



August 5th & 6th, 2011
Ancestral Health Symposium (AHS)

Dear AHS Attendee,

Thanks for supporting the mission of “Ancestry” by attending and participating in the 2011 Ancestral Health Symposium (AHS). Ancestry is the 501(c)(3) nonprofit public benefit charity that volunteers have set up to organize the Ancestral Health Symposium and the Ancestral Health Society. Online, you can learn more about Ancestry at ancestryfoundation.org.

If you feel compelled to support Ancestry’s mission further, donations can be made online at ancestryfoundation.org by clicking on the PayPal “Donate” button, or by sending checks payable to “Ancestry” by mail to the following address:

3857 El Ricon Way
Sacramento, CA 95864

Donations to Ancestry will be used to organize future Ancestral Health Symposia and to support the development of the Ancestral Health Society and its activities, which will involve the creation of an academic journal for Ancestral Health and Evolutionary Medicine.

After the event, please visit the following Web sites to stay in touch:

Home: AncestryFoundation.org
Facebook: facebook.com/AncestralHealthSymposium

Feel free to reach out to The Ancestral Health Team via e-mail:

ancestralhealth@gmail.com

We hope that you enjoy the event!

To good health,

The Ancestral Health Team

&

The Ancestry Board Members:

Brian Geremia (President), Nate Rosenberg (Vice President), Michal Naisteter (Secretary), Brent Pottenger (Treasurer), Aaron Blaisdell, Megan Geremia, Giovanni Carmazzi, Richard Jacobson, Jesse Maddex, and Joe Sobolewski

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Ancestral Health Anthology (AHA!)

A compilation of presentation titles, abstracts, essays, and poems to commemorate the 2011 Ancestral Health Symposium (AHS)

TITLE: Ancestral Health Society (AHS)
By Aaron Blaisdell, PhD

“Live long and prosper” Spock, Star Trek.

We all desire long, healthy lives. How can we achieve this goal? By understanding and following the three pillars of ancestral health.

1) Human evolution and evolutionary biology provide the theoretical perspective to frame the right questions about human design and function. How did our evolutionary past shape the biochemistries and physiologies we bear today? What is the environmental niche in which we thrive?

2) Scientific investigation provides the conceptual, methodological, and technological tools by which to explore and discover the causal systems responsible for health and wellness, on the one hand, and disease and dysfunction, on the other. The scientific method allows us to carefully, painstakingly, and incrementally discern the answers to the clues left by our ancestors, our contemporary outgroups and relatives, and in our own bodies and societies. We slowly but steadily build the human causal map; a map that will allow us to chart a course towards health and wellbeing.

3) Each individual, as a result of the intersection of his or her phylogenetic, epigenetic, and ontogenetic history, is unique (like snowflakes). Thus, personalized health and wellness requires applying pillars 1 and 2 to the n=1 journey to individual discovery. We must continually tinker and observe, optimally with the aid of our life coaches: families, friends, doctors, and health practitioners. Our systems, based on physiology, are nonlinear, and thus there is no final answer. But with careful planning and a respect for the data, the improvements and progress will far outweigh the failures and setbacks. Humility is wisdom. We can learn, and remember, and forget. This third pillar is the loneliest journey, but there is no need to go it alone. Community is not only important; it is fundamental.

The Ancestral Health Society (AHS) was formed to help modern humans achieve this goal to live long and prosper by uniting these three pillars under a scientific and practical framework that can be translated to each individual human living on the planet. While we focus primarily on the human species, *Homo sapiens*, this approach applies to every species. We are all life. The laws of physics, chemistry, and biology apply everywhere, all the time. Let's learn them and harness them for our betterment and for the betterment of our families, society, and planet!

TITLE: Ancestral health: past, present, and future
By S. Boyd Eaton, MD

ABSTRACT: Ancestral health is a new, promising area of scientific endeavor based on the premise that ancient genes and contemporary lives are discordant. The corollary is that health standards and recommendations should be directed toward reestablishing the biological parameters which existed during the late Stone Age. Our current tenets are based on the efforts of many in the past. Their work can be advanced by adducing further theoretical and experimental support for the ancestral health paradigm: that reversion toward the relevant essentials of Paleolithic experience is the surest path towards physical health for all. In actuality the whole world is discordant with contemporary circumstances so we need to broaden our horizons beyond mere individual well-being. Overpopulation, gender inequality, environmental degradation, ethnic antipathy, and socioeconomic inequity are for Earth's biome the equivalents of cancer, diabetes, and coronary disease for individual humans. Their redress might be best achieved by applying a more encompassing Paleolithic paradigm—an attempt to reclaim the social, ecological, and demographic conditions of our ancestral Eden.

TITLE: Origins and evolution of the western human diet: health implications for the 21st century
By Loren Cordain, PhD

ABSTRACT: There is growing awareness that the profound changes in the environment (e.g. in diet and other lifestyle conditions) that began with the introduction of agriculture and animal husbandry approximately 10,000 years ago occurred too recently on an evolutionary timescale for the human genome to adjust. In conjunction with this discordance between our ancient, genetically-determined biology and the nutritional, cultural and activity patterns of contemporary western populations, many of the so-called diseases of civilization have emerged. In particular, food staples and food processing procedures introduced during the Neolithic and Industrial era have fundamentally altered seven crucial nutritional characteristics of ancestral hominin diets: 1) glycemic load, 2) fatty acid composition, 3) macronutrient composition, 4) micronutrient density, 5) acid/base balance, 6) sodium/potassium ratio, and 7) fiber content. In the U.S. and most western countries, diet-related chronic diseases represent the single largest cause of morbidity and mortality. These diseases are epidemic in contemporary, westernized populations and typically afflict 50-65 % of the adult population, yet are rare or non-existent in hunter-gatherers and other less westernized people. Although both scientists and lay people alike may frequently identify a single dietary element as the cause of chronic disease (e.g. saturated fat causes heart disease, or salt causes high blood pressure), evidence gleaned over the past three decades now indicates that virtually all so-called diseases of civilization have multifactorial dietary elements that underlie their etiology, along with other environmental agents and genetic susceptibility. Coronary heart disease, for instance, does not arise simply from excessive saturated fat in the diet, but rather from a complex interaction of multiple nutritional factors directly linked to the excessive consumption of novel Neolithic and Industrial era foods (dairy products, cereals, refined cereals, refined sugars, refined vegetable oils, fatty meats, salt and combinations of these foods). These foods, in turn, adversely influence proximate nutritional factors which universally underlie or exacerbate virtually all chronic diseases of civilization: 1) glycemic load, 2) fatty acid composition, 3) macronutrient composition, 4) micronutrient density, 5) acid/base balance, 6) sodium/potassium ratio, and 7) fiber content. However, the ultimate factor underlying diseases of civilization is collision of our ancient genome with the new conditions of life in affluent nations including the nutritional qualities of recently introduced foods.

