

The X-Factors: Beyond the Plant-Based Diet and Exercise

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Background: The author read a piece of story from the book ***Outliers*** on the residents of Roseto where no one under age of 55 ever suffered from any heart disease although the Rosatans were on Standard American Diet of 50's. The author consulted many books to answer the Roseto health mystery and realized there are many factors, he called them the X-Factors, have contributed to the longevity and health of the town residents and also in many other cultures. Specifically two factors stand out the most: love and social networks are the best predictors for longevity and health. This conclusion was drawn from variety of books with similar subjects. For example, ***Healthy at 100***, ***The Longevity Project***, and ***Blue Zones*** lay out the paths an individual can take to ensure his/her longevity and health. ***Love & Survival*** proved the love and intimacy are better than any medical treatments available to prevent and heal diseases, and ***Connected*** showed indisputably the power of social networks and how they shape our lives. Finally ***The Biology of Belief*** beautifully explained scientifically why and how X-Factors like love and social networks can impact out health. The author encourages members read some of these books to further and solidify their own beliefs that by combining the X-Factors with plant-based diet and exercise we could achieve the goal of living 100-years old with quality of life without any diseases and pills. Happy reading and Healthy you!

Reference Books List:

1. **The Blue Zones: Lessons for Living Longer From the People Who've Lived the Longest – Dan Buettner**
2. **Healthy at 100: How You can – at any age – Dramatically Increase Your Life Span and Your Health Span – John Robbins**
3. **Outliers: The Story of Success – Malcolm Gladwell**
4. **The Longevity Project – Surprising Discoveries for Health and Long Life from the Landmark Eight-Decade Study – Howard Friedman, Ph.D. and Leslie Martin, Ph.D.**
5. **Love & Survival: The Scientific Basis for the Healing Power of Intimacy – Dean Ornish, M.D.**
6. **Connected: The surprising Power of Our Social Networks and How They Shape Our Lives – Nicholas Christakis, M.D., Ph.D. and James Fowler, Ph.D.**
7. **The Biology of Belief: Unleashing the Power of Consciousness, Matter & Miracles – Bruce Lipton, Ph.D.**

The Roseto Mystery

In Roseto, Pennsylvania, in 1950s, years before the advent of statin drugs and aggressive measures to prevent heart diseases, no one under 55 years-old had died of a heart attack or showed any signs of heart disease. For Rosetan men over 65, the death rate from heart disease was half that of the U.S. as a whole and the death rate from all causes in Roseto was 30 to 35 percent lower than expected. The researchers then had found no suicide, no alcoholism, no drug addiction, and very little crime. No one on welfare and no peptic ulcers. Rosetans simply were dying of old age. The researchers ruled out diet and exercise, genetics, or location as the factors of longevity. The only factor the researchers could determine was the town itself. Rosetans visited one another often; stopping to chat in Italian on the street; cooking for one another in their backyards. Many homes had three generations living under one roof; grandparents commanded much respect; many went to mass at Our Lady of Mount Carmel and saw the unifying and calming effects of the church. There were 22 separate civic organizations in a town of just under 2000 people. The Rosetans discouraged the wealthy

from flaunting their success and helped the unsuccessful obscure their failures. The Rosetans had created a powerful, protective social structure capable of insulating themselves from the pressures of the modern world. The Rosetans taught us the health depended not on who we were – our genes, but who we are – the value of the world we inhabit and the people we surround ourselves and associate with

The Okinawa Miracle

Okinawa - The southernmost Japanese state is made up of 161 islands with 1.4 million residents. Often is referred as “Japan’s Hawaii” for its year round pleasant climate – 82F in July and 61 in January. It is home to the world’s healthiest documented elders, to the world’s longest recorded life expectancies, and to the highest concentrations of verified centenarians in the world. In 1975 began the Okinawa Centenarian Study, a study that continues to this day, to assess whether there is any validity to the extraordinary health and longevity in Okinawa. Okinawa today accounts for 15% of the world’s documented “supercentenarians” – those who have lived to 110 and beyond – despite being the home of only 0.0002% of the world’s population! The three leading killers in the West – coronary heart disease, stroke, and cancer – occur in elderly Okinawans with the lowest frequency of any elder population ever thoroughly studied by modern science. Okinawa Research Team comments: “Our study found the elders to have incredibly young arteries, low risk for heart disease and stroke, low risk for hormone-dependent cancers (healthy breasts, ovaries, prostates and colons), strong bones, sharp minds, slim bodies, natural menopause, healthy levels sex hormones, low stress levels, and excellent psycho-spiritual health ... If North Americans lived like the elder Okinawans, we would have to close 80% of the coronary care units and 33% of the cancer wards in the United States, and a lot of nursing homes would also be out of business.”

