



Wise Traditions

IN FOOD, FARMING AND THE HEALING ARTS

A PUBLICATION OF

THE WESTON A. PRICE FOUNDATION®

Volume 12 Number 2

Summer 2011



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President's Message

Salt and sulfur comprise two parts of the medieval triumverate, mercury, salt and sulfur. Wrote Paracelsus: ". . . all things created by Nature consist of three primal elements, namely, natural Mercury, Sulfur, and Salt in combination. . . "


Such musings make no sense to modern man, who is focused on what he can observe in the physical world. So, in this issue, we take a look at what science tells us about the roles of sulfur and salt in the human physiology. Both constitute critical parts of our diet, necessary for overall physical health, as well as mental and emotional health. Yet, the scientific community pays little attention to sulfur, and subjects salt to systematic demonization.

Salt, like fat, can be eliminated from the diet, even for long periods of time by those with lots of will power. The result is slow degeneration, fodder for the medical machine grown on the soil of misinformation. Millions of people struggle to eliminate these two essential elements of the diet, all because of relentless propaganda that harps on the evils of fat and salt.

Why does conventional medicine ignore sulfur? Because the foods that provide sulfur by and large lack political correctness—egg yolks and liver. In her article on page 17, Stephanie Seneff explains how sulfur from these foods protects us against heart disease, chronic fatigue, obesity and Alzheimer's. What good news, that a two-egg breakfast provides the solution to these conditions.

Stephanie will give an all-day workshop on Friday at Wise Traditions 2011, our twelfth annual conference. And Morton Satin of the Salt Institute will deliver a talk on the need for salt on Saturday, as part of our Mythbusters series. Joe Mercola will deliver the Saturday banquet keynote address, and there will be dozens of other speakers, both old favorites like Natasha Campbell-McBride and Tom Cowan, and new voices, such as Russ Bianchi, Lola and Peter Hilgartner, Denise Minger and Alan Yegerlehner.

Please see pages 14-16 for all the conference details. We will not be sending out mailers this year, to save on costs. Use the information on these pages to plan your activities and then visit our website or phone (304) 724-3006 to register. Please don't delay—space is very limited and we may have to cut off registration before the conference date.

We look forward to seeing you all there. The *Wise Traditions* conference has become the world's premier nutrition conference, where attendees can take in cutting edge information on diet and health, and enjoy delicious, nutritious meals in the company of like-minded health-seekers. 

Letters

PARTIAL REFINEMENT

Modern nutritional theory claims that too much dietary salt is unhealthy, yet does not distinguish between "natural" sea salt and highly refined commercial salt, which have different chemical compositions and nutritional effects. However, there is even a finer distinction that can be made about dietary salt, which many who consume "health foods" are unaware of.

A macrobiotic teacher with whom I once studied placed a great deal of emphasis on salt in the diet. He claimed it "balanced" certain negative characteristics of food, and he recommended taking salt with almost everything, including grains, vegetables, seeds, nuts . . . and even a tiny amount with fruit. The theoretical reason for the macrobiotic emphasis on salt was that "we" originally came from the sea during the process of evolution, and carried the salty ocean along with us by internalizing it in our blood stream when we colonized the land.

Therefore, the recommended sodium chloride percentage in dietary salt should be the same as that which existed in the oceans at the time biological life evolved onto the land . . . about 91-94 percent, the remaining 6-9 percent made up of various other minerals. To achieve this ratio, salt has to be slightly refined, as are many traditionally produced sea salts from around the world. Salt created by merely evaporating sea water has less sodium chloride, and a greater percentage of magnesium and other minerals

than traditionally processed salt. While magnesium and the other minerals are beneficial to health in small quantities, they can be deleterious in higher quantities. [See Fall 2010 *Wise Traditions* article on magnesium.] In contrast, highly refined commercial sea salt is almost 100 percent sodium chloride, lacking any of the additional minerals.

Many people mistakenly describe traditionally processed sea salt as "unrefined," but this label is inaccurate since it is actually partially refined. One



Traditional salt-making was a process of partial refinement

example of the traditional refining process is practiced on the coast of France, where ocean water is moved through a series of evaporation pools during which unwanted minerals are gradually removed.

(Note: Macrobiotics may have the right idea about salt and other aspects of traditional dietary wisdom from the Orient, but the diet as a whole is unhealthy due to its strict avoidance of all but minor amounts of animal food.)

Roger Windsor
Pleasantville, Tennessee

THE HUMAN ENDOBIOME

Gut dysbiosis is getting much needed publicity in *Wise Traditions*, in writings and lectures by Dr. Campbell-McBride, Elaine Gottschall and vendors of probiotics. Dysbiosis is a disease of what? Not the gut. We lack a word.

A great letter by Caroline Cooper (Winter 2010), titled "Industrial Food Sickness" needs a better word for "gut flora." The right word is "endobiome." "Endo" for inner; "biome" for living populations. Some use the term "micro-

biome," but that term is not specific.

Few would understand the lymphatic system as well if we only referred to it vaguely as tissue fluid movement; nor the liver if we only thought of it as a brown mass under the ribs. Organs and systems need names.

The endobiome involves much more than elimination. It functions as an organ of the body, producing nutrients, affecting hormones, contributing to immunity, and likely performing more functions yet to be found. It is like a city of many diverse and interacting populations. A wrongly populated endobiome is a factor in many diseases including obesity and heart disease as well as digestive and elimination problems. More detailed study is described in an article by Brandon Keim "Gut-Bacteria Mapping Finds Three Global Varieties." See www.wired.com, April 20, 2011.

The endobiome has parts, like any



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organ. The upper endobiome is in the mouth, nose and throat. The central endobiome includes stomach biota. Gut dysbiosis is disease of the colon biota, the lower endobiome.

A healthy endobiome is different for individuals and similar in families. Long ago, fecal transfer from closely related persons sometimes cured dysbiotic conditions almost instantly. This is the ultimate probiotic. (Interestingly, radio host Dr. Dean O'Dell, recently referred approvingly to an article about such a cure. Dr. O'Dell rarely approves of anything "alternative.")

By thinking of our endobiome only as gut flora, feces, or whatever, we think little of protecting it. Rarely do we consider the wellbeing of the endobiome before antibiotic use, colonoscopies, surgery, colonic cleansing, or eating processed food. Obstetricians and pediatricians ignore the effect of Caesarian birth and bottle feeding.

We need to call it by its name, describe the functions of the endobiome, study it further, treat it as an organ, and protect it as an organ. Perhaps some WAPF person can get "endobiome" into the internet dictionaries. Perhaps one of your scientists can produce an effective article for *Wise Traditions*.

Ira Edwards
Medford, Oregon

MORE ON SWEDISH BITTERS

I have been taking Swedish bitters for many years as was recommended by Dr. Thomas Cowan. One of the things he suggested when I was chronically ill over ten years ago was to consume nourishing traditional foods in rhythmical eating rituals. In addition he suggested

I take Swedish bitters after every meal. and he suggested that I use the original formula from a company called www.amaluxherbal.com—I was amazed at the difference! When you open the jar and smell the herbs you breathe in a meadow in a jar! To save on cost, you mix the herbs and brandy, which makes this less expensive compared to what is found in stores.

The Austrian couple that provides this version of Swedish bitters did extensive historical research to discover the original complete formula from the actual medical writings of the individual who first formulated this elixir, the legendary Swiss physician Paracelsus who lived in the 15th century. Swedish Bitters is not originally from Sweden. It was rediscovered in Sweden. by Frau Maria Treben, who called the elixir "the short formula" or "the Maria Treben formula." Her source of information was the notes and manuscripts of the Swedish physician, Dr. Samst, who had reduced the number of herbs to half.

Elizabeth Benner, Chapter Leader
Rochester, New York

BEST START FOR BABY

My husband and I adopted a little girl in July 2008. We were not prepared, as the process happened quite fast, so when we brought her home from the hospital we used the baby formula brand that was given to us. As I researched into providing the best start for our baby girl, a friend told me about your homemade baby formula.

At first I found it a little scary. Raw milk wasn't new to me, but feeding it to a newborn!? I had all the words of pediatricians in my head about how

feeding milk to a baby can get them very sick, how they can't digest it, etc. Yet, I figured if the commercial formulas are "milk based" how could that be totally true? So I spent hours on your website until I felt comfortable enough to switch our daughter over to the homemade formula.

I remember, like it was yesterday, the first bottle we gave her of the homemade formula. I have to admit that I was a little worried because of the smell. I was not used to cod liver oil and I thought, "Oh no, it smells like fish, she will never eat it!" But she sucked down that first bottle in an instant! I never looked back. She was on the formula until she was a year old, when we began giving her plain raw milk.

She was one of the healthiest babies ever! Even my mother said that she had never seen such a healthy baby. She only had two mild colds her first year of life. No ear infections, no gas, no colic—nothing! She was the happiest and healthiest baby. Even today, as she is almost three years old, she still fights off colds very strongly. She also is one of the only toddlers that I have ever seen that eats all sorts of foods. She likes fish (go figure!), meat, chicken, all vegetables (minus peppers!) and all fruits. She would much rather snack on fruit for dessert than a cookie or some other sweet thing. I am sure it is because her tastes were formed with a formula that wasn't loaded with sugar and fake tastes. In addition, I am sure that the ingredients in the formula helped her ability to comprehend and understand new things and learn quickly. She is a real "thinker." I know that the formula ingredients were meant not just for physical health, but



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also for mental health too. I have the perfect example of that in my daughter! Thank you for helping my daughter to have the best start to life possible.

Helen Mazur
Knoxville, Pennsylvania

LOWFAT POSTER CHILD

When I was pregnant with my first child, my son, I ate whatever I wanted, including lots of butter, eggs and meats. The lowfat health craze hadn't hit and I was very thin naturally so I didn't worry about it. He was perfectly formed and had no problems at all.

By the time I had my third child, the mania for no-fat was in full swing—the advice was twenty grams of fat maximum and no high-cholesterol foods. She had a heart problem, allergies, asthma, learning disabilities, ADHD—you name it, I am a poster child for bad dietary advice. My daughter-in-law, unfortunately, is of the egg white omelet crowd, so I am going to send them the Weston Price info and hope for the best. And maybe I will tell her about what I ate to produce her beloved husband. I would have given anything to have had this wisdom from the beginning.