TITLE: The effects of cultural evolution on human health
By Mark Cohen, PhD

TITLE: Food and western disease
By Staffan Lindeberg, MD, PhD

ABSTRACT: Traditional populations with food habits similar to those of prehistoric humans may provide important clues to healthy foods for modern humans. Therefore, in a cross-sectional survey we studied some of the disease pattern of the Trobriand Islanders, Papua New Guinea in 1990. We found a striking absence of ischemic heart disease, stroke, hypertension, type-2 diabetes and the metabolic syndrome. This may be related both to regular physical activity and an 'ancestral-like' food pattern largely based on starchy root vegetables, fruit, fish and coconut. The high carbohydrate intake will be discussed in connection with recent evidence from dietary intervention trials in Westerners. It will be proposed that food choice is more important than counting calories or macronutrients for long-term health.

TITLE: Atheroma and paleo diet: a cardiovascular surgeon's perspective
By Guy-André Pelouze, MD

ABSTRACT: Atheroma is a chronic disease of the arterial tree which evolution leads to severe and potentially lethal ischemic events in different organs (brain, heart, digestive tract, kidneys and limbs). For complex and largely ignored reasons the retention of lipid particles in the subendothelial space of arteries initiates a local humoral and cellular response which progressively leads to a plaque formation by recruitment of systemic macrophages and multiplication of smooth muscle cells of the artery. This plaque formation is followed by expansion/rupture/calcification and eventually causes thrombosis of the vessel. Diet connection with health was first formulated by Hippocrates (360 BC), connection with atheroma suspected by Keys (1904-2004) and later by Ornish in 1990... They popularised Mediterranean diet and vegan style diet but the recognition of diet as a major part of treatment of atheroma occurred still later. Now it is largely admitted in the literature that atheroma is diet dependent but also paradoxically that it's a ""natural"" phenomenon in the arterial tree especially with aging. Paleo diet is a rather new topic in medicine although Boyd Eaton described the hypothesis of an evolutionary discordance between industrial diet and our genomics in the NEJM in 1989! Since numerous studies increased our knowledge and shed a very transparent light on what ate our ancestors. Aside the fact that they ate raw fruits, vegetables, meat and fish, the nutrients of these foods were quite different from those present in the products we eat today. We describe the huge differences between paleo food and industrial food and the consequences on human metabolism. Both archeo-anthropology and present studies of

populations consuming paleo diets revealed strong evidence about the absence of atheroma in the paleo era despite the fact that life span was shorter. Clinical trials of diets with selected characteristics of paleodiet and also paleodiet trials in humans suggest that paleodiet is far more efficient in preventing atheroma than conventional AHA recommendations or even Mediterranean diet. We conclude that paleodiet should be more extensively studied despite the fact that at the present time no industrial lobby could support these studies, that involving agrobusiness in the production of paleo food is another key issue for public health and eventually that public health policies should take in account paleo diet studies in the body of evidence that roots their recommendations about the prevention of atheroma both primary and secondary, alone or in association with efficient drugs.

COMMEMORATIVE POEM:

"Paleo Life instead of a Life...in"

Instead of delicious raw butter margarin
For bad cholesterol statin
For thick blood aspirin
For diabetes metformin
For high blood pressure nicardipin
As I stopped smoking a full patch of nicotin
And tomorrow a nightmare, imagine!
Don't be foolish!
Take fresh spinach and fatty fish
Roquette, nuts, kiwis and have a large meal
Pour your glass with red wine and make a deal
After a snap I will go running
Work a bit and get light dining
Smoke a big Havana once a year
And forget doctors forever!

TITLE: The paleo solution
By Robb Wolf

ABSTRACT: Brief introduction asking the question "Does the paleo concept 'work'?" If so, how and for whom? Clinical examples of nutrition, exercise and lifestyle interventions. Discussion of memes and complex human systems. Why the Paleo concept is not a fad.

TITLE: Ancestral nutrition: an alternative approach
By Don Matesz, M.A., M.S.

ABSTRACT: For about 65 million years our primate ancestors consumed plant-dominated diets. Humans developed the technological ability to consume meat-based diets only about 2 million years ago, so at least 98 percent of the evolution producing our basic primate physiology occurred before this nutritional pattern emerged. Ninety-eight percent of the human genome is identical to the nearest primate relative, chimpanzees, who eat a 95 percent plant diet. Recent hunter-gatherers consume up to 20 times more meat than chimpanzees on a percent energy basis, a substantial deviation from the primate baseline. I show that, similar to other primates, humans retain many physiological and behavioral features displaying adaptation to a plant-based diet, some of which are potentially maladaptive for diets supplying a high proportion of energy from meat, dairy, eggs fat, or refined carbohydrates. Recent hunter-gatherers and pastoralists appear protected from maladaptive responses to such diets by their baseline body composition, ecological context, and evolved non-nutritive ingestive behaviors. Modern people adopting meat-based 'paleo-facsimile' diets differ from recent hunter-gatherers in body composition, ecological context, and non-nutritive ingestive behaviors. Referring to specific cases, I show how, in part due to these differences, some modern people may develop disorders involving physiological congestion and stagnation when consuming diets supplying a high proportion of energy from meat or fat. Plant and animal foods generally have opposite yet complementary nutritional characteristics. I present an integration of Chinese medical yin-yang theory with Western nutrition that can enable us to understand the relation each type of food (plant or animal) to modern diseases of affluence, and can help guide us to identify an appropriate dietary plant-animal ratio for any individual.

