing trial, where they discovered that tomatidine exhibited similar effects in human cells.

Reference

Fang EF, Waltz TB, Kassahun H, et al. Tomatidine enhances lifespan and healthspan in *C. elegans* through mitophagy induction via the SKN-1/Nrf2 pathway. *Sci Rep.* 2017;7:46208.

A June 2020 Research study Discovers Brd2 haploinsufficiency Extends Lifespan

A recent research study published in June of 2020, showed that Brd2 haploinsufficiency extended the lifespan in mice. Longevity was extended 23% ($p < 0.0001$) and it reduced their cancer incidence **43%** ($p < 0.001$). The mice also showed an extended period of fertility, improved grooming and a lack of other age-related declines such as healthy kidney functioning and morphology. This is interesting because exercise has been shown to also reduce cancer by approximately **40%** (*Exercise in prevention and management of cancer. Newton RU, Galvão DA. Curr Treat Options Oncol. 2008 Jun; 9(2-3):135-46.*

The study concluded that Brd2 haploinsufficiency strengthens mitochondrial integrity (*cells*) and reduces the rate of aging by protecting the cells against molecular and cellular damage. Hence, it may be a powerful detoxer for the body. It also concluded that Brd2 haploinsufficient mice showed significant lifespan extension as well as delays in age-related pathologies by displaying the following:

- (1) extended fertility**
- (2) increased expression of cytoprotective genes**
- (3) increased longevity (*with or without tumors*)**
- (4) reduced incidence of cancer**

(5) more youthful kidney structure and function

(6) a notable delay in age-related postural and behavioral phenotypes

As is normal when excess anti-aging substances are taken, the study also found that increased Brd2 expression promoted cancer in murine hematopoietic cells and B-lymphocytes.

Reference

Brd2 haploinsufficiency extends lifespan and healthspan in C57B6/J mice. Shilpa Pathak et al. June 2020.

What is Brd2 haploinsufficiency?

Brd2 haploinsufficiency is a biological reaction in the body that occurs due to caloric restriction. It has been demonstrated in mice where it increases lifespan. Reduced expression of Brd2 also reduces oxidative stress, increases genomic stability, promotes DNA repair, upregulates p53 and increases lifespan *(Bonkowski MS, Rocha JS, Masternak MM, Al Regaiey KA, Bartke A. Targeted disruption of growth hormone receptor interferes with the beneficial actions of calorie restriction.)*, *(Sun LY, Spong A, Swindell WR, Fang Y, Hill C, Huber JA, et al. Growth hormone-releasing hormone disruption extends lifespan and regulates response to caloric restriction in mice.)*

Brd2 haploinsufficiency is very unique, because like Metformin, which targets multiple aspects that contribute to aging, the action of Brd2 haploinsufficiency is tied to

multiple longevity-related genes as well as molecular processes. Hence anyone wanting to understand how genes reverse aging can study how the reduced expression of Brd2 could be a fundamental factor influencing lifespan.

Brd2 haploinsufficiency has also been shown to up-regulate genes in the Sirtuin pathway which is associated with increased lifespan (***Sun LY, Spong A, Swindell WR, Fang Y, Hill C, Huber JA, et al. Growth hormone-releasing hormone disruption extends lifespan and regulates response to caloric restriction in mice.***)

What is SIRTUIN1?

Sirtuin 1 (SIRT1) regulates longevity-related activity such as genome stability, inflammation, DNA repair, apoptosis, cell cycle progression and mitochondrial respiration (***Sun LY, Spong A, Swindell WR, Fang Y, Hill C, Huber JA, et al. Growth hormone-releasing hormone disruption extends lifespan and regulates response to caloric restriction in mice.***)

Further Reading

Sun LY, Spong A, Swindell WR, Fang Y, Hill C, Huber JA, et al. Growth hormone-releasing hormone disruption extends lifespan and regulates response to caloric restriction in mice. *Elife*. 2013;2:e01098 10.7554/eLife.01098

Bonkowski MS, Rocha JS, Masternak MM, Al Regaiey KA, Bartke A. Targeted disruption of growth hormone receptor interferes with the beneficial actions of calorie restriction. *Proc Natl Acad Sci U S A*. 2006;103(20):7901–5. 10.1073/pnas.0600161103.

Heated Lycopene shows enhanced Bioavailability

A research study discovered that when lycopene is heated during processing, that it is more bioavailable than lycopene from fresh tomatoes (*Gärnter et al. 1997, Stahl & Sies 1992, Allen et al. 2002*). The total amount of lycopene absorbed by the body varies greatly with the dose and the type of food ate with it. In chapter 5 titled: **How to Heat Foods and Herbs to Enhance their Antioxidants**, I will go into great detail about how certain spices and berries actually increase their levels of antioxidants when heated and moderate exercise, which creates heat in the body, has been shown to

Thank you for reading this unique book on anti-aging. Look or ask for it at your local bookstore, or order it online. This edition can also be found in Kindle and Nook editions. Thank you again and I wish you all much luck and success in your plans for a long and happy life!!!

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