Bonnie Mathews
Washington, DC

SUSTAINABLE A LA MONSANTO

During the Washington, DC morning and evening commute times, Monsanto has been running an advertisement on WTOP (Washington DC's most listened-to radio station) telling all listeners how their version of “sustainable agriculture” is the real way to feed the world. I don't know whether this is only a DC advertisement, meant for federal

decision makers, or something that has been aired nationally? Have you heard this ad?

In it, there is no mention of GMOs, seed patent rights, or the use of Roundup ready with genetically engineered seeds. It just talks about Monsanto's version of “helping” farmers so their seeds can feed the world. I live in Front Royal, Virginia, and work in Manassas, Virginia, which is about a forty-five-minute drive, so I hear this advertisement at least once a day.

I hope that WAPF members will contact any radio station that plays this ad and protest the sustainability claims that Monsanto is making. The yield of GMO seeds is lower than the yield of regular seeds and genetically engineered seeds require a chemically intensive agriculture.

Dennis Petrick
Front Royal, Virginia

THE FACTS ABOUT HOME BIRTHS

In 1940, 44 percent of all births in the United States occurred at home. Since 1969, about 99 percent of all births in the United States have occurred in hospitals, according to an article in National Vital Statistics Reports titled, “Trends and Characteristics of Home and Other Out-of-Hospital Births in the United States, 1990-2006.” This means that the last few generations of women in the United States have had very little exposure to home birth, either in firsthand experience, word of mouth, or the media. The predominant feelings about birth in our culture are negative, and women have generally bought into the idea that labor and delivery are medical occurrences that need a doctor's atten-

dance.

In planning to have a home birth for each of my children, the response I typically encountered from others was something along the lines of “what if something goes wrong?” or “you are really brave!” These responses underscore the fact that most people in our society have no idea that home birth is a safe option, and they certainly don't think labor is something women are designed to handle naturally, without interventions or drugs. In fact, home birth is as safe (if not safer) than hospital birth for low-risk women. The *Canadian Medical Association Journal* article, “Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician,” details birth trends for nearly thirteen thousand births.

There were three groups of women in this study: those planning home births with a registered midwife, those planning hospital births with a registered midwife, and those planning hospital births with a physician. The first two groups were attended by the same group of midwives; additionally, all of these women met the eligibility requirements for home birth, which means that women in both of these groups did not have any preexisting disease, significant complications of pregnancy (such as hypertension and gestational diabetes), or multiple fetuses, among other criterion. The study showed that rates of perinatal death (that is, death during the last weeks of pregnancy and up to four weeks following birth) were slightly lower in the planned home birth group (0.35 deaths per one thousand births) than in both of the groups of women



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planning to give birth in the hospital (0.57 deaths per one thousand births in a hospital attended by a midwife and 0.64 deaths per one thousand births in a hospital attended by a physician). This means that there were fewer deaths of mothers and babies in the planned home birth group than in both of the hospital birth groups.

All obstetrical interventions, such as episiotomy, electronic fetal monitoring and assisted vaginal delivery, pose some risk to the mother and baby. The same study showed that “women who planned a home birth were significantly less likely to experience any of the obstetric interventions [that were] assessed, including electronic fetal monitoring, augmentation of labour, assisted vaginal delivery, cesarean delivery and episiotomy.” For instance, 3 percent of mothers in the planned home birth group received an episiotomy, while the women who planned hospital births with midwives and doctors had episiotomy rates of 7 percent and 17 percent respectively. Twenty-four percent of women who planned homebirths had some augmentation of labor (such as rupture of membranes or oxytocin), while the women who planned hospital births with midwives and doctors had labor augmentation rates of 40 percent and 50 percent respectively.

Additionally, women who planned to give birth at home were also much less likely to have adverse maternal outcomes, such as third- or fourth-degree peritoneal tears or postpartum hemorrhage. Furthermore, newborns in the home birth group were less likely to have birth trauma, require resuscitation at birth, or have meconium aspiration.

All of these trends make it clear that mothers and babies in the home birth group were safer and healthier than those that planned births in a hospital.

Birthing at home allows the mother to be in control of her birth experience. It allows the mother to give birth as directed by her body’s intuition, not as directed by protocols and rules. It is a safe and healthy choice for mother and baby. It facilitates bonding, breastfeeding, and family closeness. It allows women to experience the true joy of labor and birth. A mother giving birth at home can listen to music, dim the lights, soak in her own bathtub, or even go for a walk and revel in the nature around her home. She also maintains control over important decisions, such as whether or not her child gets vaccinated, which germs the baby is exposed to, and what kind of food and drink she consumes. I am hopeful that someday our society will awaken to the truth about labor and birth, and will let go of the idea that the only place to give birth is in a hospital.

Sarah Smith, Chapter Co-leader
Las Cruces, New Mexico

ROMANIAN TRADITIONS

I was born in Communist Romania, under the Ceausescu regime. As bad as communism may have been for the Romanian people, one benefit was that in Romania farming practices, and in particular the raising of livestock, were not industrialized. A large part of the meat on the market was what we would call free-range and grass-fed. Real farmers raised their chicken, pigs or cattle the old-fashioned way. Pork came from real pigs that ate scraps. Lamb came from real sheep that grazed on the foothills

of the Carpathians (and produced some of the most delicious cheeses from its milk). Cows were largely grass-fed, too, although there were government feeding programs to bring them the dreaded corn feed. Fruits and vegetables were also not industrially grown and had real flavor.

I don’t believe it is coincidental that orthodontic work to correct children’s teeth was almost non-existent in Communist Romania pre-1989! I remember we came to the U.S. in the 1980s when I was a child and my mother was astonished at how many Americans needed braces and how screwed up and twisted their mouths were. Something like this did not exist in Romania in the epidemic proportions it did in the U.S. We didn’t understand why this was. Were Americans all like this? And why? Did they just all have smaller, misshapen jaws? My mom’s friend used to joke that all the ugly people left Europe for America, and this is why Americans all need braces. To come from one society where almost no one ever gets braces to one where it’s nearly the norm for kids under thirteen is a huge shock.

Anyway, the situation in Romania is changing now. My countrymen are beginning to buy into the American diet. Meat is now increasingly industrially raised, and vegetables no longer have any flavor. This is called “progress.” They haven’t yet really bought into the soy lie, but I bet it’s just a matter of time.

I haven’t been back in Romania for long enough, but I suspect as things go more and more towards the American diet, we may get epidemic proportions of kids needing braces. Already I see signs of it. My niece eats cereal in the



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morning, drinks tons of Pepsi, and has to have her french fries at night. She's a carb addict—and guess what? She has asthma and coughs up a storm almost every night. I am not sure whether one caused the other but we all comment that back under communism, when the food was fresher, kids seemed healthier. It could just be old folks seeing the past through rosy glasses, but your information supports the truth of this saying.

My niece and her parents look at me like I'm crazy when I try to explain the evils of insulin and hypoglycemia. I don't blame them. There's a long nutritional tradition in the U.S. of believing in high-carb, lowfat diets and this stuff has worked its way into Europe and Romania. The way to get poorer societies to buy into a marketing scam is get the rich people to do it first. So basically it's considered "enlightened thinking" to believe in the American diet these days, even though the traditional Romanian diet was much higher in fat and animal protein.

Calin Culianu
Brooklyn, New York

OBSERVATIONS

As always, I want to thank you and your staff for an outstanding issue of *Wise Traditions*. I would like to comment on two letters in the Spring, 2011 edition.

First, I would like to concur with Shantih Coro and his comments on the northern Italian diet. My mother is of northern Italian heritage. When she took me to her family village, very close to the Swiss border, I was shocked by what I found. First, many of her family were tall, robust people. Also, I saw very

little of the so called Mediterranean Diet foods I had heard of so much in the United States. These people in this small northern Italian town were eating lots of raw dairy foods, copious amounts of butter, fatty meats and bone broths, and more. They all seemed very healthy, and the children had broad faces and great teeth. As Coro mentioned, there is some pasta consumed but nowhere near the amount consumed in the U.S.

Second, I would like to comment on the letter titled "Folly of Food Questionnaires." At the end of the letter, the writer mentions that by following the WAPF diet, she gained twenty-five pounds. She also mentions a low thyroid condition. I am not a doctor, and can't speak to the thyroid issue, but I can speak to the weight issue. My result was the opposite. When I started the WAPF diet, I lost twenty-five pounds (which I much needed to do). But I did follow a few rules. In the beginning I ate with abandon. I think my body was starving. But after that initial phase, I was not as hungry and started to implement portion control, but not so strictly that it felt like denial. I gave my body the fuel and nutrients it needed to function properly, which included significant amounts of fats, moderate protein, and limited carbohydrates. I think limiting carbohydrates was, and is, key (and my doctor concurred), but I felt fine because I made sure I had sufficient amounts of fats including meat fat, butter, and lard. I ate three meals a day with no snacks, letting my digestive system rest between meals. I also ate till I was comfortable and felt satisfied but not overly full. I also added a little more movement to my day, but in no way was it a formal

exercise program. I simply walked a little more and added more regular housekeeping, cooking, gardening activities to my day.

By the way, I have won my doctor over. He now advises his obese patients to limit processed foods, especially processed carbs and to eat a more nutrient-rich diet, including meat with the fat on it!

Finally, I wanted to mention that I watched the WAPF Press Conference at the Washington Press Club [posted at www.westonaprice.org]. It was outstanding! I loved the comment you made about Mrs. Obama stating that theirs is a bacon-and-eggs family. Oh how I wish that was her motto for all families. Wouldn't it be amazing to have a First Lady who promised an egg on every plate and bacon in every frying pan!

Mary Shrader
Austin, Texas

NOURISHING OUR CHILDREN

I recently got the revised *Nourishing Our Children* DVD and watched it with a few friends. It is really well done! My friends and I were very impressed! I am not adept at computers, so I didn't get the PowerPoint version, but the DVD is great!

All you have to do is watch and listen. If you haven't seen it yet, I highly, highly recommend it.

It is an outstanding tool to educate groups of people about nourishing WAPF food!!

It would be wonderful to show at chapter meetings, as well as other community groups, food co-ops, local libraries, church groups, parent groups, home school groups and Waldorf schools.



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Doctors could show it on a laptop in their waiting rooms.