TITLE: Does everyone need to eat a paleo diet?
By Lynda Frassetto, MD

ABSTRACT: Not everyone on a Paleolithic diet improves to the same extent. Our studies suggest that those people with risk factors for metabolic syndrome (elevated blood pressure, abdominal obesity, high blood sugars, cholesterol and/or triglyceride) improve more than healthier people. And those subjects whose blood pressures change with changes in salt intake seem to be those most likely to benefit.

TITLE: Vitamin D and diseases of aging
By Richard Jacobson

ABSTRACT: As you age, you lose your ability to make Vitamin D from sunshine. The resulting Vitamin D deficiency is a major cause of diseases of aging. Exciting epidemiological research has shown that optimal Vitamin D supplementation reduces the incidence of heart disease, cancer, diabetes, obesity and dementia. What is even more exciting is the recent biochemistry discoveries which show how Vitamin D works to prevent many chronic diseases. These epidemiological and biochemistry discoveries will be reviewed for each disease state. Discover how Vitamin D ameliorates aging no matter which theory of aging you subscribe to: viruses, inflammation or lack of autophagy. Learn what is the optimum Vitamin D blood level and how it was arrived at. You will also learn how to compute optimum Vitamin D dosage based upon your Vitamin D test.

COMMEMORATIVE MESSAGE: I want to thank the following Symposium speakers who guided me on the road to health: Gary Taubes, who scared me into radically changing my diet; Dr. Michael Eades, who guided me on the road to weight loss and inspired me to study nutrition; Dr. BG, who introduced me to paleo concepts and convinced me to do high intensity exercise; Mark Sisson, who provided me the blueprint for the paleo lifestyle; and, Dr. Staffan Lindeberg, who confirmed that I was on the right road to health.

TITLE: Obesity; old solutions for a new problem
By Stephan Guyenet, PhD

ABSTRACT: Obesity is one of the greatest health challenges of the 21st century, currently affecting nearly one third of US citizens. Obesity was rare in the US as little as 120 years ago, and it remains uncommon in cultures that have not adopted an industrial diet and lifestyle. How did we get where we are today? Learn why cultures as different as the carbohydrate-eating Pima and the fat-eating Inuit remain lean eating a traditional diet, yet rapidly become obese after the introduction of Western industrial food. Unravel the paradox of why low-carbohydrate and low-fat diets can both cause sustained weight loss. Come explore the biology of obesity with me; learn why the industrial diet causes fat gain, and what we can do about it.

TITLE: Resiliency: human-friendly pathways to optimal physical and mental health
By Emily Deans, MD and Jamie Scott

ABSTRACT: Modern diseases of civilization cause great distress and reduce happiness, healthy longevity and productivity. Our presentation focuses on the basis for applying an evolutionary medicine framework to the treatment and prevention of mental health issues, as well as using the framework in a corporate environment to promote employee well-being. We discuss rationale, evidence, barriers, and a future trajectory for evolutionary medicine.

Part 1: Evolutionary Medicine and Mental Illness

The modern study and treatment of mental illness is based not on brain pathology of physiology, but research grants and pharmaceutical studies based on phenotypes described atheoretically in the DSM-IV. Applying an evolutionary medicine perspective to pathology in mental illness can help us better organize research and find physiologically meaningful paths to prevention and cure. Mental illness is strongly correlated with and is increasing much like other diseases of civilization such as type II diabetes, obesity and metabolic syndrome, and autoimmune disease. The underlying pathology is always inflammation. The interplay of the immune system, the gut, stress, genes, epigenetics, and environment contributes to the vulnerability of a particular person to mental illness. By decreasing food toxins and therefore decreasing inflammation and autoimmunity, being kind to our gut microflora, eating a nutrient-rich diet, and promoting periods of ketosis to help mitochondrial decommission and repair for better brain energy efficiency, we will theoretically increase our brain resiliency.

A more resilient brain will resist the toxic effects of external stressors, thus reducing the risk and severity of mental

illness. Several lines of basic science evidence and some medical evidence give increasing support to the validity of this hypothesis, though much more research needs to be done. Emily Deans, M.D., a practicing psychiatrist and Clinical Instructor of Psychiatry at Harvard Medical School, will review the pathologic basis of mental illness and the role of evolutionary medicine in its treatment.

Part 2: The Application of Evolutionary Biology to Corporate Health and Wellness Programmes

The typical corporate workplace offers almost the antithesis of an evolutionary appropriate environment for humans. The combination of economic reality requiring businesses to achieve more with less, and this evolutionary novel environment, can lead to levels of physical and mental stress which may pose a serious challenge to one's resiliency to all of life's daily pressures. As the workplace is often the environment where a large number of people spend most of their time, it leaves the workplace environment that best place to offer evolutionary appropriate strategies for improving an individual's stress resiliency.

With workplace stress commonly cited as the biggest health issue within the workplace, conventional health programmes, with their focus on biometric screening and influenza vaccination programmes, are a flawed response to an issue that can have serious consequences to an individual's physical and mental health if not appropriately addressed. A novel approach by comparison, addressing aspects of human biology, from an evolutionary perspective, can offer workplace health solutions that may increase an individual's resiliency to the benefit of their health and to the company they work for.

New Zealand-based nutritionist, Jamie Scott, outlines how an evolutionary biology-approach to health and wellness is being applied in a workplace setting, and how this approach is assisting in optimising the physical and mental health of employees and their productivity in corporate life."

