



Smart Life Forum

Frank Shallenberger, MD, HMD, ABAAM

Mitochondrial Functional Analysis & Therapy in Cancer

Thursday, October 19, 2006

7:00 PM

Cubberly Community Center

4000 Middlefield Road, Room H1, Palo Alto, California



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Future Speakers:

- **November 16** - Harry Friendman, D.O.
Understanding Osteopathy
- **January 19** - Robert Lustig
What's Behind the Obesity Epidemic

Foundation for Mind Being Research (FMBR) Upcoming Meeting

October 27, 2006, [Estara](#), a sound healing educator and sacred dance artist, will discuss the healing benefits of sound. See their website www.fmbr.org for more information.

Mini-Presentation

Richard Nisenbaum will teach a short Feldenkrais lesson that people can do in five minutes and then discuss some of the theory behind the [Feldenkrais Method](#) and practical applications.

Meet Frank Shallenberger

Frank Shallenberger, MD has devoted his professional career to understanding the fundamentals of what keeps us well. To this end, he has used an approach in his medical practice for more than twenty-five years that integrates the best of alternative medicine with the best of conventional medicine.

He is a pioneer in the clinical application of oxidative medicine, a new discipline that emphasizes the profound importance of oxygen and energy production in health and longevity. Using a revolutionary technology known as Bio-Energy Testing, he is able to measure the mitochondrial function of patients, and improve it to more youthful levels.

Shallenberger is the founder and medical director of The Nevada Center of Alternative and Anti-Aging Medicine in Carson City, Nevada, a facility that attracts patients from all over the country. He is board certified in Anti-Aging Medicine, and has served as a Clinical Instructor in Family Medicine at the University of California School of Medicine in Davis. In 2001 he was honored to be a speaker in Monte Carlo at the First International Learning Conference on Anti-Aging Medicine, a global gathering of health professionals interested in applying anti-aging strategies.

Dr. Shallenberger is also an expert on mitochondrial function and human energy production. He has authored two books. *Bursting With Energy* describes his work with

measuring and improving mitochondrial function, preventing disease, increasing energy levels, and slowing aging. The Type 2 Diabetes Breakthrough, just recently released, describes how type two diabetes can be completely prevented and best treated by optimizing mitochondrial function.

Shallenberger is the father of four children and grandfather to three (with one on the way). His extended family includes a horse, a flock of sheep, two llamas, and ten chickens. He is an avid backpacker and cyclist. He has won numerous cycling events, and garnered silver medals in his age bracket in the Nevada State Mountain Bike Championship Series and the Northern California Time Trials. He aims to keep himself and his patients young and energetic for a long time.

Main Presentation

This talk will discuss the evidence in the literature that cancer primarily occurs as a result of poor mitochondrial function. The evidence shows that cancer simply cannot develop on a cellular level in cells with good mitochondrial function. Therefore to prevent and to treat cancer, the primary focus must be on optimizing mitochondrial function. The talk will discuss how to do that.

There are 3 essentials to the comprehensive treatment of cancer. Unfortunately modern medicine only recognizes one. That is why the conventional approach is so limited in success, and why the war on cancer is not being won. The three essentials of treatment are: 1. Treat the cancer. 2. Treat the causes. 3. Treat the patient.

Treating

Insulin potentiation therapy is an excellent way of delivering chemo-therapeutic drugs to cancer cells in doses approximately one tenth of those commonly used. Certain “nutraceuticals” (nutrients and botanicals), intravenous hydrogen peroxide with DMSO, and certain hormones including DES, melatonin, and HGH can be used in several cancer types to slow cell growth.

Treat the Causes

Otto Warburg demonstrated in the early twentieth century that cancer was a mitochondrial deficiency disease. Therefore the primary cause of all cancers is decreased mitochondrial function.

In an article entitled “Mitochondria and cancer: Warburg addressed” [1], the authors discuss the fact that cancer cells generate excessive lactate in the presence of oxygen. The two causative factors for this are increased shift from fat to glucose metabolism, and decreased mitochondrial function. Both are common events even in the young and increase in incidence with age. These two factors cause increased free radical production (ROS) which mutagenize nuclear proto-oncogenes (initiation) and drive nuclear replication (promotion), resulting in cancer.

Since decreasing mitochondrial function causes cancer, it is not too hard to realize that increasing mitochondrial function inhibits cancer. This fact is pointed out in an article entitled, “Induction of oxidative metabolism by mitochondrial frataxin inhibits cancer growth: Otto Warburg revisited”, in which cancer cells are described as exhibiting multiple alterations in mitochondrial content, structure, function, and activity. [2]

In this study the researchers over-expressed the protein frataxin in several colon cancer cell lines causing them to have increased oxidative metabolism. The result? When these cancers were transplanted into animals, they failed to grow.

How common is decreased mitochondrial function? Very common. A condition referred to as Early Onset Mitochondrial Dysfunction (EOMD) is described which refers to a measurable decrease in aerobic ATP production, i.e. mitochondrial function. EOMD commonly occurs in the young and increases in incidence with age. EOMD is different from mitochondrial decay. It is reversible, it occurs long before mitochondrial decay, and long before any signs of aging or degenerative disease. EOMD is detectable only with mitochondrial functional analysis.

How common is EOMD? 50 subjects were randomly selected as they presented to clinics in Carson City, Los Angeles, Grand Junction, and Singapore. All subjects were between 20-40 years old, asymptomatic, and health conscious. 54% (27) had normal mitochondrial function. 46% (23) had EOMD.

EOMD is caused by several insidious events including: a shift away from fat metabolism towards glucose metabolism, lack of the electron carrier coenzyme Q10, lack of oxygen, decreased availability of AMP, and excessive membrane leakage = toxicity.

How is EOMD Diagnosed?

Measuring mitochondrial function can easily and safely be determined in the average clinic setting using the principles of pulmonary gas analysis. ATP production is directly correlated with O₂ to CO₂ conversion. Substrate (fat vs. glucose) metabolism is directly correlated with O₂ to CO₂ conversion. Anaerobic metabolism is directly correlated with O₂ to CO₂ conversion. A description of the testing process and how it works can be seen by logging on to the following free web seminar: www.vrp.com/webinar/archive/ .

Common therapies to improve mitochondrial function include: improving biological methylation, detoxification, improving circulation and pulmonary function, proper exercise, a diet high in fat (40% - monounsaturated fat and vegetation fed saturated animal fat), high protein (35%), high fiber (vegetables), low sugar/starch (very little fruit, tubers, or sugars), chelation therapy where needed, and oxidation therapy (ozone, UVB, or H₂O₂)

Treat the Patient

It takes a lot of mental, emotional, and physical energy to cure a disease, especially a disease as difficult as cancer. Success ultimately depends on being able to kill the cancer while maintaining, indeed improving, the overall strength and energy of the patient. Conventional medicine does just the opposite of this. Conventional therapies weaken the patient and disrupt what little is left of an already failing immune system. The focus on treatment here is to provide therapies that increase the overall strength and vitality of the patient.

Heading the list are mitochondrial enhancement therapies, adrenal therapy, nutritional therapy, hormone replacement, constitutional homeopathics, proper exercise, and adequate rest.

References:


- "Mitochondria and cancer: Warburg addressed," Wallace, DC; Cold Spring Harbor Symp. Quant. Biol. 2005; 70: 363-74.
- Schulz TJ, Thierbach R, et al. Induction of oxidative metabolism by mitochondrial frataxin inhibits cancer growth: Otto Warburg revisited. J Biol Chem. 2006 Jan 13;281(2):977-81.



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