Nourishing Our Children is about real, nourishing food for our children and grandchildren, for all children, and for ourselves! It is well-paced, colorful, positive and very informative. To order it, visit www.nourishingourchildren.org.

Bari Caine
Reno, Nevada

SIGNS FROM NATURE

I was talking to one of my patients, who is a conservation officer. He told me about a doe living in a gated community that was having a difficult birth. One of the residents saw a deer with a fawn hanging out of the birth canal for several hours. They see this problem around housing developments and suspect it comes from a high carbohydrate diet or lack of exercise. He said the fawns get stuck in the birth canals more frequently in these gated communities than in the wild.

I immediately thought about the findings of Weston Price and wondered whether the diet of the deer was different inside these communities. He said these deer are fed frequently by the residents, who don't realize what a deer's healthy diet consists of. People give the corn, cheese doodles, bread and table scraps. Apparently the skeletal structures of these deer are being altered, and they are developing narrowed pelvic openings due to their modern diets, just as humans have.

Gifts and bequests to the Weston A. Price Foundation will help ensure the gift of good health to future generations.

He also pointed out that a mature buck normally weighs between one hundred forty and two hundred pounds. In these communities he sometimes sees them around ninety pounds, with large bellies and emaciated bodies.

Alan J. Stangle, DC
Allentown, Pennsylvania

Another factor causing physical degeneration in the deer could be pesticides and other chemicals used on lawns and gardens.

A HEALTH QUESTIONNAIRE

Have you ever thought of developing a worksheet so that people can self-assess their family's health? If people could tally up all the damage from a Standard American Diet, they may realize the harm that has been done and be more motivated to switch to a WAPF diet.

Questions could include the following: count how many people in the family have one or more cavities; count how many people have had or need braces; count how many people breathe through their mouth, especially at night; count how many infections requiring antibiotics occur in your family every year; count how many times people get a cold or flu every year; count how many chronic diseases, such as asthma, diabetes, heart disease and cancer, are present in your family; count how many people have mental or behavioral problems, such as ADHD or autism; count how many people in the family suffer from allergies; count how many miscarriages have occurred; count how many family members have trouble getting pregnant. The lower the score, the healthier the

family.

What got me thinking about this is all the people I run into that claim to be "perfectly healthy" and "do all the right things." But when I dig a little deeper, I see numerous health problems that are all related to diet.

Paul Sonntag Ericson
Mineral Point, Wisconsin

RAW MILK AND LYME DISEASE

The spreading epidemic of Lyme disease and the knowledge that Lyme bacteria can be transmitted from mother to child via her breast milk have made me wonder about raw cow's milk. Do you know of any documented data regarding the presence of Lyme bacteria in the milk of infected cows? Assuming this transfer occurs, is it known whether the beneficial bacteria in the raw milk can either out-compete or kill Lyme bacteria?

Annette Bodley
Ashburnham, Massachusetts

Reply from Ted Beals, MD, expert on raw milk safety: Like many of these questions, it depends. It might be theoretically possible that the spirochete might be able to get into the milk from some source, either directly from the blood stream of the cow or from contamination. However, even if it got into the milk, it is unlikely to survive. And finally, it is highly unlikely that this organism would survive and by some mechanism that it doesn't normally use, attach itself to the gastrointestinal lining cells and actually penetrate into the person's blood stream. There is a big difference between "might" (possible theoretically) and "actual." I am

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unaware of any case of a person getting Lyme disease by consuming milk or any food. I do not know of any research on theoretical or actual illness from cows. This organism is well studied and there is nothing factual to support even the possibility. Also, there is some possibility that drinking raw milk might make a person less susceptible to the disease.

ZERO NUTRITION

I received an advertisement for a health newsletter called "The Food Doctor" by Dr. Victor Marchione. On one page of the advertisement it described a grocery store chain in New England, which decided to evaluate the nutritional value of the food and beverages they sell using a system of one to three stars.

This grocery store chain found that 77 percent of their products received a

nutritional rating of zero. If this evaluation is correct, it suggests that this is a problem that applies to the vast majority of American grocery stores.

Charles R. Hower
Dallas, Texas

JUMPED TO CONCLUSIONS

Since the publication of my letter to the editor (Spring 2009) on the possibility that raw milk cleared up the cataracts of Mr. Bing Gibb (Winter 2007), Mr. Gibb and I have made many inquiries and have concluded that raw milk was not the cause of his improved vision. The key evidence is a statement from a cooperating ophthalmologist who said that Mr. Gibb now has incipient but clear cataracts; there is no reason to believe they were ever worse. An MD friend suggested that he might have had a cor-

neal infection that the milk somehow affected.

George C. Krusen II, PE
Boxborough, Massachusetts

A THANK YOU

To all the board members and staff of the Weston A. Price Foundation, I want to thank all of you for the hard work you've done to educate America about nutrition and traditional foods. I know that I am healthier and happier because of your work, and my children will be too.

Ashley Barrett
Mishawaka, Indiana



GAPS PRACTITIONER TRAINING COURSES

Dr. Natasha Campbell-McBride is happy to announce the first four Certified GAPS™ Practitioner Training courses in the USA! She would like to train doctors, nutritionists, dietitians, osteopaths, homeopaths and other health practitioners about how to work with GAPS patients.

The course will explore examples from the most common to the most difficult clinical case studies and will establish a framework for a GAPS practice, including running a local GAPS Group. Dr. Campbell-McBride will work through various clinical scenarios you may encounter in your practice. On completion of the course you will be a Certified GAPS Practitioner and will be listed on the GAPS resource site at www.gaps.me. In addition, you will be qualified to receive referral patients from Dr. Campbell-McBride.

After the initial four training sessions, listed below, Dr. Campbell-McBride will hold training courses in Europe and other locations around the world.

2011 USA CERTIFIED GAPS™ PRACTITIONER TRAINING SCHEDULE

Seattle: September 24th - 25th (Sat. & Sun.)
Chicago: September 28th - 29th (Wed. & Thurs.)
New York: October 1st - 2nd (Sat. & Sun.)
Dallas: November 15th - 16th (Tues. & Wed.)

TUITION: \$1175.00 (includes the two-day training, lunches, training materials, and a business starter package)

FOR INFORMATION AND REGISTRATION, please call the GAPS Registration Line at (516) 216-4658 or e-mail GAPSTraining@gmail.com. The GAPS Registration Line is open now Monday - Friday, 10am to 6pm (EST USA). For more details, please visit http://www.immunitrition.com/GAPS_Practitioner_Traini.html.

Caustic Commentary

Sally Fallon Morell takes on the Diet Dictocrats

CHOLINE ACCUSED

Choline is an essential nutrient found in cholesterol-rich foods like liver and egg yolks. Among many other roles, it supports neurological development and mental health, and protects against fatty liver disease. So it will be no surprise to our readers that establishment nutritionists have choline in the crosshairs. For example, a recent paper published in *Nature* suggests that dietary choline may contribute to heart disease (*Nature* 2011;472(7341):57-63). The authors argue that dietary choline, found mostly in a form called phosphatidylcholine, enters the intestine where our gut bacteria convert it to free choline and then to trimethylamine, a gas that smells like rotting fish. Then our livers detoxify the trimethylamine to an odorless product called trimethylamine oxide (TMAO), and TMAO, the authors argue, fills our arteries with plaque. In support of this hypothesis, the authors showed that blood levels of choline, its metabolic byproduct betaine, and TMAO all correlated with the incidence and severity of cardiovascular disease in humans (although this was not prospective data showing that the occurrence of these compounds in the blood early in life predicted the development of heart disease later in life). They also showed that feeding mice phosphatidylcholine did in fact produce TMAO, but only in the presence of gut bacteria. Further, feeding mice five-fold or ten-fold higher concentrations of choline chloride than they would ordinarily receive, or simply feeding them TMAO itself, increased atherosclerotic lesion size, and atherosclerotic lesion size correlated with blood levels of TMAO. There's just one major problem with this hypothesis. Studies in humans have shown that neither phosphatidylcholine nor choline-rich foods produce detectable increases in trimethylamine. For example, in a 1999 study, researchers fed forty-six different foods to humans and looked at the subsequent excretion of trimethylamine and TMAO. Choline-rich foods like liver and eggs did not produce any increase in urinary trimethylamine or TMAO over control levels. But how should we interpret the correlation between heart disease risk and plasma concentrations of choline, betaine and TMAO in humans? Blood levels of choline are currently considered an emerging marker for destabilization of coronary plaques or ischemia in acute coronary syndrome, as reviewed here. During the process of blood clotting, inflammatory enzymes release choline from membrane phospholipids in order to also generate phosphatidic

acid, which is used as an important signaling molecule. Elevated blood levels of choline, then, and perhaps its metabolite betaine, could simply reflect an inflammatory or pro-clotting environment—they are an indicator, not a cause. Elevated TMAO could reflect dietary trimethylamine or TMAO from seafood, but it could also reflect impaired excretion into the urine, or enhanced conversion of trimethylamine to TMAO in the liver. So you can continue to enjoy egg yolks and liver, as we have no evidence that eating choline-rich animal foods increases TMAO at all. For further information, see Chris Masterjohn's blog, "Does Dietary Choline Contribute to Heart Disease?" at www.westonaprice.org.

PLACING BLAME

Health officials are warning about rising rates of degenerative disease in developing countries. No longer diseases of rich nations, cancer and heart disease are increasing throughout the world. For example, more than half of all people newly diagnosed with cancer in 2008 lived in developing countries such as Nigeria, Egypt and Brazil, compared to just 15 percent in 1970. The projected increase in cancer deaths for 2002-2020 is over 60 percent for South Central Asia, North Africa, West Asia, Latin America, the Caribbean and Southeast Asia, compared with 20 percent for Europe. To explain these epidemics, health officials cite the fact that people are living longer and dying less frequently from infectious disease (*Scientific American*, December 2010). There is no mention of fundamental dietary changes (such as replacing animal fats with vegetable oils) and heavy use of pesticides and other chemicals as developing nations embrace industrial agriculture and modern food processing technology.