TITLE: The Case Against Sugar(s)

By Gary Taubes, MA

TITLE: The rainforest in your gut: A brief tour through your intestinal biome, why it's messed up, and how to fix it
By Dr. BG, PharmD and Tim Gerstmar, ND

ABSTRACT: The gut may be considered the mammalian second brain and its maximal function is related to many factors including diet, lifestyle, stress, exercise and a balanced microbial environment. How do we discern the intelligence quotient (IQ) of the gut and its impact on our metabolic, mental and sexual health? Why is it messed up? In this neolethal age, factors include: poor maternal transfer, dietary impact, pharmaceuticals (acid blockers, antibiotics, vaccines, hormones), poor water quality, excessive hygiene, heavy metals and other toxicants. Which inhabitants in your rainforest are endangered or extinct? Farming our gastrointestinal terrain to achieve a diverse, robust balance of bacteria, microbes and biofilms not only mends the gut but also fulfills the ever expanding role of the biome: immunomodulation, the brain-gut axis, fermentation, vitamin synthesis, hormone production, and detoxification. Happiness, effortless body fat loss and hormonal health can result when the rainforest in the gut is optimized.

TITLE: Nouvelle paleo: Caving in to carbs?

By Michael Eades, MD

TITLE: Great apes and the evolution of human diet

By Craig Stanford, PhD

ABSTRACT: Reconstructions of ancestral human diets can be based on the recent human past, in which diets were likely varied (the notion of a "Paleo Diet" is therefore highly simplistic), or in the ancient human past. This paper will examine the deep roots of the diet to which earliest hominins were adapted. I will show that great ape species are adapted to a fruit-based diet, with meat playing a small but important role in at least one species, the chimpanzee. The overall goal of the paper is to point out the generalizations and false premises in the debate over 'natural' modern human diets from the perspective of the diets that our ancestors ate.

TITLE: Paleo eating in practice: "paleoista"
By Nell Stephenson, BS USC EXSC, ACSM H/FI

ABSTRACT: Modern day implementation of 'how-to' do Paleo; addressing eating out, traveling, kids, athletes and social situations. A user-friendly approach to implementing The Paleo Diet into your daily lifestyle. Beginning with the three-step kitchen clean out, healthy food shop and simple food prep with 'an hour in the kitchen', the audience learns how second-nature it can be. In addition, how to apply to Paleo principles to your endurance training. Great for families, traveling executives, athletes, moms, EVERYONE with a body who wants it to be as optimally healthy as possible! Finally, I'm co-author of *The Paleo Diet Cookbook*, and now I'm working on my second book, with Simon & Schuster, *Paleoista*, which focuses on taking the "man" out of the "Caveman diet" and adapting the Paleo lifestyle for women.

TITLE: The nutrition mess. Can we fix it?
By Richard Feinman, PhD

The near total confusion in the public mind as to what is good, or even safe to eat, is a consequence of the failure of the medical establishment to face scientific data. The persistence in official recommendations based on discredited ideas is a scandal that is equal to any in the history of medicine. The most absurd scientific statements are made by respected health agencies. The medical establishment publishes and ignores what it doesn't like. At the heart of the mess is insistence that the human diet should be low in fat, despite the continued failure of almost every experimental trial and despite protests of both professionals and the public. Only government has the power to fix things. Rather than punitive measures like taxes that, in any case, derive from the current misinformation, investigative and educational panels without ties to current nutritional orthodoxy are required.

TITLE: Dairy, hormones, and human health
By Pedro Bastos, MA, MS

ABSTRACT: There is good evidence that up until 8,500 years ago in the Middle East and 7,500 years ago in Europe, no human being on the planet consumed non-human milk or dairy products. So, on an evolutionary time-scale, non-human milk is a relative newcomer to the human diet, which is further reinforced by the fact that only about 35% of the world's population expresses the phenotype of Adult Lactase Persistence. By using the evolutionary template, and knowing that milk is species specific, we would expect this new habit to have unintended consequences. But, as most foods, milk may have not only adverse effects, but also various beneficial effects. Indeed, some populations, such as traditional African pastoralists, have thrived on high milk diets for thousands of years. Nevertheless, the physiological purpose of milk is to be the sole food of infant mammals during the most accelerated growth period in postnatal development when endogenous production of hormones is low. As a result, in addition to possessing proteins, lipids, carbohydrates, vitamins and minerals, milk also contains various growth-stimulating steroid and peptide hormones and catalysts, transporters, and stabilizers that ensure their maximum bioactivity. Moreover, changes in dairy industry production methods resulted in steadily increasing milk hormone concentrations and bioavailability during the 20th century. The purpose of this lecture is therefore to discuss the endocrine effects of milk and dairy and some of its possible health consequences.

TITLE: Heart disease and molecular degeneration
By Chris Masterjohn

ABSTRACT: When researchers first produced atherosclerosis in rabbits by feeding them cholesterol, they argued that atherosclerosis was of an "infiltrative" rather than "degenerative" character. That is, cholesterol was so abundant that it infiltrated the blood vessel wall. Over the decades it has become clear, however, that atherosclerosis is an attempt to protect the lining of the blood vessel from toxic waste generated by the degeneration of vulnerable lipids. The process of molecular degeneration can be likened to breaking glass, and the formation of atherosclerosis can be likened to the process of cleaning up the broken shards. The danger is not gone forever, though, because these toxic waste management sites (or barrels of broken glass) can eventually burst and spill their contents into the blood, leading to clotting, oxygen starvation, and the death of local tissue that can result in a heart attack or stroke. The key to preventing heart disease according to the new paradigm is preventing the molecular degeneration in the first place. Understanding this will help us achieve the protection from heart disease that our ancestors had.

