



Smart Life Forum

Dr. Len Saputo

Infrared Scanning and Photonics for Pain Relief and Healing

Cubberly Community Center
4000 Middlefield Road, Room H1, Palo Alto, California

November 6, 2003 at 7:00 pm

Raymond Francis

Raymond Francis, M.Sc., R.N.C., is a chemist, a registered nutrition consultant, and a graduate of MIT. Mr. Francis is an internationally recognized leader in the emerging field of optimal health maintenance. He is chairman and CEO of Beyond Health Corp., a supplier of cutting-edge health education and world-class, health-supporting products. He is the author of *Never Be Sick Again* and publisher of *Beyond Health News*. He is also host and producer of *The Beyond Health Show*, a syndicated radio talk show. Mr. Francis is also president of Health-e-America Foundation, which is dedicated to ending the epidemic of chronic disease in America by sponsoring "The Project to End Disease" (TPED).

William B. Grant

William Grant, PhD, was a senior research scientist in atmospheric sciences and optical and

laser remote sensing of the atmosphere, at SRI International, JPL and NASA. He is the author of over 60 articles in peer-reviewed journals. He is currently the Director of Sunlight, Nutrition and Health Research Center that is devoted to research, education and advocacy of changes in diet and lifestyle to prevent chronic diseases. He published the first paper linking diet to Alzheimer's disease and identifying the major risk factors. He has also published many other articles on dietary factors, including: sweeteners as a risk factor for heart disease; meat as a risk factor for the expression of rheumatoid arthritis; the role of animal products in generating insulin-like growth factor-1 (IGF-1) and its role as a risk for cancer; how vitamin D reduces the risks and mortality rates of many cancers and relationships to geographical areas. His current research projects include the role of vitamin D in reducing the risk and symptoms of multiple sclerosis and the roles of maternal vitamin D and alcohol consumption on fetal development.

Presentation #1

Ray Francis - Aging & Disease are Mistakes

Premature aging and the enormous pandemic of chronic disease afflicting our population are mistakes. They are mistakes because break-throughs in our understanding of the causes of disease give us the ability right now to end this epidemic. Complexity aside, all disease occurs at the molecular and cellular level, and we now know that virtually all disease has common causes and common solutions.

The next major advance in the health of the American people will be determined by what people are willing to do for themselves. However, we must teach them what to do. In his book *Never Be Sick Again*, he outlined a new model of health based on the revolutionary concept of one disease. This health model is so simple it can be taught to a child; yet so powerful it is reversing "incurable" diseases.

As varied and complex as diseases appear to be, all disease is the result of malfunctioning cells. Disease cannot happen unless cells malfunction so malfunctioning cells are the one disease. Modern medicine believes there are thousands of diseases, but viewing all diseases as one presents a profound opportunity—the opportunity to take the mystery out of disease and to

gain power over it.

There is only one disease and there are only two causes of disease: deficiency and toxicity. Cells lacking what they need or exposed to something harmful will malfunction. The thousands of different diseases we experience are merely the effects of thousands of combinations of deficiencies and toxicities acting through a combination of inherited genes, the environment, and our beliefs, thoughts, and emotions. Preventing or reversing disease is about preventing and reversing cellular malfunction.

As the amount of deficiency and toxicity in our society continues to increase; illnesses that used to affect only the elderly are now epidemic in younger people. Historically, cancer affected only one in a thousand. One hundred years ago it was 30 per thousand. Today, almost 500 per thousand will get cancer in their lifetime. Unless we get this chronic disease epidemic under control, the economic and social effects on our nation will be catastrophic.

Fortunately, we have the knowledge to end this epidemic. It is now possible to teach people how to prevent and reverse cellular malfunction by addressing its common causes. Let us examine a few of these causes starting with the sodium/potassium ratio in a cell.

