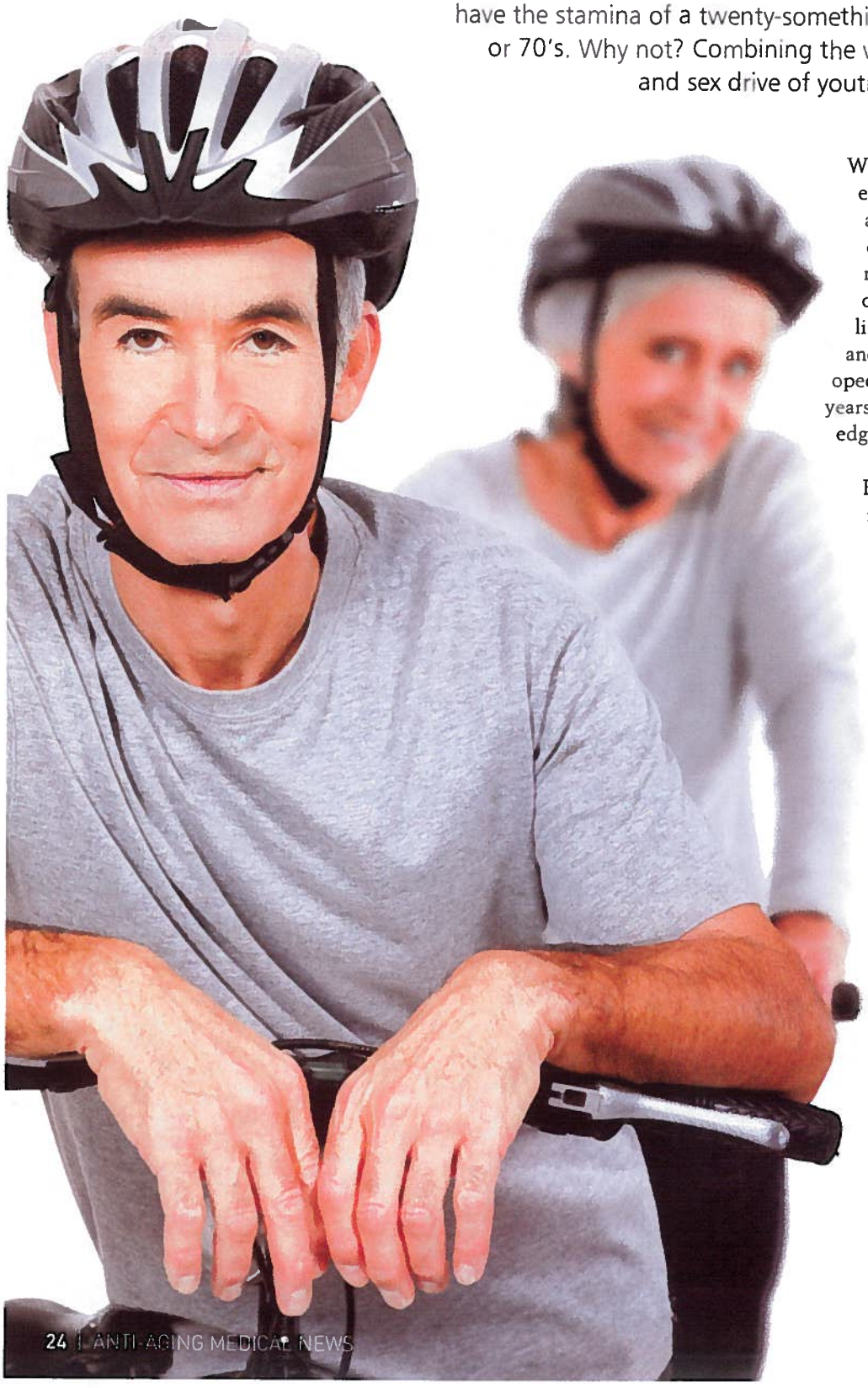
How to Grow Bigger Potatoes, Slow Aging and Cure Infertility

(Der duemmste Bauer erntet die groessten Kartoffeln)

By: Roger Davis Deutsch

The baby boomers are aging and nearly all of them want to live forever and have the stamina of a twenty-something year old, well into their 50's, 60's or 70's. Why not? Combining the wisdom of age with the energy, vigor and sex drive of youth represents the best of both worlds.