TITLE: Primal Chef, Episode 1
By Gil Butler, Show Host

Screening during “Meet the Authors and Producers” session on Friday, August 5th at 6:30 PM in the Ackerman Grand Ballroom. Have you ever noticed competitive cooking shows always focus on grains and sugar? You deserve better. Primal Chef is the first show that keeps health in mind and allows only Paleo ingredients in-house. There is also an educational aspect that makes Primal Chef so valuable. Too often we hear people making assumptions that nutritious food is bland and unappealing. Even in the Paleo community, newcomers so frequently say there is nothing good to eat. Professional chefs often don't care about health and are just interested in making a product taste good. Primal Chef challenges all of this and proves that there is more to the culinary world than sugar and flour, and more to the health world than broccoli and spinach. Episode 1 features Robb Wolf, author of “The Paleo Solution.” Primal Chef is hosted by Gil Butler, a Seattle-based food critic and nutrition coach. Learn more about Gil at WhatsInWhatYouEat.org. If you like the show and want to see an Episode 2; your support will make it happen. A limited supply of DVD's will be available on-site. Also, please see: ThePrimalChef.com & [Facebook.com/Primal Chef](https://www.facebook.com/PrimalChef).

TITLE: The trouble with fructose: a Darwinian perspective
By Robert Lustig, MD

ABSTRACT: Rates of fructose consumption continue to rise worldwide, and have been linked to rising rates of obesity, type-2 diabetes mellitus, and metabolic syndrome. Elucidation of fructose metabolism in liver and fructose action in brain demonstrate three parallelisms with ethanol. First, hepatic fructose metabolism is similar to ethanol in that by accelerating the process of de novo lipogenesis, both promote hepatic insulin resistance, dyslipidemia, and hepatic steatosis. Second, fructosylation of proteins with resultant superoxide formation can result in inflammation similar to acetaldehyde, an intermediary metabolite of ethanol. Lastly, by stimulating the “hedonic pathway” of the brain both directly and indirectly, fructose creates habituation, and possibly dependence; also paralleling ethanol. On a societal level, the treatment of fructose as a commodity on the open market exhibits similarities to ethanol. Fructose induces alterations in both hepatic metabolism and central nervous system energy signaling, leading to a “vicious cycle” of excessive consumption and disease consistent with metabolic syndrome. These dose-dependent actions of fructose on the liver and on the hedonic pathway of the brain recapitulate the effects of ethanol.

TITLE: What foods make my brain work best?
By Seth Roberts, PhD

ABSTRACT: I've measured my brain function in several ways, such as balancing ability or arithmetic speed, and used these tests day after day to detect unexpected changes in brain function and to do experiments. I will summarize the results of these tests. The foods producing the best results have been flaxseed oil, pork fat, and butter.

TITLE: From cave to cage: mixed martial arts in ancestral health
By Tucker Max

ABSTRACT: The ancestral health movement has had immense success by recognizing the fundamentals of human nature, realizing that our modern world often conflicts with what our genes need, and finding ways to better reflect the conditions that best serve our ancestral history. But the focus thus far has mainly been on eating and socialization. There is another fundamental of the human condition that has been largely ignored: Fighting. The 'hunter' has been left out of 'hunter-gather.' For the ancestral health movement to become more comprehensive and effective, we must recognize this fundamental aspect of human nature, and think about how to safely and positively incorporate the physical conflict that is so much a part of our history and genetics into our thinking on human health. I propose mixed martial arts as a viable solution.

TITLE: An organic chemist's perspective on paleo
By Mat Lalonde, PhD

ABSTRACT: A critical analysis of the properties of problematic plant components and the contexts in which they become relevant. The seminar seeks to delineate the limitations of the current scientific data available for these compounds in order to stimulate research in lacking areas. The seminar also seeks to teach members of the community how to best present this information in order to avoid being easily discredited or considered alarmist.

TITLE: Where is Darwin on dentistry? Caries and malocclusion from an evolutionary perspective
By Kevin Boyd, DDS, MS and Michael Mew, DDS

ABSTRACT: Evolutionary Medicine (EM), also known as Darwinian Medicine, is a new approach providing a useful framework for understanding modern systemic diseases. Evolutionary Oral Medicine, or Darwinian Dentistry is a branch of EM whose goals are to understand the evolutionary origins of oral disease and to use this understanding for diagnosis, prevention and treatment. Worldwide, dental caries and malocclusion (crooked/crowded teeth, impaired jaw/facial growth) are common oral diseases afflicting people of all ages. Surprisingly, within the pre-historic and fossil records, and in many present-day non-*westernized* cultures, malocclusion is barely detectable; in fact, there is little evidence to suggest that malocclusion appeared appreciably in humans until around the mid-17th century, and mostly in Europe. Dental caries has been plaguing mankind since the advent of agriculture and there is even fossil evidence of tooth decay as far back as 400,000 years ago in one *A. Heidelbergensis* skull. A sharp rise in caries prevalence, however, doesn't appear in humans until nearly 1,000 years ago with the introduction of sugarcane to the Western World, and only began to reach epidemic proportions in the late 19th/early 20th centuries. Susceptibility to dental caries, clearly a dietary-infectious disease caused by increased sugar consumption resulting in increased acid production by oral bacteria, is not likely influenced by genetic changes that might have occurred since the *Agricultural Revolution* some 10-15,000 years ago. While the cause of malocclusion is less clear, it is also not likely a result of recent genomic change. We will develop the hypothesis that malocclusion, like caries, results from a "mismatch" between current Western diets and the lifelong dietary regimes under which our teeth and masticatory mechanisms evolved. As modern orthodontic thinking is relatively uninformed by the new EM paradigm, the second part will focus on a novel approach to orthodontic diagnosis and treatment called *Orthotropics*.

TITLE: The lost art of play
By Mark Sisson

ABSTRACT: Adequate play is an essential, yet often neglected, behavioral component of human existence. Mark Sisson explores some of the important reasons why play is so necessary to a healthy, happy, lean, fit, productive life, despite the fact that Conventional Wisdom seems to have relegated play to the bottom of life's list of priorities.