THE STRONG CHIN IMPERATIVE

Psychologists at the University of Toronto and Tufts University have shown that law firms are more profitable when led by managing partners with "powerful-looking" faces. Their studies also showed that an individual's career success can be predicted thirty to forty years earlier simply by looking at his or her face. Researchers asked participants to judge photos of seventy-three managing partners from the top one hundred American law firms in 2007. They used a scale of one to seven to measure qualities like dominance, facial maturity, likability and trustworthiness. Half the judges rated current

Caustic Commentary

photos downloaded from the law firm website, while the other half rated college yearbook photos of the same individuals taken an average of thirty-three years earlier. The researchers found that the managing partners whose faces were ranked the highest for dominance and facial maturity tended to lead firms with higher profits. This also held true with the partner's yearbook photos (*U of T Magazine*, Spring 2011, Vol 38, No 3). This study provides a good indication that children blessed to be born into WAPF families today, nourished in such a way to express optimal facial (and intellectual) characteristics, will be the leaders of the future.

STARVATION OF THE UNBORN

One hundred obese mothers-to-be will be given the anti-diabetic drug Metformin as part of a three-year study "to tackle obesity rates and reduce the number of difficult births." Patients at Liverpool Women's Hospital will be given the drug to reduce the food supply to their unborn babies, although it will not help the mothers themselves to lose weight. Leading the trial, senior lecturer in obstetrics, Dr. Andrew Weeks, said: "It is about trying to improve outcomes in pregnancy for women who are overweight" (May 11, 2011). We'd like for Dr. Weeks to explain how starving the developing fetus can help improve outcomes or do anything but create misery for these poor souls.

RELAXATION BROWNIES

The latest craze in nutraceuticals is the melatonin-enhanced brownie. Sold as Lazy Cakes, Kush Cakes and Lulla Pies, the pastries are marketed as a "delicious chocolate alternative to medication and harmful narcotics to help you safely relax and fall asleep." Two Massachusetts mayors have called for a ban on the products, and Senator Dick Durbin (D-IL) has asked the FDA to clarify its regulatory position on food additives as melatonin-laced foods and beverages gain in popularity. Last

January, the FDA issued a warning letter to the makers of the relaxation beverage Drank, saying the melatonin it contains is an unapproved food additive (FoodNavigator-USA.com, May 19, 2011). There's just one little problem with banning melatonin from the food supply—it means that logically all other hormones should be banned as well, such as genistein derived from soy, added to bread, diet replacement drinks, salad dressings and many other food products.

THE LIVER OF BAKED PIG

Our thanks to an astute member for noticing this blurb about a March 1968 *National Geographic* photo: "Riding a king-size board, the 325-pound [Tongan king] Taufā'ahau surfs in Pacific combers." The photographer, the late Luis Marden,



Photograph by Luis Marden, National Geographic Image Collection

observed that low calories were not of high importance in Tonga. "Sauntering youths call out to a passing beauty, 'Foi'atelolo, ta omu'a mata mahina hopo!' (O fat liver full of oil, let us go and watch the moonrise!)" Noted Marden, "The liver of a baked pig is the choice morsel reserved for chiefs, and so fond are the Tongans of fat and oily food that any right-minded Tongan girl is enormously pleased at such flattery" (*National Geographic*, November 2007).

Note the fine physiques on all the surfers in the photo, not just the plus-sized king.

WHITE BREAD AND PASTEURIZED MILK

WAPF member John Myser has uncovered a copy of the *Northwestern Health Journal* from June 1929. The first page features a letter promoting the use of pasteurized milk as a protection against milk-borne disease, along with the names of local pasteurizing dairies. "We advocate the use of safe [pasteurized] milk as we believe it to be the best health-building food available and should be included in the diet of adults as well as children." The rest of the issue promotes white bread as an "essential" in the diet. "The unjustified war

Caustic Commentary

on white flour has done great harm to health in many cases.” In anticipation of the USDA food pyramid, the millers of the northwest advocated nine slices of white bread per day—consumed as toast, in sandwiches, and in sugary desserts such as chocolate bread pudding and chocolate soufflé—and to teach infants early to eat bread and cereals. Pasteurized milk and white bread indeed go hand in hand as the wedge that forced processed food on western peoples.

BREAKFAST OF CHAMPIONS

A report from Tumbul, Sudan describes not bread and cereal as the breakfast of champions, but raw camel liver. "If I eat liver, I can stay out in the sun for a long time without feeling tired," says Mubarak Mohammed Ahmed. "It gives me a lot of energy and it improves my mood." The villagers believe that the liver provides the most benefit when eaten unwashed. "It's very tasty — it's my favorite dish," says Abdullah Abdul Mahmoud. "I've been eating raw liver since I was born, just like my father and my grandfather before me," says Abdul Azim Ali. True to form, health officials have focused on raw liver as a health problem, blaming cases of plague in a remote Saudi village from villagers eating infected raw camel liver. Mahmoud disagrees: "I've never fallen sick from eating this," he said. "The liver is so healthy it's like taking medicine" (www.reuters.com/article/2011/04/20).

ROUND-UP HAVOC?

Don Huber, a noted plant scientist from Purdue University, is putting himself in the line of fire by warning about newly discovered dangers of the herbicide glyphosate. Marketed as Roundup, the herbicide was applied to the tune of 185 million pounds in 2007, mostly to genetically engineered Roundup-resistant corn and soy beans. According to Huber, the problem with glyphosate is that it weakens the plant's defenses, making it more susceptible to pathogens, particularly to an extremely tiny pathogen that Huber's team has discovered. This pathogen causes infertility and spontaneous abortion in animals that eat Roundup Ready crops. In January, Huber sent a letter to USDA, urging them to delay approval of Roundup Ready alfalfa until studies could be carried out on this vital perennial crop. But USDA approved Roundup Ready alfalfa anyway, paving the way for a massive crisis in animal agriculture. No farmer can stay in business with the high rates of infertility and spontaneous abortion that the new organism seems to be causing in cattle, pigs and poultry.

MORE OMINOUS

Even more ominous is a new study showing that pesticides implanted into genetically engineered food crops are reaching the bloodstreams of pregnant women and their unborn babies.

ANNOUNCEMENTS

WEBSITE: Our new website design is launched, and the online ordering page is working! Thank you for your patience while we made the time-consuming changes. You can now join, renew, donate and order materials on line.

TWITTER and FACEBOOK: Visit our Twitter page at twitter.com/WestonAPrice. Our Facebook page is at www.facebook.com/pages/Weston-A-Price-Foundation/58956225915, or go to www.facebook.com and search for Weston A. Price.

BLOGS: Visit the timely blogs of Chris Masterjohn and Kaayla T. Daniel, PhD at www.westonaprice.org/blogs.html.

ALEXA WEBSITE RATINGS: www.westonaprice.org is rated seventh among nutrition websites at alexa.com (see www.alexa.com/topsites/category/Top/Health/Nutrition.) Please visit the site and post a comment about our website. You can help raise our rating by visiting our website frequently and linking to it from your own website, Facebook page or blog.

VEGETARIAN DEBATE AT PROCON.ORG: Procon.org has posted a lively debate on vegetarianism. Please visit the site at vegetarian.procon.org/view.answers.php?questionID=001600 to read the debate, and then post a comment. The link directly to the comments section is here: vegetarian.procon.org/view.answers.php?questionID=001600&tab=reader-comments.

ERRATA: A line was inadvertently left out of page 51 of the Spring 2011 issue, at the end of Kathryn Pirtle's review of *The Age of Autism*. The full line should read: As we seek correction of irresponsible policies, we will continue to depend on measures of individual heroism, for inaction may lead to more destruction. Review by Kathryn Pirtle

Caustic Commentary

Researchers at the University of Sherbrooke Hospital Centre in Quebec, Canada, found that 93 percent of blood samples taken from pregnant women and 80 percent from umbilical cords tested positive for traces of the toxins (*Reproductive Toxicology*, 2011 Feb 18). The study shows the fallacy of claims that these toxins are destroyed in the gut—industry assurances that food safety authorities in Britain and Europe have accepted as valid. Scientists speculate that the toxins could lead to allergies, miscarriage, abnormalities or even cancer.

VITAMIN A SUCCESS

Misinformation about vitamin A abounds, but one thing is certain, vitamin A saves lives in Third World countries. A recent Cochrane review estimated that vitamin A supplementation programs for children under five could save one million lives per year. The researchers reviewed data from forty-three randomized trials, representing more than two hundred thousand children. They concluded that vitamin A supplementation is effective in reducing all-cause mortality by 24 percent, mainly via a reduced occurrence of measles and diarrhea. Head researcher Butta noted that vitamin A deficiency is a major public health problem in low and middle income countries (Cochrane Database of Systematic Reviews, Issue 12 doi: 10.1002/14651858.CD008524.pub2). Meanwhile, signs of vitamin A deficiency in rich countries like the U.S. are ignored in favor of pharmaceutical interventions. Establishment nutritionists continue to insist that vitamin A is toxic, or that we can get vitamin A from plant foods like orange fruits and leafy green vegetables. Plus many vitamin A supplements use beta-carotene rather than true vitamin A.

DAIRY FATS AND HEART DISEASE

An excellent source of vitamin A is butterfat, found in whole dairy products, cheese and, of course, butter, which many people avoid in the belief that they cause heart disease. However, recent evidence indicates that these dairy foods could actually benefit the heart. A team of researchers from Sweden measured blood levels of two biomarkers of milk fat in over four hundred heart attack patients and over five hundred healthy controls. The markers, pentadecanoic acid and heptadecanoic acid, provide a good indication of how much dairy fat a person has been eating. The researchers found that people with the highest levels of milk fat biomarkers were actually at lower risk of heart attack; for women the

risk was reduced by 26 percent and for men the risk was 9 percent lower (*American Journal of Clinical Nutrition*, July 2010 92(1):194-202).

COD LIVER OIL AND CRAYFISH

Claude Stanley Choles, the last World War I combat veteran, died in May at the age of one hundred ten. When asked his secret for longevity, he sometimes chalked his good health to cod liver oil. According to his children, it was the love of his family that kept him going for so many years (*Star Tribune*, May 5, 2011). But maybe taking cod liver oil makes one loveable! Choles also enjoyed crayfishing. The combination of cod liver oil and crayfish ensured plentiful amounts of vitamin A and D to support a long and happy life.