Sodium and potassium are critical minerals, but they must be in balance. Our ancestors consumed low sodium, high-potassium diets. Their sodium potassium ratio was a healthy 1 to 4. Our current ratio is reversed and seriously imbalanced to an unhealthy 4 to 1, the result of too much salt (especially in processed foods) and too few fresh fruits and vegetables. Cells function as little batteries. They have an electrical charge created by the difference in the amount of potassium inside the cell and the amount of sodium outside. By changing the sodium/potassium ratio in our diet, we damage the “battery of life” and interfere with the body’s self-regulation and repair functions. For example, increasing the dietary sodium of laboratory animals will accelerate cancer metastasis. Preventing and reversing this common cause of disease is simple: eat less salt and eat more fresh fruits and vegetables. That’s how easy it is to achieve power over disease!

Another common denominator of disease is abnormal cellular pH. Normal cellular pH is 7.4; maintaining it is critical. If your cells become too acidic or too alkaline, this causes cellular malfunction and disease. Cancer is commonly a disease of too much acidity. Our excess acidity is coming from a diet rich in acid-forming foods such as sugar, white flour, milk products, and cola drinks. Colas combine sugar with phosphoric acid producing a powerful acidic effect. Cutting acid-forming foods from your diet, while eating a diet rich in alkaline foods such as fresh fruits and vegetables, and supplementing with minerals will work to balance pH and to prevent

and reverse disease. It's that easy!

Improperly constructed cell membranes are another common cause of disease. Each cell has a wall called the cell membrane. Everything going in or out of the cell has to pass through the membrane, a "gatekeeper" making sure only the right things go in and out. Improperly constructed cell membranes cause cellular malfunction and disease. To prevent and reverse disease, the billions of new cells we create every day must be constructed with the proper building materials. The vegetable and hydrogenated oils common to our diet are the wrong building materials. Historically the ratio of omega-6 to omega-3 oils in our diet was a healthy 1:1. Today it is an unhealthy 20:1. Fish and flaxseed oils are the preferred building materials. Cut out all processed oils and supplement with healthy oils. How easy it is!

Common to almost all disease is a process called inflammation. Inflammation involves free radicals, which damage cell membranes, DNA, and cellular machinery. This causes aging and disease, and to prevent or reverse these, it is necessary to prevent or reverse inflammation. Inflammation is caused primarily by eating the standard American diet. Sugar, white flour, milk products, farmed fish and meat, and processed oils are all pro-inflammatory. By consuming a pro-inflammatory diet, most of our population is now suffering from chronic inflammation and disease. Making matters worse, the American diet makes people fat. Two out of three Americans are overweight; fat cells produce a constant flood of inflammatory chemicals. To prevent and reverse inflammation, avoid inflammatory foods and eat a diet rich in fresh vegetables, fruits, and antioxidant supplements. It's that easy!

Tragically, children today do not have to wait to get sick. They are born sick. The deficiencies and toxicities of the parents affect the health of the fetus, thereby affecting that child's health for a lifetime and the health of grandchildren yet to come. In the early 20th century, Francis Pottenger, M.D. proved that eating processed foods affected the health of the children and grandchildren of parents eating such a diet. Today processed foods are the staple of our diet. That's why most of our children are born with abnormal brains and bodies, even if it's not apparent. Throughout human evolution, our brains grew larger. Now the brains of our children are getting smaller, and reduction in brain size has been accompanied by an epidemic of behavioral disorders, violence, suicides, and poor academic performance.

To maximize lifelong health, a growing fetus must be supplied with all the raw materials it needs, and it must be protected from toxins. Unfortunately, this rarely happens in America today. Instead, fetuses are commonly deficient in essential raw materials and are exposed to numerous toxins. Poor nutrition in utero and during infancy programs genes for the early onset of major chronic diseases.

Among the many toxins passed from mother to child and causing cellular malfunction in the unborn is mercury. Mercury, from dental fillings, vaccinations, and fish, interferes with enzymes that control how the fetal brain is structured. Even minor changes in brain structure will affect behavior, learning, higher-level thinking, and other brain functions, including control of the immune, hormonal, and digestive systems. Fluoridated water, toothpaste, and fluoride-contaminated foods pose an enormous health risk to the unborn, lowering their IQs and dumbing-down our population. Aspartame, an artificial sweetener found in diet drinks and foods, breaks down into a number of highly toxic chemicals that can damage fetal DNA, alter brain function, and contribute to cancer. To ensure the health of the unborn, we must supply a fetus with everything it needs and protect it from toxins.