TITLE: How to win an argument with a vegetarian
By Denise Minger

TITLE: Primal mind: nutrition & mental health—improving the way you feel & function & cultivating an ageless mind
By Nora Gedgaudas, CNS, CNT

ABSTRACT: Learn about the myth of "the mind-body connection" and how diet can powerfully impact mental health and cognitive performance, including a discussion of strategies for improving memory and cognitive function at any age using "Primal principles" and how to slow (maybe even reverse) the process of brain aging. We'll also address common issues like chronic anxiety, depression and ADD/ADHD, what modern day mechanisms might be at play and how a Primal diet and certain added nutrients can better address mental, emotional and cognitive issues. Few individuals seem to make the connection between physical and mental health. As long as one is able to find ones self above ground in the morning, get up out of bed and power through a work day it is commonly assumed that one is healthy. Being thin and active in most people's minds is tantamount to good health (or just not being "sick"), even while the same person may also suffer anxiety related issues, depression or have trouble mentally focusing at work or at school. We all see the world through the lens that is our blood sugar (the extent to which one might be dependent on this), our hormones and neurotransmitters and yet forget that it is our diets that must entirely supply the raw nutrients needed for these critically influential physiological catalysts. Mental health issues and cognitive challenges are nearly ubiquitous today. According to the work of respected nutritional pioneers such as Weston Price these same mental and brain health issues were nearly unheard of in many primitive and traditional societies consuming a diet consistent with that of our more distant evolutionary ancestors. Modern research findings offer added understanding and a new layer to ancestral dietary principles that can lead us toward the promise of optimal brain functioning, emotional liberation and the cultivation of a potentially ageless mind. By applying many of these "Paleo" principles today and modifying them to our more modern circumstances we can re-cultivate and improve upon the healthy Primal Mind that is our birthright and the key to our future as a species.

TITLE: Sustainability of paleo diets
By Matt Metzgar, PhD

ABSTRACT: The sustainability of the Paleolithic diet to support large populations groups is subject to debate. In terms of calorie production per unit of land, grain crops such as corn or wheat may have a higher output than Paleolithic food groups. However, production of grain requires the use of fossil fuels that will impact the long-term sustainability of this land use. In addition, impacts on health from chemical fertilizers and pesticides should also be considered in sustainability. This analysis compares the overall sustainability of traditional agriculture food production to an alternate production model of Paleolithic foods. All aspects of sustainability, including economic, environmental, and health impacts are included in a comprehensive model of long-term sustainability. Results highlight the high indirect costs of traditional farming and the health benefits of Paleolithic foods. A Sustainable Food Index is developed to assess the sustainability of various food production systems.

TITLE: Clues from the colon: how this organ illuminates our digestive evolution and microniche
By Melissa McEwen

ABSTRACT: The colon's microbiome and anatomy hold much promise in illuminating our evolutionary past and teaching us about the importance of a healthy colon for overall health. By comparing the modern human colon with those of our nearest ape relatives, we can infer much about the uniqueness of the human dietary niche, which may be characterized by reliance on high-quality (lower fiber) cooked foods and starch. Further variation between human populations provides clues on more modern adaptations to diet.

COMMEMORATIVE ESSAY: In 1995, anthropologists Leslie C. Aiello and Peter Wheeler published a paper on a theory they termed The Expensive Tissue Hypothesis (ETH). Expensive refers to our brain tissue, which is uniquely metabolically demanding compared to other primate brains. According to the ETH humans compensated for the increased metabolic costs of the brain by evolving less metabolically expensive splanchnic organs, which include the gut and liver. Humans were able to fuel their large brains using only a relatively small gut because increased dietary quality reduced the need for gut mass. The hypothesis was that the main driver of this increased dietary quality was the increased use of animal products.

Exactly how unusual is the modern human gut? Based on a reduced major axis equation computed for higher primates, the human gut should be about .8 grams larger. It is hard to know when this change started, as guts do not fossilize. However, it is possible to infer some information from post-cranial anatomy. Living apes with big guts have a rounded abdomen continuous with the lower portion of the rib cage, giving it a funnel shape, as well as a wide pelvis with flared upper margins. In contrast, the human pelvis size is reduced and the abdomen has a defined waist region. Hominids start exhibiting this in the fossil record starting with *Homo erectus*, about 1.5 million years ago.

In humans compared to primates, the gut is reorganized. The size of the colon is much reduced and the size of the small intestine is increased.

In the colon, bacteria digest otherwise useless dietary constituents into important nutrients and other chemical byproducts. These include short-chain fatty acids (SCFA). The major difference in this matter between humans and the other great apes is that apes such as the gorilla are able to use their larger colons to obtain as much as 60% of their caloric intake from SCFA alone. Upper estimates for human caloric use of SCFA range from seven to nine percent.

Suggestions that humans may have obtained more calories from SCFA in the past are rooted in estimates of fiber consumption from the Paleolithic. Evidence is rather sparse and limited to coprolites, showing evidence for fiber intakes as high as 150 grams a day, well over what any known human culture currently consumes. Even if the method for estimating fiber consumption from coprolites is accurate, they may not support the conclusion that they represent some species level optimal.

Some of the issue is also overemphasis on fiber, when other food constituents that play a similar role may have been more important in human evolution. Early optimism that high fiber could prevent many diseases of civilization spurred many studies on the matter, which had mixed results. Focus on fiber in the past was on its abilities as indigestible bulking matter to increase digestive transit time and bind up certain food constituents.

The fact that humans cannot digest certain fibers and starches in the diet does not mean they are nothing but bulking matter. In the scientific world, more and more research focus has been on the fact that these seemingly indigestible ingredients actually are often digested in the human body, just not by human enzymes. Instead, they are digested by human gut bacteria.

The colonic microbiome remains of vital importance to human health. Scientists are just discovering how the bacterial population and its byproducts play important roles in human nutrition, the immune system, and other vital bodily processes. The gut flora is currently under investigation for its role on hundreds of diseases.