We live in a time of rapid scientific discovery, and, there are no shortages of ideas for achieving our anti-aging aspirations. We've decoded the human genome, can perform micro-surgeries, we understand the physiology of aging. We know about the Hayflick limitation, optimizing circadian, monthly and seasonal hormone levels, and have developed highly sophisticated procedures for taking years off appearances. Why not put this knowledge to work to make life better?

But, as any sensitive person knows, no man is an island, and, this log rhythmic growth in knowledge seems to be accompanied by a boom in the world's population. Lest we suffer a Malthusian meltdown we need to use this knowledge for the benefit of man, and we need to do so fairly quickly.

How should we apply the knowledge of genomics? In the June 2012 issue of *ADVANCE/LABORATORY*, Michael H. Creer, M.D., Prof. of Pathology at Penn State, in an article entitled, *Personalized Medicine*, reminds us of the stark limitations of these capabilities:

"As the vast majority of human diseases are polygenic and progress by mechanisms which are profoundly influenced by interactions with the environment, we will also need to investigate the complex network of multiple gene interactions, further define the nature and regulation of epigenetic change and advance our understanding of environmental forces that influence the genotype-phenotype relationship to fully understand the mechanisms of human disease at the molecular level and obtain maximum benefit from the human genome project.

...let's not throw our medical and scientific knowledge out the window; but, restore the science and art of medicine to a more balanced approach.

....Personalized medicine applications for disease risk assessment is a rapidly expanding application; however, the relative merits of genotype risk assessment based on gene sequencing versus phenotype risk assessment based on conventional biomarkers analysis remains to be demonstrated in most cases."

Not only are the benefits of genomic sciences slow to help us with the problems of aging, as a practical matter, it's getting tough to support the world's burgeoning population boom. It takes increasing quantities of food. Does genomics help us there?

Let's say we want to grow bigger potatoes to help feed and nourish the world's population. Do we call the local Monsanto rep to see if the company has created a genetically modified seed to make potatoes grow bigger? Dubious acclamation as that may be, Monsanto, is, after all, the world's leader in genetically modified crops. However, probably not a good idea, as many studies have demonstrated the devastating health effects of what our European cousins call, "Frankenfoods". (Jeffrey Smith has highlighted numerous studies in his several books, such as, *Genetic Roulette.*)

If genomics cannot reverse aging and it cannot even help us with feeding the world, then what?

It may be time for a more back to the land approach. According to rural German folk tradition, "the dumbest farmers grow the biggest potatoes". *Der duemmste bauer erntet die groessten kartoffeln.* Sometimes less analytical, rather than "cutting edge "scientific approaches, win the day. Maybe it's not so much naiveté as it is simplicity; letting Nature do its thing. Therefore, let's not throw our medical and scientific knowledge out the window; but, restore the science and art of medicine to a more balanced approach. The point is, we need to know when to modify Nature and when to strive to attune ourselves more closely with it. Maybe a blending of age old traditional medicine and modern scientific technique is in order. Such is well in keeping with the A4M's/Univ. of South Florida master's degree program in metabolic and nutritional medicine.

This is not a new concept, however, consider:

"The doctor of the future will give no medicine, but will instruct his patient in the care of the human frame, in diet, and in the cause and prevention of disease." ~ Thomas Edison, 1902

"That which can be treated by diet, should be treated by Diet." Maimonides, 12th century physician and religious scholar.

And the oldest authoritative body of medical knowledge, the Ayur Veda:

"When diet is wrong the medicine won't work. When diet is right, medicine is not necessary."

Technology has also brought another, "benefit." We can now eat foods grown in any part of the world, in any season, preserved and enhanced by the many additives; emulsifiers, coloring agents, stabilizers, texture modifiers, and so forth. Unlike our ancestors, we can eat pretty much what we want, when we want, and whatever quantity we want. However, that may not be so healthful.

Our genes take time to adapt and have not yet been conditioned to assimilate so many novel food exposures. The result: chronic immune activation, inflammation, degeneration of body tissue. The very opposite of what we desire.