No discussion of the causes of disease would be complete without addressing the contribution of modern medicine. Medical intervention is one of our leading causes of disease, and arguably our leading cause of death. Medicine's unscientific approach to health and disease has led to a series of epic blunders—x-rays, vaccinations, unnecessary surgery, and prescription drugs—with devastating effects on health. One of the greatest blunders of all has been antibiotics.

Antibiotics cause disease of every description by altering the microbial balance in the gastrointestinal tract, leading to a cascade of events with devastating effects. The gastrointestinal tract functions both as a brain and as a master endocrine gland that controls the immune system. Changing the balance of microorganisms in the gut alters its chemistry, affecting the nervous and immune systems. The resulting malfunctions contribute substantially to our epidemic of neurodegenerative and immune disorders. Abnormal gut flora inhibits digestion and the production and absorption of critical nutrients; it produces abnormal bacterial and fungal endotoxins, which interfere with protein synthesis and the production of energy, causing fatigue and cell death. Since most x-rays, vaccinations, surgeries, drugs and antibiotics are unnecessary, there being safer and better alternatives, it makes sense to avoid them. How easy it is!

Knowing that disease is the result of malfunctioning cells and understanding what makes them malfunction gives us the power to prevent and reverse aging and disease. By paying attention to providing our cells with what they need, avoiding toxins, and living a good lifestyle, we can live longer and put an end to our epidemic of chronic disease. Begin today to make these changes, and you will go beyond health as you know it.

Presentation # 2

Bill Grant - Importance of Vitamin D for Optimal Health

Vitamin D, the “sunshine vitamin,” is essential for optimal health. Not only does it help regulate the absorption and metabolism of minerals such as calcium, but it is now linked to protection against a growing list of both hard- and soft-tissue diseases.

The natural source of vitamin D is solar ultraviolet-B (UVB) radiation (290-315 nm). UVB interacts with cholesterol in the skin to produce previtamin D; with time and heat it is converted to 25 dihydroxy-vitamin D (25(OH) 2D). This is the circulating form of vitamin D. It can be converted in the kidneys and other organs to the active form, 1,25(OH) 2D), which is a hormone. Human skin pigmentation has adapted over periods of millennia to ambient autumnal solar UV radiation (UVR) levels as a compromise between transmitting enough UVB to generate vitamin D but not so much UVR that free radicals are generated in excess or too much folate is destroyed. Unfortunately, most European-Americans have British or German heritage (50° N); Palo Alto is near 37.5° N. Given that we live south of our ideal latitude, we have to be more careful when in the sun to avoid burning or even getting pink. But since the primary source of vitamin D for most Americans is solar UVB radiation, we really can't avoid the sun. In older times, people spent enough time out of doors to make adequate amounts of vitamin D – unless they lived at very high latitudes such as in Scandinavia, in which case fish provided the vitamin D, which they obtain from phytoplankton or zooplankton. Since the realization of the great importance of vitamin D for preventing soft-tissue diseases occurred primarily in the past decade, not enough has been done to inform people that they should be getting vitamin D from solar radiation in summer and supplements or other sources during winter or when living primarily indoors. Since vitamin D, which is fat soluble, lasts in the body only a month or so, wintertime serum vitamin D levels can be as low as half the summertime values in the northeastern U.S.

It was only in the 20th and early 21st centuries that vitamin D deficiency was linked to rickets, osteoporosis, falls, muscle pain, risk of cancer, multiple sclerosis, arthritis, etc., and the links are still being forged.

Dr. Grant's recent work has emphasized the role of solar UVB in reducing the risk of cancer. He got interested in the topic in 2000 after seeing the Atlas of Cancer Mortality Rates for the U.S.,

1950-69 and 1970-94 (<http://cancer.gov/atlasplus/new.html>). Mortality rates for many cancers were about twice as high in the northeast as in the southwest. After determining that dietary differences could not explain this distribution, he reviewed the pioneering work by Cedric and Frank Garland, who, in 1980, suggested that the geographic variation of colon cancer in the U.S. was due to solar UVB production of vitamin D. When he started his work, vitamin D had been shown to reduce the risk of four cancers: breast, colon, ovarian, and prostate. Working at NASA at the time, he knew about satellite instrument measurements of solar UVB hitting the Earth's surface, and saw that the July UVB doses were about twice as high in the southwest as in the northeast, opposite to that of the cancer mortality rates. He posed 2 questions: how many cancers does vitamin D affect? and how many Americans died prematurely from cancer annually due to insufficient UVB/vitamin D?