Borne out of this are several new paradigms for studying fiber, not as bulk, but as an interaction agent with gut bacteria. The importance of the species mix, population level, and products has been emphasized. One new term for some fibers is “prebiotic.” A prebiotic fiber is indigestible by human enzymes, but stimulates the growth of certain beneficial gut bacteria such as Bifidobacterium and Lactobactillus.

Another hypothesis is that lack of SCFAs is behind such diseases of civilization. A SCFA called butyrate provides some insight into this. Butyrate is the preferred fuel of the colonic epithelial cells and also plays a major role in the regulation of cell proliferation and differentiation. Lower than normal levels have been found in patients with several diseases, notably types of colitis and inflammatory bowel disorder. Studies show such diseases can be treated through application of butyrate in the colon.

Bacteria affect butyrate production, but so do dietary inputs. Certain fibers produce more butyrate than others in humans. Interestingly, one of the top producers is something known as “resistant starch.” Resistant starch represents the growing nuance in understanding of fiber, since it is a starch that acts like a fiber in terms of acting as a bacterial substrate.

Richard Wrangham has suggested that utilization of cooked starches was one of the dietary quality innovations that fed our rapidly expanding expensive brain tissue as it evolved towards hominid size. The burgeoning field of archeological starch grain analysis has transformed our view of hominids once thought to be mostly carnivorous. Microfossils on Neanderthal teeth from around 44,000 years ago show evidence of the consumption of many roots and tubers, some of which show evidence of cooking. The full impact of the adoption of cooked starches on the human body has not been fully elucidated. One promising adaptation is the starch-digesting salivary amylase gene, AMY 1. Chimpanzees and bonobos have only two copies of this gene, humans have as many as 10 copies, though it varies quite heavily by population from 2 to 10 correlated with the importance of starch in the diet. Molecular genetic evidence places the origin of divergence on this gene at about 200,000 years, about the time when habitual fire use became common.

Some humans may be better at fermenting than others. Recent studies of human gut variation have revealed possible genetic variations as well as those caused by environment and lifestyle.

More study is needed on the matter, but it underscores the major importance of the colon in human evolution. The colon’s microbiome and anatomy hold much promise in illuminating our evolutionary past and teaching us about the importance of a healthy colon for overall health. Current data suggests the colon may be more variable in our species than previously thought, calling into question whether the representative colon used in medical and scientific textbooks and anatomy studies represents recent adaptations. Clues point to the adaptations being related to both the type and amount of fiber, as well as dietary constituents like butyrate.

TITLE: Science for smart people
By Tom Naughton

ABSTRACT: One study says eggs will kill you, another study says eggs will help you live forever. Confused? You don't have to be. Learn to tell good science from bad science in this humorous look at the scientific method and critical thinking.

TITLE: Nebuchadnezzar to knut: a brief history of zoos
By John Durant

TITLE: Evolutionary bariatrics: a “new” treatment approach to morbid obesity
By Vivian Shelton, PsyD

ABSTRACT: Evolutionary Bariatrics is an approach combining evolutionary and ecological concepts through an integrated healthcare team to treat morbidly obese patient populations. This presentation will emphasize how to assist patients in adopting an evolutionary lifestyle to achieve weight loss and to improve health and fitness. Using this model, patients and healthcare providers will be able to identify and assess roadblocks and psychological triggers to problematic eating and to better design interventions to facilitate the necessary lifestyle changes. This presentation will also discuss the role of the psychologist working with obese patient populations and in a multidisciplinary healthcare team.

TITLE: Evolution of a diet revolution
By Andreas Eenfeldt, MD

ABSTRACT: How do we change the world? The failure of conventional nutritionism is horrifying. Ever more people in the industrialized world fall prey to obesity, diabetes, hypertension, dyslipidemia and all the related diseases. As the disaster unfolds the conventional advice is to keep doing the same thing: Double or nothing. Modern science shows the mistake: The unnecessary fear of saturated fat. It made us fear real food. Instead we eat ever more pure sugar and easily digested starch: the very problem behind today's epidemic. Dozens of new randomized trials show a better way. Now we know and now it's time to act. Time to change the world. But how? Luckily there are lessons to be learned from an unexpected place. In a small country in northern Europe the diet revolution is already on its way. Is it a sign of things to come? That may be in our hands.

TITLE: Self-experimentation: the best science
By Richard Nikoley

TITLE: Body by science
By Doug McGuff, MD

TITLE: Talk paleo to me: telling a bigger story
By Frank Forencich

ABSTRACT: Paleo is hot, but many people fail to appreciate the true depth and richness of human prehistory. Sadly, the popular mythology of human history is little more than a "caveman" cartoon, a crude caricature of an immensely meaningful period. If we are to learn anything from our past, we must explore its complexity, diversity and nuance. Not only are we "born to run," we are also born to walk, scavenge, observe, cook, gossip, attach, nurture, learn and discover. Popular accounts of the paleo tend to focus on diet, hunting and barefoot running, but survival also depended on sensitivity, navigation, social skills, emotional regulation, bonding and affiliation. By telling the whole story of our paleo experience, we make it meaningful and relevant to our modern health challenges. The past can inform the present, but only if we understand its full depth and breadth.

TITLE: MovNat: evolutionarily natural fitness
By Erwan LeCorre

ABSTRACT: What is the best fitness program for a panther, a wolf or an eagle? The way evolution and nature intend them to: they move naturally and become amazingly fit in the process. Why should it be any different for us? MovNat is a unique physical education and fitness system based on methodically training the full range of our human evolutionarily natural movement aptitudes. The presentation will cover the MovNat rationale, what distinguishes MovNat from conventional fitness and general physical preparation programs, and introduce you to our main training principles.

TITLE: Efficient exercise: physical culture at the spearhead of healthcare reform
By Keith Norris and Skyler Tanner

ABSTRACT: At the turn of the 20th century, Physical Culture was seen as the means to attain and maintain strength, physical wisdom, and vitality throughout a lifetime. Lost in bodybuilding and aerobic subcultures of the 1960's through today, we aim to refocus attention to the original preventative medicine.