Okinawans are born into a lifestyle that promotes health with access to year-round fresh organic vegetables, strong social support, and amazing herbs that amount to preventive medicines.

Okinawa's Longevity Diet and Exercise Factor

- 1) ***Rely on a plant-based diet*** – meat-eating only reserved for special occasion with small amounts
- 2) ***Eat more soy*** – tofu and miso soup: Flavonoids in tofu may help protect the hearts and guard against breast cancer while fermented soy foods contribute to a healthy intestinal ecology
- 3) ***Hara Hachi Bu*** – stop eating when you're 80 percent full
- 4) ***Stay active*** – be an active walker and gardener
- 5) ***Do gardening*** – source of daily physical activity and help reduce stress as well as a near-constant source of fresh vegetables
- 6) ***Plant a medicinal garden*** – culture a garden with medicinal purpose
- 7) ***Enjoy the sunshine*** – regular exposure of sunlight produces vitamin D that helps promote stronger bones and healthier body

Okinawa's Longevity X-Factors

- 8) ***Maintain a "moai"*** – it provides secure social networks for financial and emotional support
- 9) ***Have an attitude*** – learn to be likable and keep younger people in their company
- 10) ***Embrace an "ikigai"*** – Purpose-imbued lives with clear roles of responsibility and feeling of being needed

The Blue-Zones Longevity Diet Factor

- 1) **Plant Slant** – avoid meat and processed foods. Restrict meat-eating and have lots of vegetables (4 to 6 servings daily and at least two kinds each meal), fruits, and nuts
- 2) **Hara Hachi Bu** – painlessly cut calories by 20%. Eat 80% full
- 3) **Grapes of Life** – drink red wine in moderation for artery-scrubbing polyphenols

The Blue-Zones Longevity Exercise Factor

- 4) **Move Naturally** – be active without having to think about it. Engage in easy exercises like walk, yoga, gardening, etc. Any regular, low-intensity activity will do
- 5) **Down Shift** – take time to relieve stress. Try meditation. “Life is short. Don’t run so fast you miss it.” – advice from a “Blue Zones” centenarian for younger people

The Blue-Zones Longevity X-Factors

- 6) **Belong** – participate in a spiritual community
- 7) **Loved Ones First** – Make family a priority. Marry, have children, and build lives around that core. Families represent the highest degree of social network. Invest time and energy in your children, your spouse, and your parents. Play with your children, nurture your marriage, and honor your parents
- 8) **Right Tribe** – be surrounded by those who share Blue Zone values. Build up the inner circle of your blue Zone by identifying the people in your circle who reinforce the right habits and understand or live by Blue Zone secrets. Be likable and create time together with the members of your inner circle
- 9) **Purpose Now** – take time to see the “big picture”: “why I wake up in the morning.” Keep a sense of purpose for living at all time

The American Nightmare

In the United States today most of us hit our peak between 20 and 30 and gradually decline after that age. By the age of 70, most of us have lost 60% of our maximal breathing capacity, 40% of our kidney and liver functions, 15 to 30% of our bone mass, and 30% of our strength. Close to half of all Americans over the age of 85 have Alzheimer's disease. The average 21st century American will likely spend more years caring for parents than for children. By 2040, it is estimated that 5.5 million Americans will live in nursing homes. Another 12 million will require ongoing homecare services. On September 28, 2011 headline news in NPR – “Boomers’ ‘Delusion’ About Health In Retirement” “Dementia Patients Suffer Dubious Hospitalizations” ... “More Realize They Face Pricy Long-Term Care”. Predictably many Americans will spend their final decades struggling with loneliness and depression.

The Longevity Project

For years we have been told to make lists and obsessively monitor when we're angry, what we eat, how much we worry, and how often we go to the gym. So why isn't everyone healthy? The Longevity Project, gathering key information and using modern research methods to study 1,500 Californians across eight decades, bust many old, dead-end myths – common advice that is not supported by good science.