To address these questions, he employed the ecologic approach. In this approach, populations defined geographically are treated as entities, and population average values for disease outcome and risk and risk reduction factors are combined in regression (statistical) analyses. His first results, published in the journal *Cancer* in 2002, reported that 13 types of cancer were affected by vitamin D and that about 20,000 Americans died annually from cancer due to insufficient UVB/vitamin D. This study was criticized for omitting risk factors, so he extended the analysis by adding data for alcohol consumption, Hispanic heritage, poverty, smoking, and urban residence. He was able to confirm all generally accepted links for these factors for about two dozen types of cancer. This analysis also identified urban residence as an additional risk factor for cancer in that those who live in urban areas receive lower UVB doses than those living in rural areas. The new results indicate that 18 cancers are affected by vitamin D and that 45,000 Americans died annually from cancer due to insufficient UVB/vitamin D. This work is currently under review at a major medical journal.

Another disease for which vitamin D plays an important risk reduction role is multiple sclerosis (MS). He is writing a manuscript showing that the very strong increase in MS with latitude in Australia, Europe, and the U.S. is due to low vitamin D in winter, a time when it is very useful in fighting the adverse effects to the central nervous system of infections. He estimates that more than half of those with MS in the U.S. would not have it if they had adequate vitamin D levels at the time of infectious disease or, more recently vaccination. Vitamin D is also useful in treating those with MS, with two studies showing that the reduction in lesions in summer is due to UVB.

The "normal" vitamin D level had been considered to be 20 ng/ml (50 nmol/L) and the recommended intake is 200 I.U./day up to 50 years, 400 I.U./day for adults aged 51-70 years, and 600 I.U./day for those aged 71 years and older. However, these values were based on bone

health and are very likely to be too low for optimal health. Robert Heaney, Creighton University, is quoted as saying that the lower end of normal should be 32 ng/ml (80 nmol/L). The optimal level may be as high as 70 ng/ml (175 nmol/L). Food sources, both natural, such as fish, and fortified, such as milk and orange juice, are other ways to obtain vitamin D. However, there are many problems associated with relying on food for one's primary vitamin D source. First, fish are often contaminated with mercury and other toxins, and many fish stocks are being rapidly depleted. Second, many people are lactose intolerant, and cow's milk is not necessarily a good food source for people of any age. Orange juice has too much sugar. My recent review with Cedric Garland found that dietary sources of vitamin D are inadequate to provide adequate protection against colorectal cancer, although vitamin D from all sources can be. Supplements are another good source of vitamin D.

In his opinion, artificial UV lamps that mimic the solar UV radiation (UVR) spectrum reaching the Earth's surface (3-5% UVB), such as found in today's indoor tanning facilities, should be considered another useful source of vitamin D. The normal reason for indoor tanning, production of darker skin pigmentation, is nature's way of protecting against UV radiation. When one is careful not to partake of UVR to the point of burning, or tanning to excess over periods of years, the risk of skin cancer is minimal, and the health benefits greatly outweigh the possible risks. It also helps to eat a low-fat diet high in fruits, vegetables, and antioxidants.

If one does want to take 1000 I.U./day of vitamin D, he would strongly recommend testing serum 25(OH) 2D. Problems with too much vitamin D include pulling calcium out of the bones and increased risk of prostate cancer.

So, feel free to enjoy your time in the sun, develop that tan, build up your level of vitamin D, and don't be afraid of your shadow as the dermatologists want you to believe.

References

Abstracts of papers on ultraviolet radiation and vitamin D can be found at - www.ncbi.nlm.nih.gov/entrez/query.fcgi

And more information on the health benefits of vitamin D can be found at www.sunarc.org



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