TITLE: Organic fitness: how to train like a hunter-gatherer
By James O'Keefe, MD

ABSTRACT: Using the archetypal hunter-gatherer activity patterns as a template for designing an ideal fitness program for modern day humans.

TITLE: Bridging the gaps: integrating ancestral health in our healthcare systems

By Brent Pottenger, MHA; Nate Rosenberg; Joe Sobolewski, MHA; Janet Chang; and, William Meller, MD

ABSTRACT: Ancestral Health ideas have far-reaching health policy and administration implications. Many of the most costly illnesses to treat are chronic diseases of civilization. Hopefully, folks interested in Ancestral Health will begin the process of integrating these ideas into mainstream institutions. In addition, entrepreneurs have already initiated efforts to build new organizations based upon mutual respect for our unique heritages as human beings. This presentation will discuss the healthcare system and food policy challenges that we currently face and engage attendees in considering ways to operationalize Ancestral Health solutions in our healthcare systems.

COMMEMORATIVE ESSAY by Nate Rosenberg:

After I graduate from law school in December, I will begin a fellowship focused on improving public health and fostering economic development in the Mississippi Delta. The Delta is one of the poorest places in the United States and has some of the worst health outcomes.

In the 1960s, a young doctor in the Delta named Jack Geiger co-founded a government funded community health center. It proved successful, but when he began prescribing his patients food, administrators in Washington balked, refusing to reimburse the doctor for his patients' food. When told by an official that pharmacies should only dispense medicine, he responded, "The last time we looked in the book, the specific therapy for malnutrition was food." Dr. Geiger knew that food should often be the centerpiece of health care. Five decades later, the public policy world is slowly coming to the same realization.

How does this relate to the issue we're discussing today - integrating evidence-based nutrition into the healthcare system? It does so in two ways. First, there's a tremendous amount of money available to support preventative health programs, yet there are no health care organizations integrating evidence-based nutrition in a comprehensive way. This is a waste and needs to be rectified. Second, organizations that do effectively integrate the evidence-based nutrition can impact federal policy.

Politicians hate to do two things: increase taxes and cut services. If health care costs can be cut without requiring them to increase taxes or cut services, they'll jump at the opportunity.

It's easy to be cynical when it comes to policy change. Of course it would be great to increase support for real food and decrease our reliance on pharmaceutical solutions, but what about the corn lobby, Big Pharma, and other big lobbying groups? That objection is understandable, but there are compelling reasons to think that the status quo can change.

A recently released book called *Lobbying and Policy Change* details the findings of a 10-year study that asked, "Who wins in Washington?" The study is the most comprehensive of its kind. The authors randomly chose 98 policy disputes, read more than 20,000 lobbying reports, and conducted 300 interviews to come to a radically counter-intuitive finding: financial resources, they concluded, have no observable effect on the outcomes of policy battles. Well-funded business interests win, it's true, but staff-strapped and under-funded citizen groups win just as much. You can't win if you don't show up, however. As one commentator noted, "If you don't have any lobbyists, donations, members, or organization at all then you've got a real problem." We've got a real problem.

Dr. Geiger started dispensing food in 1965 primarily to address the high levels of hunger he found among his patients. While hunger remains a problem in the Delta, the region is now known for another manifestation of malnutrition, obesity. The Mississippi Delta has the highest obesity rates in a country with alarmingly high obesity rates. This isn't going to change until we create citizen groups that advocate for evidence-based nutrition and build health care institutions that favor food over pharmaceuticals. How we do so is still an open question.

TITLE: Paleo in the family

By Sarah Fragoso and Chrissy Gower

ABSTRACT: Congratulations, you have adopted a Paleo lifestyle and are reaping the new found benefits including vibrant health and an amazing sense of wellness; so what about the kiddos? Parents often struggle with "How do we get the kids on board" or "Is it even possible to have a Paleo Family?" During the Paleo and the Family hour we will answer your questions, discuss how to make old family favorites into new paleo recipes, and we will share our own experiences, tips and advice as to how to make Paleo and the Family work for everyone.

POSTER PRESENTATIONS

FRIDAY

"Dimensional Mastery: How understanding where we've come from gives us valuable insights into where we're headed" by Matt Wallden

"How to Triple Your HDL" by Jonathan Carey

"Bone Broths: The Missing Link in the Evolution of the Modern Superathlete" by Catherine Shanahan

"The Multifactorial Influence of Chronic Sleep Reduction on Body Weight" by Dan Pardi

"What Does the USDA Really Represent?" by Adele Hite

"Paleo Made Simple: A Template for Avoiding Common Errors When Adopting an Evolution-Based Diet" by Melissa and Dallas Urban

"Does physical activity impact dietary choice in a modern Western population to correspond to hunter-gatherer macronutrient profiles?" by Stephanie Schnorr

SATURDAY

"Unlocking the Canine Ancestral Diet, Healthier Dog Food the ABC Way" by Steve Brown

"Declining Age at Menarche: An Indicator of Declining Public Health" by Meghan Gillette

"How psychological dysfunction arises from disparities between hunter-gatherer and modern lifestyles: A new theoretical and therapeutic model" by John Montgomery

"The Ancestral Classroom" by Steven Platek

"Neuroregulation of Appetite: Paleo Nutrition Supports Homeostasis of Macronutrients and Energy Balance" by David Pendergrass

"Grass Based Health: The Big Picture" by Peter Ballerstedt

"Ancestry: A Re-imagined Approach to Education" by Brian Geremia & Justin Park

"Game Over: Comparing the Childhood Play Style of Modern Western Societies with Hunter-Gatherer Societies" by Anna Floyd

"Foods from Our Past: Reclaiming the Paleo Diet Experience in Latino Communities."
by Armida Ayala, PhD, MHA