Can we avoid this problem by, "personalizing" everyone's diet? After all, we now, approximately 10 years ago, have mapped out our entire genome. However, as Prof. Creer has so eloquently expressed, epigenetic phenomena are so far reaching that a clear genetic indication of genetic compatibility of foods is elusive. In fact, it is been stated by the head of America's premier nutrigenomic institution, at U.C. Davis, that rarely, approximately 1 out of 100,

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do nutrient-gene interaction studies triplicate. (Hirschhorn et al. Genet. Med. 4:45-61.)

All this highlights the need for a reliable phenomenological (i.e., conventional biomarker) method for determining compatibility of foods on a personalized basis. Such a method actually does exist and is being implemented quite successfully by many anti-aging practitioners.

Let's first look at the evidence for the notion that incompatible foods cause degeneration and aging? Let's start at the beginning; or, perhaps, slightly before the beginning. It might seem oddly ironic that now, while experiencing a huge population boom, we are also seeing the highest prevalence of infertility of all times. Nature must be trying to tell us something.

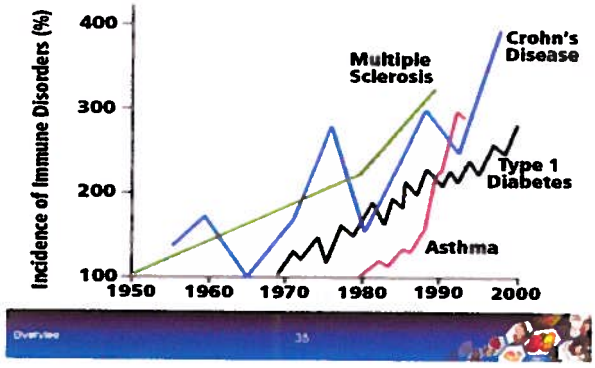
In a paper entitled, *Should Seminal Oxidative Stress Measurement be Offered Routinely to Men Presenting for Infertility Evaluation?* Drs. Deepinder F, Cocuzza M, Agarwal A. from the Center for Reproductive Medicine, Glickman Urological and Kidney Institute, Cleveland Clinic, (Endocr Pract. 2008 May-Jun;14(4):484-91) report, ".....Research conducted during the last decade has provided growing support for the concept that excessive production of reactive oxygen species (ROS) is related to abnormal semen parameters and sperm damage."

In females, "... Elevation of reactive oxygen generation in pre-eclampsia may highlight a role for neutrophils in the oxidative stress and pathophysiology of this disease." According to Drs. Crocker IP, Wellings RP, Fletcher J, Baker PN. from The Medical Research Centre, Nottingham University, Nottingham City Hospital NHS Trust, UK. (Br J Obstet Gynaecol. 1999 Aug;106(8):822-8).

Similarly, in a paper, *Macrophage Activity in Semen is Significantly Correlated with Sperm Quality in Infertile Men.* Drs. Tremellen K, Tunc O. at the Research Centre for Reproductive Health, Discipline of Obstetrics and Gynaecology, School of Paediatrics and Reproductive Health, University of Adelaide, Adelaide, SA, Australia.(Int J Androl. 2010 Jan 28.) find, "The presence of leucocytes within semen has the potential to impair sperm function. Neutrophils and macrophages make up 95% of seminal leucocytes, with both having the ability to damage sperm via the generation of reactive oxygen species, proteases and the induction of apoptosis....We were able to confirm for the first time that seminal plasma does indeed contain neopterin and that the levels of this macrophage activity marker are threefold higher in infertile than fertile men."

In his book, *A Means to an End; the Biological Basis of Aging,* Prof. (Immunology) Emeritus, Wm. R. Clark, from U.C.L.A. explains that the body's major source of free radicals is from activated phagocytes and that the damage caused by these reactive oxygen species is far reaching; extending to all bodily tissues and DNA, both nucleic and mitochondrial. "Phagocytes purposely generate high levels of oxygen radicals, which they store in tightly sealed intracellular compartments.....This is also a major source of damage in chronic inflammatory autoimmune reactions such as rheumatoid arthritis, and can lead to serious tissue loss." Is the Standard America Diet (SAD) causing the rise in autoimmunity?