THE FOOD RAVE CRAVE

The latest trend in food is underground night markets for foodies, with live music, disco balls, bouncers and dozens of unlicensed food vendors—called "civil disobedience on a paper plate." The underground market seeks to encourage food entrepreneurship by helping vendors avoid roughly one thousand dollars worth of fees—including those for health permits and liability insurance—required by day time farmers markets. Originating in San Francisco, where vendors selling delicious foods attract thousands of nocturnal foodies, the trend has migrated to Chicago, Washington and Atlanta. Typically vendors pay fifty dollars to reserve a cooking space and 10 percent of sales over five hundred dollars. Market organizers sidestep city health inspections by operating as a private club. Promoters attribute the success of the markets to consumers searching for healthier alternatives to commercial industrial food (*New York Times*, April 15, 2011). ☺☺

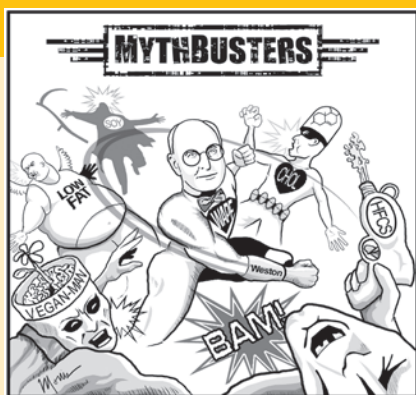
FOR SCIENTISTS AND LAY READERS

Please note that the mission of the Weston A. Price Foundation is to provide important information about diet and health to both scientists and the lay public. For this reason, some of the articles in *Wise Traditions* are necessarily technical. It is very important for us to describe the science that supports the legitimacy of our dietary principles. In articles aimed at scientists and practitioners, we provide a summary of the main points and also put the most technical information in sidebars. These articles are balanced by others that provide practical advice to our lay readers.



WiseTraditions 2011

TWELFTH ANNUAL INTERNATIONAL CONFERENCE OF THE
WESTON A. PRICE FOUNDATION®



MYTHBUSTERS

Friday, November 11 – Monday, November 14
Sheraton Dallas Hotel, Dallas, Texas

AMERICA'S PREMIER NUTRITION CONFERENCE

A Showcase for Delicious Traditional Food.
A Unique Opportunity for Health Professionals
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SPEAKERS

Russ Bianchi, PhD, expert on high fructose corn syrup
Leslie Bradshaw, producer of *The Greater Good*
Jerry Brunetti, soil and animal health specialist
Natalasha Campbell-McBride MD, author of *Gut and Psychology Syndrome*
Monica Corrado, holistic nutrition and food educator
Thomas Cowan, MD, author of *Fourfold Path to Healing*
Kaayla Daniel, PhD, author of *The Whole Soy Story*
Robert Disney, environmental scientist
Jacques Goulet, PhD, trace mineral expert
Kathy Kramer, CN, WAPF office manager
Sally Fallon Morell, MA, author of *Nourishing Traditions*
Kimberly Hartke, WAPF publicist and Real Foods blogger
Christy Hemenway, expert on beekeeping
Lolin Hilgartner, DC, of the *Seven Essential Dynamics of Health*
Peter Hilgartner, DC, of the *Seven Essential Dynamics of Health*
Paul Janimet, PhD, author of *Perfect Health Diet*
Sharon Kane, expert on gluten-free baking
Datis Kharrazian, DC, author of *Why Do I Still Have Thyroid Symptoms?*
Jules Klapper expert on dirty electricity
Liz Lipski, MS, CCN, author of *Digestive Wellness*
Hugh Lovell, authority on biodynamics
Chris Masterjohn, expert on fat-soluble vitamins
Richard Maurer, ND, author of *FatbackDiet.com*
Mark McAfee, CEO, Organic Pastures Dairy

Judith McGeary, Esq, founder Farm and Ranch Freedom Alliance
Joe Mercola, DO, author of *The No-Grain Diet*
Denise Minger, China Study debunker
Pentti Nupponen, DMD, holistic dentist
Sally Pacholok, RN, co-author of *Could It Be B₁₂?*
Sarah Pope, of *The Healthy Home Economist* blog
Ben Pratt, author of *Nutrition's Playground*
Jessica Prentice, author of *Full Moon Feast*
Tara Rayburn, the Healthy Habit Coach
April Renée, vaccination expert
Morton Satin, PhD, director of research, The Salt Institute
Michael Schmidt, Canadian raw milk activist
Pam Schoenfeld, RD, expert on vitamin B₆
Stephanie Seneff, PhD, authority on sulfur in human health
Ritchie Shoemaker, MD, author of *Surviving Mold*
Jeffrey Stuart, DO co-author of *Could It Be B₁₂?*
Matt Stone, author of *180 Degree Nutrition*
Harvey Ussery, author of *The Small Scale Poultry Flock*
Howard Vlieger, expert on GMOs
Alan Yegerlehner, expert on integrated farming
David Wetzel, expert on cod liver oil
Louisa Williams, MS, DC, ND, author of *Radical Nutrition*
Will Winter, DVM, expert on pastured livestock

LOCATION AND ACCOMMODATION

The conference will be held at the Sheraton Dallas Hotel, Dallas, Texas

Self parking at \$10 per day • For special conference rate of \$135, phone (888) 627-8191
or reserve online at www.starwoodmeeting.com/Book/WiseTraditions (code Wise Traditions Conference)
Special conference rates for hotel rooms are available only until October 24, 2011.

SAVE UP TO \$50 IN CONFERENCE FEES IF YOU REGISTER BY AUGUST 1!

Children's Program • Monday Farm Tour • Continuing Education Units for Many Health Professions
For more information, call (304) 724-3006 or visit www.westonaprice.org/conferences/2011-conference.html

SPECIAL PRE-CONFERENCE EVENT: Farm-to-Consumer Legal Defense FundRAISER

Includes day farm visit and evening barbeque and festivities at the Sheraton Dallas Hotel

Thursday, November 10, 2011

For more info - visit www.farmtoconsumer.org/dallas or call (703) 208-3276.



Farm-to-Consumer
Legal Defense Fund

WISE TRADITIONS 2011 REGISTRATION FORM

First Name Last Name Name for Badge

Organization/Affiliation

Address

City, State, Zip Code, Country

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E-mail

☐ Check here to reserve GF/CF conference meals. A separate GF/CF buffet is provided at all meals, except the banquet where you'll receive the GF/CF plate with a special dinner ticket. Register for GF/CF children's meals below.

Full Conference Registration includes Conference Materials, Friday Sessions, Friday Lunch, Friday Dinner, Saturday Sessions, Saturday Lunch, Saturday Evening Awards Banquet, Sunday Sessions and Sunday Brunch.

By August 1 After August 1

<input type="checkbox"/> Full Registration Student/Senior Member*	\$290.	\$340.
<input type="checkbox"/> Full Registration Student/Senior Non-Member*	\$315.	\$365.
<input type="checkbox"/> Full Registration Member	\$390.	\$440.
<input type="checkbox"/> Full Registration Non-Member	\$430.	\$480.

<input type="checkbox"/> Daily Registration Student/Senior Member*	\$120.	\$160.
<input type="checkbox"/> Daily Registration Student/Senior Non-Member*	\$145.	\$185.
<input type="checkbox"/> Daily Registration Member	\$170.	\$210.
<input type="checkbox"/> Daily Registration Non-Member	\$210.	\$250.
<input type="checkbox"/> Friday Dinner & Events	\$ 60.	\$ 85.
<input type="checkbox"/> Saturday Evening Awards Banquet	\$ 75.	\$100.
<input type="checkbox"/> Monday Radical Nutrition Seminar (8-4, includes lunch)	\$ 75.	\$ 85.
<input type="checkbox"/> Monday Farm Tour (8-4, includes lunch)	\$ 75.	\$ 85.
<input type="checkbox"/> Monday Poultry Workshop (8-4, includes lunch)	\$ 75.	\$ 85.
<input type="checkbox"/> Monday Cooking Workshop (8-4, includes lunch)	\$ 75.	\$ 85.

* Student/Seniors must show ID. Senior is 62 and older.

<input type="checkbox"/> Thursday, November 10 FTCLDF On-Farm FundRAISER	\$ 75.	\$ 95.
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If you are attending as a daily registrant, please indicate the day(s) you will be attending:

- ☐ Friday November 11 Registration includes Conference Materials, Friday Sessions and Friday Lunch
☐ Saturday November 12 Registration includes Conference Materials, Saturday Joint Sessions and Saturday Lunch
☐ Sunday November 13 Registration includes Conference Materials, Sunday Sessions and Sunday Brunch

Friday Seminar Choice – please select one for planning purposes only, not binding.

- ☐ Traditional Diets ☐ Gut & Psychology ☐ Nutrition & Metabolism ☐ Biodynamic Farming ☐ Food Prep

Saturday Choice – please select one for planning purposes only, not binding.

- ☐ Main General Session: Mythbusters ☐ Wellness Track ☐ Farming & Activism Track

Sunday Seminar Choice – please select one for planning purposes only, not binding.

- ☐ Recovery ☐ Children's Health ☐ Hormonal ☐ Environmental ☐ Nutrition

Childcare (Child must be age 3-12 and potty trained)

Child's Name(s) _____ Age(s) _____
 @ \$210 per child for Friday - Sunday includes Friday lunch, Friday dinner, Saturday lunch and Sunday brunch ☐ GF/CF meals for _____ children OR _____ @ \$100 per child, does not include meals

Continuing Education Credits

- ☐ Friday, \$25. ☐ Saturday, \$25. ☐ Sunday, \$25. ☐ All 3 days, \$65. ☐ Cert of Attendance \$5.

Payment Processing

Total Due: _____ ☐ MasterCard ☐ Visa ☐ Check Payment/Money Order (make payable to WAPF)
 Full Name Security Code (3 digits on back of card) _____

Card Number Expiration Date _____

By submitting this form, I authorize Wise Traditions to charge the applicable registration fees. I understand that all cancellations must be submitted in writing and must be received by October 22, 2011 to be eligible for a refund, less a \$25.00 administrative fee. All refunds will be issued following the conference. Substitutions will be permitted. Registration packets will not be mailed and must be picked up on-site at the conference registration desk at the Sheraton Dallas Hotel.

CHAPTER LEADERS

☐ Please check here if you are a chapter leader.

☐ I plan to attend the Monday Chapter Leader Meeting.

What is your current occupation?