The Longevity Project – The Path to Long Life

- ***The High Road*** – the conscientious type with good friends and a happy marriage. It was those who were conscientious as children and who remained highly persistent and prudent as adults who lived the longest
- ***Not Easy Street*** – hard work and accomplishment to be a strong predictor of long life
- ***Off the Beaten Path*** – the group you associate with often determine the type of person you become. For people who want to improve health,

association with other healthy people is usually the strongest and most direct path of change

- ***Catastrophe Lane*** – people who successfully took charge of their thoughts and stopped catastrophic thinking often returned to a more viable way, usually with the help of a spouse or a close friend
- ***Happy Trail to You*** – happiness does not cause good health; both happiness and health result from being on the right paths
- ***The Road Less Traveled*** – Although a good marriage can contribute to health and well-being, marriage can also bring troubles, plus the possibility of breakup and its health-damaging consequences. A healthy path for a woman is staying single after a divorce
- ***The Road to Resilience*** – people who had the persistence, the motivation, and especially the support of a spouse or a close friend to come back each time they faced a challenge. Resilience was not a trait they were born with, nor an inner insight, but a process of perseverance and hard work
- ***The Long and Winding Road*** – it was those who started active and stayed active, and those who started out less active but increased and maintained their activity, who lived the longest
- ***The Long and Winding Road*** – it was not those who made resolutions to go running who succeeded. Rather, it was those whose habits, routines, and social networks encouraged movement and made it difficult to sit in one place who did well
- ***The Feminine Avenue: Establishing Social and Emotional Ties*** – Among men, those who were in stable married relationship lived the longest. Male or female who could nurture the feminine quality of social connectedness stayed healthier. The more masculine men and the more masculine women died sooner, while the more feminine women and the more feminine men lived longer

- ***The Less Sunny Side of the Street*** – moderate worrying often conferred real benefits to health. Especially for men, neurotic tendencies can promote longevity; nagging thoughts and irksome concerns were important to heading toward better health
- ***The Holy Way*** – Religious individuals tend to live longer because they were actively involved in their communities; they had close friends and social ties they could rely on; those who were engaged with others lived longer lives

The Longevity Project X-Factors

- Those who, through an often-complex pattern of persistence, prudence, hard work, and close involvement with friends and communities, headed down meaningful, interesting life paths and found their way back to these healthy paths each time they were pushed off the road
- The qualities and lifestyles cultivated by people on these long-life paths reflect an active pursuit of goals, a deep satisfaction with life, and a strong sense of accomplishment
- Having a large social network
- Engaging in physical activities that naturally draw you in
- Giving back to your community
- Enjoying and thriving in your career
- Nurturing a healthy marriage or close friendships can do more than add many years to your life
- Together, they represent the living with purpose that comes from working hard, reaching out to others, and bouncing back from difficult times
- Those individuals who became involved with others in a consequential life would be improving their own health as an unanticipated bonus

- There will always be some exceptions, but because getting and staying on healthy life paths can be a lifelong challenge, it is heartening to know that embracing the lessons of the Longevity Project and striving for a socially richer and more productive life will increase the odds of long life as well!

Social Network as an X-Factor

The new scientific evidence presents that our real-life social networks shape virtually every aspect of our lives: how we feel, whom we marry, and whether we fall ill. Everything hinges on what others around us are doing, thinking, and feeling. Our world is governed by the ***Three Degrees of Influence Rule***: we influence and are influenced by people up to three degrees removed from us, most of whom we do not even know. For example, your friend's friend's friend has more impact on your happiness than \$5000 in your pocket. Your friends' friends can make you fat or thin! Our social networks underlies financial scams, eating disorders, substance abuse, and suicide clusters, but also voter turnout, innovation, altruism, and "random" acts of kindness. A person is about 15% more likely to be happy if a directly connected person (at one degree of separation) is happy. The happiness effect for people at two degrees of separation (the friend of a friend) is 10%, and for people at three degrees of separation is about 6%. We are hardwired to seek out social relationship, so we feel pleasure or reward when we spend time with friends and family. So having more happy friends is the key to our own emotional well-being

The Whole Is Great

Altruism is a key predicate for the formation and operation of social networks. Some degree of altruism and reciprocity, positive emotions such as love and happiness, are crucial for the emergence and endurance of social networks. We give to sustain the network, and it is the network itself that we value. Generosity binds the network together, but the network also functions to foster generosity. On a human level, social networks affect every aspect of our lives: what we think, what we desire, whether we fall ill

or die. All we need to do is connect – each of us has much bigger impact on others than we can see. When we take better care of ourselves, so do many other people. When we practice random acts of kindness, they can spread to dozens or even hundreds of other people. The whole of humanity comes to be greater than the sum of its parts. Like an awakening child, the human superorganism is becoming self-aware, and this will surely help us to achieve our goal. This awareness will be the sheer joy of self-discovery and realization that to truly know ourselves, we must first understand how and why we are all connected!