From: Bach JF. The effect of infections on susceptibility to autoimmune and allergic diseases. *N Engl J Med. Sep 2002;347(12):911-920*



"In acute inflammation, the initial leukocytes that are infiltrated are mainly neutrophils...neutrophils die in situ by apoptosis.... The apopototoic neutrophils are cleaned by macrophage phagocytes." However, if there is an overwhelming of the monocyte-macrophage system, and/or, an immune deficiency (such as a C1q deficiency) the excess DNA in the circulation may itself become immunogenic..."Further, the dysregulation of the phagocytosis may be critical to the pathogenesis of a variety of autoimmune diseases, including RA and systemic lupus erythematosus (SLE)" according to Drs. Hongrao Liu, MD, PhD, and Richard M. Pope, MD, Div. of Rheumatology , Dept. of Medicine, Feinberg School

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of Medicine. The Veteran's Affairs Med. Center, Chicago, IL (*Rheumatic Diseases Clinics of N. America*, Vol. 30, No. 1, Feb 2004).

Cardiovascular disease as well as dementia represent other diseases of aging that are also mediated by the free radicals and toxic mediators generated by activated granulocytes. "Oxidative lesions are a hallmark of Alzheimer's & Parkinson's. Circulating neutrophils are the most powerful sources of reactive oxygen species...Significantly increased oxidative stress levels were observed in patients' group..." writes Drs. Vitte J, Michel BF, and Bongrand Gastaut JL. from the P, Laboratoire d'Immunologie, INSERM Hopital Sainte-Marguerite, Marseille. J Clin (Immunol. 2004 Nov; 24(6):683-92). Their paper is aptly entitled, *Oxidative Stress Levels in Circulating Neutrophils is Linked to Neurodegenerative Diseases.*

And, in a paper entitled, *Alpha(4)-Integrin Mediates Neutrophil-Induced Free Radical Injury to Cardiac Myocytes* "...Circulating neutrophils adhere to cardiac myocytes and cause cellular injury... emigrated PMNs have the capacity to injure cardio myocytes." According to Poon BY, Ward CA, Cooper CB, Giles (Immunology Research Group, University of Calgary, Calgary, Alberta T2N 1N4, Canada. J Cell Biol. 2001 Mar 5;152(5):857-66).

Further, in a paper from Chinese researchers, entitled, *"Changes of Neutrophil Myeloperoxidase in Coronary Circulation Among Patients with Acute Coronary Syndrome*, Li L, Zhang Y, Chen YG, Li GS, Wang Y, Ma X, Li JF, Zhong M, Zhang W. from the Key Laboratory of Cardiovascular Remodeling and Function Research, Chinese Ministry of Education and Public Health, Department of Cardiology, Qilu Hospital of Shandong University, Jinan 250012, China, it's stated that, "MPO is a better marker for inflammation of the local plaques. It may be one of the mechanisms that MPO induces the transforming from LDL to ox-LDL in plaques vulnerability."

The evidence is strong and it seems every day new associations between chronic activation, particularly of the innate branch of the immune system, and diseases of aging, are reported.

The "conventional biomarker" test for determining which foods act as triggers of the innate immune system has been well documented. It's known as the Alcat test and scientific validation studies can be viewed at www.Alcat.com. It involves a procedure whereby peripheral leukocytes, sent overnight to the lab, are incubated in isotonic buffers, with a battery of individual potential immune irritants, consisting of foods, chemicals, molds, medicinal herbs, environmental chemicals and food additives. Changes in cell size and number are determined using the impedance method of measurement. Cellular changes so measured have been associated with clinical symptoms of disease and metabolic imbalance.

Application of this method to construct a personalized diet for patients has demonstrated astounding benefits to patients experiencing autoimmune disorders, such as MS; migraine, arthritis, obesity, fatigue, skin, GI and respiratory disorders, mood disorders and other maladies. And them ain't no small potatoes.

Roger Davis Deutsch is co-author of the book series, *Your Hidden Food Allergies are Making You Fat.* He is a co-developer of the Alcat test and serves as CEO of Cell Science Systems, Corp. in Deerfield Beach, FL; and, Alcat Europe, in Potsdam, Germany. He may be contacted at RD@Alcat.com.