- ☐ Medical Practitioner ☐ Farmer
☐ Nutritionist ☐ Homemaker
☐ Massage Therapist ☐ Student
☐ Chiropractor ☐ Retired
☐ Nurse ☐ Teacher
☐ Agriculture Professional ☐ Journalist
☐ Other, please specify _____

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 registrar@ptfassociates.com
 or
 WAPF (202) 363-4394
 info@westonaprice.org

Poster Presentations Info:
 info@westonaprice.org

PLEASE NOTE

One adult registration per form, please.
 Forms submitted without payment will not be processed.

NO REFUNDS will be issued after December 31, 2011.

FOR FURTHER INFORMATION visit
www.westonaprice.org/conferences/2011conference

CONFERENCE SCHEDULE

FRIDAY, NOVEMBER 11

ALL-DAY WORKSHOPS

Nourishing Traditional Diets, Sally Fallon Morell, MA
 Gut and Psychology Syndrome, Natasha Campbell-McBride, MD
 Nutrition and Metabolism, Stephanie Seneff, PhD
 Biodynamic Farming, Hugh Lovell, Michael Schmidt and Christy Hemenway
 Food Preparation, Tara Raburn, Jessica Prentice and Sharon Kane

EVENING ACTIVITIES

All About Cod Liver Oil, David Wetzel
 Obesity Myths, Ben Pratt
 Radical Medicine: Removing the "Obstacles to Cure," Louisa Williams, MS, DC, ND
 Real Food Bloggers Panel
 Film: The Greater Good, Leslie Bradshaw

SATURDAY, NOVEMBER 12

PLENARY SESSION, MYTHBUSTERS

Fat Myths, Chris Masterjohn
 Salt Myths, Morton Satin, PhD
 The China Study Myths, Denise Minger
 Industrial Sweeteners Myths, Russ Bianchi, PhD

WELLNESS TRACK

The Perfect Health Diet, Paul Jaminet, PhD
 Health Topics, Pentti Nupponen, DMD

FARMING TRACK

Back Yard Food Production, Harvey Ussery
 The Integrated Farm, Alan Yegerlerner
 Farm & Food Activism, Judith McGeary, Esq.

EVENING AWARDS BANQUET

Keynote Address by Joe Mercola, DO

SUNDAY, NOVEMBER 13

TRACK I: RECOVERY

Recovery with Low-Dose Naltrexone, Tom Cowan, MD
 Recovery from Digestive Problems, Liz Lipski, MS, CCN
 Recovery from Vegetarianism, Kaayla Daniel, PhD
 Recovery from Cancer, Jerry Brunetti

TRACK II: CHILDREN'S HEALTH

Healthy Pregnancy, Sally Fallon Morell
 Fever: A Child's Best Friend, Tom Cowan, MD
 Infant Care and the WAPF Formula, Sarah Pope
 Vaccinations, April Renee

TRACK III: HORMONAL TRACK

Why Do I Still Have Thyroid Symptoms? Datis Kharrazian, DHSc, DC, MNeuroSci
 180 Degree Nutrition, Matt Stone
 Insulin Resistance and Metabolic Syndrome, Richard Maurer, ND
 Hormone Health, Peter Hilgartner, DC, and Lolin Hilgartner, DC

TRACK IV: ENVIRONMENTAL TRACK

Dirty Electricity, Jules Klapper
 Toxic Building Syndrome, Ritchie Shoemaker, MD
 GMO's and Mammal Health, Howard Vlieger
 Waste Water Contaminants, Robert Disney

TRACK V: NUTRITION

Could it Be B12? Sally Pacholok, RN, and Jeffrey Stuart, DO
 Vitamin B6, Pam Schoenfeld, RD
 Vitamin K, Chris Masterjohn
 The Importance of Trace Minerals, Jacques Goulet, PhD

MONDAY, NOVEMBER 14

Chapter Leaders Meeting
 Farm Tour with Will Winter & Jerry Brunetti*
 Whole Systems Poultry, Harvey Ussery*
 Radical Medicine, Louisa Williams, MS, DC, ND*
 Cooking Workshop with Monica Corrado*

* Additional fees apply.
 Space is extremely limited so be sure
 to secure your space today.

Sulfur Deficiency:

A Possible Contributing Factor in Obesity, Heart Disease, Alzheimer's and Chronic Fatigue

By Stephanie Seneff, PhD

Obesity is quickly becoming the number one health issue confronting America today, and has also risen to epidemic proportions worldwide. Its spread is associated with the adoption of a Western-style diet. However, I believe that the widespread consumption of food imports produced by U.S. companies plays a crucial role in the rise in obesity worldwide. Specifically, these “fast foods” typically include heavily processed derivatives of corn, soybeans and grains, grown on highly efficient mega-farms. Furthermore, I will argue in this essay that one of the core underlying causes of obesity may be sulfur deficiency.

Sulfur is the eighth most common element by mass in the human body, behind oxygen, carbon, hydrogen, nitrogen, calcium, phosphorus and potassium. The two sulfur-containing amino acids, methionine and cysteine, play essential physiological roles throughout the body. However, sulfur has been consistently overlooked by those addressing the issues of nutritional deficiencies. In fact, the National Academy of Sciences has not even assigned a minimum daily requirement (MDR) for sulfur. One consequence of sulfur's limbo nutritional status is that it is omitted from the long list of supplements that are commonly artificially added to popular foods like cereal.

My extensive literature search has led me to two mysterious molecules found in the bloodstream and in many other parts of the body: vitamin D₃ sulfate, and cholesterol sulfate.

UNAPPRECIATED DEFICIENCIES

Sulfur is found in a large number of foods, and, as a consequence, it is assumed that almost any diet would meet the minimum daily requirements. Excellent sources are eggs, onions, garlic, and leafy dark green vegetables like kale and broccoli. Meats, nuts, and seafood also contain sulfur. Methionine, an essential amino acid, is found mainly in egg whites and fish. A diet high in grains like bread and cereal is likely to be deficient in sulfur. Increasingly, whole foods such as corn and soybeans are disassembled into component parts with chemical names, and then reassembled into heavily processed foods. Sulfur is lost along the way, and so is the awareness that this loss matters.

Experts have recently become aware that sulfur depletion in the soil creates a serious deficiency for plants,¹⁷ brought about in part by improved efficiency in the U.S. agricultural industry, which has steadily consolidated into highly technologized mega-farms.

It is estimated that humans obtain about ten percent of their sulfur supply from drinking water. Remarkably, people who drink soft water have an increased risk of heart disease compared to people who drink hard water.² Many possible reasons have been suggested for why this might be true, and just about every trace metal has been considered as a possibility.³ However, I believe that the real reason may simply be that hard water is more likely to contain sulfur.

SULFUR AND OBESITY RATES

The ultimate source of sulfur is volcanic rock, mainly basalt, spewed up from the earth's core during volcanic eruptions. It is generally believed that humans first evolved in the African rift zone, a region that would have enjoyed an abundance of sulfur due to the heavy volcanic activity there.

The three principal suppliers of sulfur to the Western nations are Greece, Italy and Japan. These three countries also enjoy low rates of heart disease and obesity and increased longevity. In the United States, Oregon and Hawaii, two states with significant volcanic activity, have among the lowest obesity rates in the country. By contrast, the highest obesity rates are found in the midwest and in southern farm country: the

epicenter of the modern agricultural practices (mega-farms) that lead to sulfur depletion in the soil. Among all fifty states, Oregon has the lowest childhood obesity rates.

Hawaii's youth are faring less well than their parents, however: while Hawaii ranks as the fifth from the bottom in obesity rates, its children aged ten through seventeen weigh in at number thirteen. As Hawaiians have recently become increasingly dependent on food imports from the mainland, they have suffered accordingly with increased obesity problems.

In her recently published book, *The Jungle Effect*,²⁵ Dr. Daphne Miller devotes a full chapter to Iceland in which she struggles to answer the question of why Icelanders enjoy such remarkably low rates of depression, despite living at a northern latitude, where one would expect a high incidence of Seasonal Affective Disorder. She points out, furthermore, their excellent health record in other key areas: "When compared to North Americans, they have almost half the death rate from heart disease and diabetes, significantly less obesity, and a greater life expectancy. In fact, the average life span for Icelanders is amongst the longest in the world." While she proposes that their high fish consumption, with associated high intake of omega-3 fats, may plausibly be the main beneficial factor, she puzzles over the fact that former Icelanders who move to Canada and also eat lots of fish do not also enjoy the same decreased rate of depression and heart disease.

In my view, the key to Icelanders' good health lies in the string of volcanoes that make up the backbone of the island, which sits atop the mid-Atlantic ridge crest. Dr. Miller pointed out that the mass exodus to Canada was due to extensive volcanic eruptions in the late 1800s, which blanketed the highly cultivated southeast region of the country. This means, of course, that the soils today are highly enriched in sulfur. The cabbage, beets and potatoes that are staples of the Icelandic diet are likely providing far more sulfur to Icelanders than their counterparts in the American diet provide.

TWO MYSTERIOUS MOLECULES

Now comes the difficult question: why does sulfur deficiency lead to obesity? The answer, like much of biology, is complicated, and part

of what I theorize is conjecture.

Sulfur is known as a healing mineral, and a sulfur deficiency often leads to pain and inflammation associated with various muscle and skeletal disorders. Sulfur plays a role in many biological processes, one of which is metabolism. It is present in insulin, the essential hormone that promotes the utilization of sugar derived from carbohydrates for fuel in muscle and fat cells. However, my extensive literature search has led me to two mysterious molecules found in the blood stream and in many other parts of the body: vitamin D₃ sulfate and cholesterol sulfate.³⁵

Upon exposure to the sun, the skin syn-

thesizes vitamin D₃ sulfate, a form of vitamin D that, unlike unsulfated vitamin D₃, is water soluble. As a consequence, it can travel freely in the blood stream rather than encapsulated inside LDL (the so-called “bad” cholesterol) for transport.¹ The form of vitamin D that is present in both human milk¹⁹ and raw cow’s milk² is vitamin D₃ sulfate (pasteurization destroys it in cow’s milk).

Cholesterol sulfate is also synthesized in the skin, where it forms a crucial part of the barrier that keeps out harmful bacteria and other microorganisms such as fungi.³⁵ Cholesterol sulfate regulates the gene for a protein called profilaggrin, by interacting like a hormone with the nuclear receptor ROR-alpha. Profilaggrin is the precursor to filaggrin, which protects the skin from invasive organisms.^{31,24} A deficiency in filaggrin is associated with asthma and arthritis. Therefore, cholesterol sulfate plays an important role in protection from asthma and arthritis. This explains

IS THE SKIN A SOLAR-POWERED BATTERY FOR THE HEART?