Love as an X-Factor

Being married adds 7 years to a man's life and 2 years to a woman's life, which has better benefits than most medical treatments. Being near a familiar person – even an acquaintance, let alone a spouse – can have effects as diverse as lowering heart rate, improving immune function, and reducing depression. Besides from the diet change, Dr. Ornish has found that perhaps “the most powerful and meaningful” intervention is love and intimacy and the emotional and spiritual transformation that often results. Yet these factors are largely ignored by the medical profession, which tends to focus primarily on the physical and mechanistic: drugs and surgery, genes and germs, microbes and molecules. Dr. Ornish argues that love and intimacy are a root of what makes us sick and what makes us well, what causes sadness and what brings happiness, what makes us suffer and what leads to healing. If a new drug had the same impact as love and intimacy, virtually every doctor in the country would be recommending it for their patients. According to Dr. Ornish, the real epidemic in our culture is what he calls emotional and spiritual heart disease, the profound sense of loneliness, isolation, alienation, and depression that used to provide us a sense of connection and community break down.

Old Biology – The Primacy of DNA

The old biology believes genes control life because the Central Dogma of the old biology explained DNA controlled its own replication and served as the blueprint for the body's proteins. The Central Dogma's assumption is that there is only one-way flow of information from DNA to RNA to protein. This implies the physical body and one's life experience cannot send information back and alter the DNA – or the old biology believes DNA controls one's life and you cannot influence your DNA! Or can we?

The New Biology – The Primacy of Environment

The basic components of a cell: the nucleus that contains genetic material, the energy-producing mitochondria, the protective membrane at the outside rim, and the cytoplasm in between. Dr. Lipton argues that in the belief of the new biology a cell's life is fundamentally controlled by the physical and energetic environment with only a small contribution by its genes – out comes the New Biology! Genes are simply molecular blueprints used in the construction of cells, tissues, and organs. The environment serves as a “contractor” who reads and engages those genetic blueprints and is ultimately responsible for the character of a cell's life. It is a single cell's “awareness” of the environment that primarily sets into motion the mechanisms of life. If a single cells are controlled by their awareness of the environment, so too are trillion-celled human beings. Just like a single cell, the character of our lives is determined not by our genes, but by our responses to the environmental signals that propel life. One could change the character of his life by changing his beliefs. The science-based path takes one from the position of “victim” of genes to “co-creator” of one's destiny. The science of the new biology is two-folds: The science of Signal Transduction focuses upon the bio-chemical pathways by which cells respond to environmental cues. Environmental signals can alter gene expression and thereby control cell fate, influence cell movement, control cell survival, or even sentence a cell to death. Signal transduction science recognizes that the fate and behavior of an organism is directly linked to its

perception of the environment – the character of our life is based upon how we perceive it. Epigenetics, literally means “control above the genes, is the science of how environment signals select, modify, and regulate gene activity. The activity of our genes is constantly being modified in response to life experiences. Our perceptions of life shape our biology. If many of the beliefs propelling our life are false and self-limiting, then we can be inspired to change those beliefs to illuminate the path to personal empowerment. No longer asking question:”If I could be anybody, who would I be?” The answer should be obvious – I want to be me!

The new science reveals that the information that controls biology starts with environmental signals that, in turn, control the activity of regulatory proteins on the DNA. Single-gene disorders affect less than 2% of the population. In the realm of human diseases, defective genes acting alone only account for about 2% of our total disease load. Therefore diseases such as diabetes, heart disease, and cancer are not the result of a single gene, but a complex interactions among multiple genes and environmental factors. When a gene product is needed, a signal from its environment, not an emergent property of the gene itself, activates expression of that gene. So when it comes to genetic control, it’s the environment!

The Human Genome Project

The belief in the supremacy of DNA’s role in life lead to the Human Genome Project, began in the 1980’s, to create a catalog of all the genes, which the scientists estimated the number to be around minimum of 120,000, present in humans. At the end of the Project and to the shock of researchers that the entire human genome consists of fewer than 25,000 genes – more than 80% of the presumed and required DNA does not exist! The human body, comprised of over 50 trillion cells, contains only 25,000 genes. As for a comparison – a thousand-celled microscopic round worm consists of about 24,000 genes! The fruit fly has about 15,000 genes, and rodents have roughly the same number of genes as humans! The Human Genome Project findings tell us that we can no longer use genes to explain

why humans are at the top of the evolutionary ladder and genes couldn't provide the control of our lives.