The evidence is quite compelling that sunny places afford protection from heart disease. A study described in a 1996 issue of QJ Med.¹⁴ provides an in-depth analysis of data from around the world showing an inverse relationship between heart disease rates and a sunny climate and a low latitude. For instance, the cardiovascular-related death rate for men between the ages of 55 and 64 was 761 per 100,000 men in Belfast, Northern Ireland, but only 175 in Toulouse, France. While the obvious biological factor that would be affected by sunlight is vitamin D, studies conducted specifically on vitamin D status have been inconclusive, with some even showing a significant *increased* risk for heart disease with increased intake of vitamin D₂ supplements¹².

I believe, first of all, that the distinction between vitamin D₂ and vitamin D₃ sulfate really matters, and also that the distinction between vitamin D₂ and vitamin D₃ really matters. Vitamin D₂ is the plant form of the vitamin. It works similarly to D₃ with respect to calcium transport, but it cannot be sulfated. Furthermore, apparently the body is unable to produce vitamin D₃ sulfate directly from unsulfated vitamin D₃¹⁹ (which implies that it produces vitamin D₃ sulfate directly from cholesterol sulfate). I am not aware of any other food source besides raw milk that contains vitamin D₃ in the sulfated form. So, when studies monitor either vitamin D supplements or vitamin D serum levels, they’re not getting at the crucial aspect for heart protection, which I think is the serum level of vitamin D₃ sulfate.

Furthermore, I believe it is extremely likely that vitamin D₃ sulfate is not the only thing that’s affected by greater sun exposure, and maybe not even the most important thing. Given that cholesterol sulfate and vitamin D₃ sulfate are very similar in molecular structure, I would imagine that both molecules are produced the same way. And since vitamin D₃ sulfate synthesis requires sun exposure, I suspect that cholesterol sulfate synthesis may also exploit the sun’s radiation energy.

Both cholesterol and sulfur afford protection in the skin from radiation damage to the cell’s DNA, the kind of damage that can lead to skin cancer. Cholesterol and sulfur become oxidized upon exposure to the high frequency rays in sunlight, thus acting as antioxidants to “take the heat,” so to speak. Oxidation of cholesterol is the first step in the process by which cholesterol transforms itself into vitamin D₃. Sulfur dioxide in the air is converted nonenzymatically to the sulfate ion upon sun exposure. This is the process that produces acid rain. The oxidation of sulfide (S⁻²) to sulfate (SO₄⁻²), a strongly endothermic reaction¹⁵, converts the sun’s energy into chemical energy contained in the sulfur-oxygen bonds, while simultaneously picking up four oxygen molecules. Attaching the sulfate ion to cholesterol or vitamin D₃ is an ingenious step, because it makes these molecules water-soluble and therefore easily transportable through the blood stream.

Hydrogen sulfide (H₂S) is consistently found in the blood stream in small amounts. As a gas, it can diffuse into the air from capillaries close to the skin’s surface. So it is conceivable that we rely on bacteria in the skin to convert sulfide to sulfate. It would not be the first time that humans have struck up a symbiotic relationship with bacteria. If this is true, then washing the skin with antibiotic soap is a bad idea. Phototrophic bacteria, such as *Chlorobium tepidum*, that can convert H₂S to H₂SO₄ exist in nature^{39,36}, for example in sulfur hot springs in Yellowstone Park. These highly specialized bacteria can convert the light energy from the sun into chemical energy in the sulfate ion.

Another possibility is that we have specialized cells in the skin, possibly the keratinocytes, that are able to exploit sunlight to convert sulfide to sulfate, using a similar phototrophic mechanism to *C. tepidum*. This seems quite plausible,

why sulfur is a healing agent.

Like vitamin D₃ sulfate, cholesterol sulfate is also water-soluble, and it too, unlike cholesterol, does not have to be packaged up inside LDL for delivery to the tissues.

Here I pose the interesting question: where do vitamin D₃ sulfate and cholesterol sulfate go once they are in the blood stream, and what role do they play in the cells? Surprisingly, as far as I can tell, nobody knows. It has been determined that the sulfated form of vitamin D₃ is strikingly *ineffective* for calcium transport, the well-known “primary” role of vitamin D₃.²⁹ However, vitamin D₃ clearly has many other positive effects (it seems that more and more are being discovered every day), and these include a role in cancer protection, increased immunity against infectious disease, and protection against heart disease. Researchers don’t yet understand how it achieves these benefits, which have been observed empirically but

remain unexplained physiologically. However, I strongly suspect it is the *sulfated* form of the vitamin that instantiates these benefits, and my reasons for this belief will become clearer in a moment.

One very special feature of cholesterol sulfate, as opposed to cholesterol itself, is that it is very agile: due to its polarity it can pass freely through cell membranes, almost like a ghost.³⁰ This means that cholesterol sulfate can easily enter a fat or muscle cell. I am developing a theory which at its core proposes an essential role for cholesterol sulfate in the metabolism of glucose for fuel by these cells. Below, I will show

especially considering that both human keratinocytes and *C. tepidum* can synthesize an interesting UV-B absorbing cofactor, tetrahydrobiopterin. This cofactor is found universally in mammalian cells, and one of its roles is to regulate the synthesis of melanin,³⁴ the skin pigment that is associated with a tan and protects the skin from damage by UV-light exposure.⁹ However, tetrahydrobiopterin is very rare in the bacterial kingdom, and *C. tepidum* is one of the very few bacteria that can synthesize it.³⁷

Let me summarize at this point where I’m on solid ground and where I’m speculating. It is undisputed that the skin synthesizes cholesterol sulfate in large amounts, and it has been suggested that the skin is the major supplier of cholesterol sulfate to the blood stream.³⁵ The skin also synthesizes vitamin D₃ sulfate upon exposure to sunlight. Vitamin D₃ is synthesized from cholesterol, with oxysterols (created from sun exposure) as an intermediate step (oxysterols are forms of cholesterol with hydroxyl groups attached at various places in the carbon chain). The body can’t synthesize vitamin D₃ sulfate from vitamin D₃,¹⁹ so it must be that sulfation happens first, producing cholesterol sulfate or hydroxy-cholesterol sulfate, which is then optionally converted to vitamin D₃ sulfate or shipped out “as is.”

Another highly significant feature of skin cells is that the skin stores sulfate ions attached to molecules that are universally present in the intracellular matrix, such as heparan sulfate, chondroitin sulfate, and keratin sulfate²⁶. Furthermore, it has been shown that exposure of the melanin-producing cells (melanocytes) to molecules containing reduced sulfur (-2) leads to *suppression* of melanin synthesis,⁷ whereas exposure to molecules like chondroitin sulfate that contain oxidized sulfur (+6) leads to enhancement of melanin synthesis.¹⁸ Melanin is a potent UV-light absorber, and it would compete with reduced sulfur for the opportunity to become oxidized. It is therefore logical that, when sulfur is reduced, melanin synthesis should be suppressed, so that sulfur can absorb the solar energy and convert it to very useful chemical bonds in the sulfate ion.

The sulfate would eventually be converted back to sulfide by a muscle cell in the heart or a skeletal muscle (simultaneously recovering the energy to fuel the cell and unlocking the oxygen to support aerobic metabolism of glucose), and the cycle would continually repeat.

Why am I spending so much time talking about all of this? Well, if I’m right, then the skin can be viewed as a solar-powered battery for the heart, and that is a remarkable concept. The energy in sunlight is converted into chemical energy in the oxygen-sulfur bonds, and then transported through the blood vessels to the heart and skeletal muscles. The cholesterol sulfate and vitamin D₃ sulfate are carriers that deliver the energy (and the oxygen) “door-to-door” to the individual heart and skeletal muscle cells.

Today’s lifestyle, especially in America, severely stresses this system. First of all, most Americans believe that any food containing cholesterol is unhealthy, so the diet is extremely low in cholesterol. Eggs are an excellent source of sulfur, but because of their high cholesterol content we have been advised to eat them sparingly. Second, as I discussed previously, natural food plant sources of sulfur are likely to be deficient due to sulfur depletion in the soil. Third, water softeners remove sulfur from our water supply, which would otherwise be a good source. Fourth, we have been discouraged from eating too much red meat, an excellent source of sulfur-containing amino acids. Finally, we have been instructed by doctors and other authoritarian sources to stay out of the sun and wear high SPF sunscreen whenever we do get sun exposure.

Another significant contributor is the high carbohydrate, lowfat diet, which leads to excess glucose in the blood stream, which glycates LDL particles and renders them ineffective in delivering cholesterol to the tissues. One of those tissues is the skin, so skin becomes further depleted in cholesterol due to glycation damage to LDL.

how cholesterol sulfate may be able to protect fat and muscle cells from damage due to exposure to glucose, a dangerous reducing agent, and to oxygen, a dangerous oxidizing agent. I will further argue that, with insufficient cholesterol sulfate, muscle and fat cells become damaged, and as a consequence become glucose intolerant, unable to process glucose as a fuel. This happens first to muscle cells but eventually to fat cells, as well. Fat cells become storage bins for fats to supply fuel to the muscles, because the muscles are unable to utilize glucose as fuel. Eventually, fat cells also become too disabled to release their stored fats. Fatty tissue then accumulates on the body.

SULFUR AND GLUCOSE METABOLISM

In order to understand my theory, you will need to know more about glucose metabolism. Skeletal muscle cells and fat cells break down glucose in the presence of oxygen in their mitochondria, and in the process they produce ATP, the basic energy currency of all cells. A glucose transporter called GLUT4 is present in the cytoplasm of muscle cells, and it migrates to the cell membrane upon stimulation by insulin. GLUT4 essentially acts as a key that unlocks the door, letting glucose into the cell, but, like a key, it only works when it's inserted in the membrane.

Both glucose and oxygen, unless they are carefully managed, can cause harm to the cell's proteins and fats. The glucose enters the cell within special cholesterol-rich sites in the cell wall called lipid rafts.¹⁶ This is likely orchestrated to protect the cell wall from damage, because extra cholesterol allows the vulnerable lipoproteins in the cell wall to pack more tightly and reduce their risk of exposure. In muscle cells, myoglobin is able to store additional oxygen, bound to an iron molecule safely sequestered in an interior cavity within the myoglobin protein.