Epigenetics: The New Science of Self-Empowerment

Epigenetic research has established that DNA blueprints passed down through genes are not set in concrete at birth. Genes are not destiny! Environmental influences, including nutrition, stress, and emotions, can modify those genes without changing their basic blueprint. These modifications can be passed on to future generations. Duke University study published in the August 1, 2003 issue of Molecular and Cellular Biology found that an enriched environment can even override genetic mutations in mice. Only 5% of cancer patient and cardiovascular patients can attribute their disease directly to heredity. The malignancies in a significant number of cancer patients are derived from environmentally induced epigenetic alternations and not defective genes. Dr. Dean Ornish revealed that by just changing diet to lifestyle for 90 days, prostate cancer patients switched the activity of over 500 genes – the gene changes inhibited biological processes critical in the formation of tumors

The Magical Membrane

The membrane – the outer shell of the cell – is the true brain that controls cellular life. In the membrane it contains Integral Membrane Proteins (IMP), which can be subdivided into two functional groups: receptor proteins and effector proteins. Receptor IMPs are the cell's sense organs, the equivalent of our eyes, ears, nose, taste buds, they function as molecular "nano-antennas" tuned to respond to specific environmental signals. Effector IMPs engage in an appropriate, life-sustaining response. Together the receptor-effector protein pairs are a stimulus-response mechanism. The membrane's receptor proteins are the equivalent of sensory nerves, and the effector proteins are the equivalent of action-generating motor nerves. Together the receptor-effector complex acts as a switch, translating environmental signals into cellular behavior. Contrary to the conventional wisdom genes do not control their own activity. Instead it

is the membrane's proteins, operating in response to environmental signals picked up by the membrane's receptors, which control the "reading" of genes so that worn-out proteins can be replaced or new proteins can be created. The cell's operations are primarily molded by its interaction with the environment, not by its genetic code. Genes cannot pre-program a cell or organism's life because cell survival depends on the ability to dynamically adjust to an ever-changing environment. The membrane's function of interacting "intelligently" with the environment to produce behavior makes it the "true brain of the cell" – the "**membrain**"!

The Conclusion from the New Biology

The magical membrane puts the control of our lives not in the genetic roll of the dice at conception but in our own hands! We are the drivers of our own biology, just as I am the driver of my word processing program. We have the ability to edit the data we enter into our "biocomputer", just as surely as I can choose the words I type. When we understand how environmental variables control biology, we become masters of our fate, not victims of our genes!

Quotes from *The Biology of Belief* – Dr. Bruce Lipton

"We will, I believe, come together in a global community. The members of that enlightened community will recognize that we are made in the image of our environment, i.e., that we are divine, and that we have to operate, not in a survival of the fittest manner, but in a way supports everyone and everything on this planet."

"Imagine a population of trillions of individuals living under one roof in a state of perpetual happiness. Such community exists – it is called the healthy human body ... there are no left-out "homeless" cells in our bodies .. Our cellular communities are in profound disharmony causing some cells to withdraw from cooperating with the community. Cancer essentially represents homeless, jobless cells that are living off the other cells in the community."

“ ... we are spiritual beings who need love as much as we need food. But we won't get to the next evolutionary step by just thinking about it just as we can't change our children's and our lives simply by reading books. Join community of like-minded people who are working toward advancing human civilization by realizing Survival of the Most Loving is the only ethic that will ensure not only a healthy personal life but also a healthy planet ... Use the intelligence of cells to propel humanity one more rung up the evolutionary ladder where the most loving do more than just survive, they thrive.”

The Pendulum Has Swung (Comments from “Love & Survival”)

“We will have to marry our mystical intuitions about the nature of consciousness with scientific empiricism. The pendulum in our culture has swung so far to the side of mechanism and determinism and physicalism that one could predict emerging hunger - in medicine, and in our culture at large – for something more nourishing and more spiritual ...”

Quote from Dr. Dean Ornish on the Healing Power of Love and Intimacy

“I am not aware of any other factor in medicine – not diet, not smoking, not exercise, not stress, not genetics, not drugs, not surgery – that has a greater impact on our quality of life, incidence of illness, and premature death from all causes.”

Quote from Healthy at 100 – John Robbins

“Your connections with the significant people in your life – if they are positive and loving – can prevent stress-induced illness, greatly contribute to your health and healing, and add many years to your life.”

All We Need Is Love and Stay Connected (besides being a vegan and do moderate exercise)!