Sulfur is a very versatile molecule, because it can exist in several distinct oxidative states, ranging from +6 (in the sulfate radical) to -2 (in hydrogen sulfide). Glucose, as a powerful reducing agent, can cause significant glycation damage to exposed proteins, leading to the formation of Advanced Glycation End Products (AGE's) that are extremely destructive to health: they are believed to be a major contributor to heart

disease risk.⁴ I hypothesize that, if sulfur (+6) is made available to glucose as a decoy, the glucose will be diverted into reducing the sulfur rather than glycating some vulnerable protein such as myoglobin.

In searching the Web, I came across an article written in the 1930s about the striking ability of *iron sulfate*, in the presence of the oxidizing agent hydrogen peroxide, to break down starch into simple molecules, even in the absence of any enzymes to catalyze the reaction.⁵ The article pointedly mentioned that *iron* works much better than other metals, and *sulfate* works much better than other anions. In the human body, starch is first converted to glucose in the digestive system. The muscle and fat cells only need to break down glucose. Thus, their task is easier, because the iron sulfate is now starting from an intermediate breakdown product of starch rather than from starch itself.

Where would the iron sulfate come from? It seems to me that the cholesterol sulfate, having hopped across the cell membrane, could transfer its sulfate radical to the myoglobin, whose iron molecule could provide the other half of the formula. In the process, the sulfur molecule's charge would be driven down from +6 to -2, releasing energy and absorbing the impact of the reducing effects of glucose, and therefore serving as a decoy to protect the proteins in the cell from glycation damage.

When the cell is exposed to insulin, its mitochondria are triggered to start pumping both hydrogen peroxide and hydrogen ions into the cytoplasm, essentially gearing up for the assault by glucose. If cholesterol sulfate enters the cell alongside the glucose, then all the players are available.

I conjecture that cholesterol sulfate is the catalyst that seeds the lipid raft. Iron sulfate is then formed by bonding the iron in the heme unit in myoglobin to a sulfate ion provided by cholesterol sulfate. The cholesterol is left behind in the cell wall, thus enriching the newly forming lipid raft with cholesterol. The hydrogen peroxide, provided by the mitochondria upon insulin stimulation, catalyzes the dissolution of glucose by the iron sulfate. The pumped hydrogen can pair up with the reduced sulfur (S^{-2}) to form hydrogen sulfide, a gas that can easily diffuse back

With insufficient cholesterol sulfate, muscle and fat cells become damaged and as a consequence become glucose intolerant.

across the membrane for a repeat cycle. The oxygen that is released from the sulfate radical is picked up by the myoglobin, sequestered inside the molecule for safe travel to the mitochondria. Glucose breakdown products and oxygen are then delivered to the mitochondria to complete the process, which ends with water, carbon dioxide and ATP, all while keeping the cell's cytoplasmic proteins safe from glucose and oxygen exposure.

If I'm right about this role for cholesterol sulfate both in seeding the lipid raft and in providing the sulfate ion, then this process breaks down miserably when cholesterol sulfate is not available. First of all, the lipid raft is not formed. Without the lipid raft, the glucose can not enter the cell. Intense physical exercise can allow glucose to enter the muscle cells even

in the absence of insulin.²⁷ However, this will lead to dangerous exposure of the cell's proteins to glycation (because there is no iron sulfate to degrade the glucose). Glycation interferes with the proteins' ability to perform their jobs, and leaves them more vulnerable to oxidation damage. One of the important affected proteins would be myoglobin: it would no longer be able to effectively carry oxygen to the mitochondria. Furthermore, oxidized myoglobin released into the blood stream by crippled muscle cells leads

SULFUR DEFICIENCY AND ALZHEIMER'S DISEASE

With an aging population, Alzheimer's disease is on the rise, and it has been argued that the rate of increase is disproportionately high compared to the increase in the raw number of elderly people.³⁷ Because of a conviction that the amyloid beta plaque, which is a signature of Alzheimer's, is also the cause, the pharmaceutical industry has spent hundreds of millions, if not billions of dollars pursuing drugs that reduce the amount of plaque accumulating in the brain. Thus far, drug trials have been so disappointing that many are beginning to believe that amyloid beta is not the cause after all. Recent drug trials have shown not only no improvement, but actually a further decline in cognitive function, compared to placebo. I have argued elsewhere that amyloid beta may actually be *protective* against Alzheimer's, and that problems with glucose metabolism are the true culprit in the disease.

Once I began to suspect sulfur deficiency as a major factor in Americans' declining health, I looked into the relationship between sulfur deficiency and Alzheimer's. Imagine my surprise when I came upon a web page posted by Ronald Roth, which shows a plot of the levels of various minerals in the cells of a typical Alzheimer's patient relative to the normal level (<http://www.acu-cell.com/dis-alz.html>). Remarkably, sulfur is almost non-existent in the Alzheimer's patient's profile.

To quote directly from that site: "While some drugs or antibiotics may slow, or if it should happen, halt the progression of Alzheimer's disease, sulfur supplementation has the potential of not only preventing, but actually reversing the condition, provided it has not progressed to a stage where much damage has been done to the brain. One major reason for the increase in Alzheimer's disease over the past years has been the bad reputation eggs have been getting in respect to being a high source of cholesterol, despite the fact of dietary intake of cholesterol having little impact on serum cholesterol, which is now also finally acknowledged by mainstream medicine. In the meantime, a large percentage of the population lost out on an excellent source of sulfur and a host of other essential nutrients by following the nutritional misinformation spread on eggs. Of course, onions and garlic are another rich source of sulfur, but volume-wise, they cannot duplicate the amounts obtained from regularly consuming eggs."

Why should sulfur deficiency be so important for the brain? I suspect that the answer lies in the mysterious molecule alpha-synuclein, which shows up alongside amyloid-beta in the plaque, and is also present in the Lewy bodies that are a signature of Parkinson's disease.²⁸ The alpha-synuclein molecule contains four methionine residues, and all four of the sulfur molecules in the methionine residues are converted to sulfoxides in the presence of oxidizing agents such as hydrogen peroxide.¹³ Just as in the muscle cells, insulin would cause the mitochondria of neurons to release hydrogen peroxide, which would then allow the alpha-synuclein to take up oxygen in a way that is very reminiscent of what myoglobin can do in muscle cells. The lack of sufficient sulfur would directly impact the neuron's ability to safely carry oxygen, again paralleling the situation in muscle cells. This would mean that other proteins and fats in the neuron would suffer from oxidative damage, leading ultimately to the neuron's destruction.

I have argued elsewhere that biologically pro-active restriction in glucose metabolism in the brain (a so-called type-III diabetes and a precursor to Alzheimer's disease) is triggered by a deficiency in cholesterol in the neuron cell membrane. Again, as in muscle cells, glucose entry depends upon cholesterol-rich lipid rafts, and, when the cell is deficient in cholesterol, the brain goes into a mode of metabolism that prefers other nutrients besides glucose.

I suspect that a deficiency in cholesterol would come about if there is insufficient cholesterol sulfate, because cholesterol sulfate likely plays an important role in seeding lipid rafts, while concurrently enriching the cell wall in cholesterol. The cell also develops an insensitivity to insulin, and, as a consequence, anaerobic metabolism becomes favored over aerobic metabolism, reducing the chances for alpha-synuclein to become oxidized. Oxidation actually protects alpha-synuclein from fibrillation, a necessary structural change for the accumulation of Lewy bodies in Parkinson's disease (and likely also Alzheimer's plaque).¹³

to painful and crippling rhabdomyolysis, and possible subsequent kidney failure. This explanation accounts for the observation that sulfur deficiency leads to muscle pain and inflammation.

METABOLIC SYNDROME

The metabolic syndrome is a term used to encapsulate a complex set of markers associated with increased risk to heart disease. The profile includes (1) insulin resistance and dysfunctional glucose metabolism in muscle cells; (2) excess triglycerides in the blood serum; (3) high levels of LDL, particularly small dense LDL, the worst kind; (4) low levels of HDL (the “good” cholesterol) and reduced cholesterol content within the individual HDL particles; (5) elevated blood pressure; and (6) obesity, particularly excess abdominal fat. I have argued previously that this syndrome is brought on by a diet that is high in empty carbohydrates (particularly fructose) and low in fats and cholesterol, along with a poor vitamin D status.³⁵ While I still believe that all of these factors are contributory, I would now add another factor as well: insufficient dietary sulfate.

I have described in a previous essay my interpretation of obesity as a condition driven by a need for abundant fat cells to convert glucose to fat because the muscle cells are unable to efficiently utilize glucose as fuel. With sulfur deficiency comes the answer as to why muscle cells would be defective in glucose management: they can’t come up with enough cholesterol sulfate to seed the lipid raft needed to import the glucose.

An alternative way to overcome a muscle cell’s defective glucose metabolism is to exercise vigorously, so that the generated AMPK (an indicator of energy shortage) induces the GLUT4 to migrate to the membrane even in the absence of insulin.²⁷ Once the glucose is inside the muscle cell, however, the iron-sulfate mechanism just described is dysfunctional, both because there’s no cholesterol sulfate and because there’s no hydrogen peroxide. Additionally, with intensive exercise there’s also a reduced supply of oxygen, so the glucose must be processed anaerobically in the cytoplasm to produce lactate. The lactate is released into the blood stream and shipped to the heart and brain, both of which are able to use it

as fuel. But the cell membrane remains depleted in cholesterol, and this makes it vulnerable to future oxidative damage.

Another way to compensate for defective glucose metabolism in the muscle cells is to gain weight. Fat cells must now convert glucose into fat and release it into the blood stream as triglycerides, to fuel the muscle cells. In the context of a lowfat diet, sulfur deficiency exacerbates the problem. Sulfur deficiency interferes with glucose metabolism, so it’s a much healthier choice simply to avoid glucose sources (carbohydrates) in the diet; i.e. to adopt a very low-carb diet. Then the fat in the diet can supply the muscles with fuel, and the fat cells are not burdened with having to store up so much reserve fat.

Insulin suppresses the release of fats from fat cells.³² This forces the fat cells to flood the bloodstream with triglycerides when insulin levels are low, that is, after prolonged periods of fasting, such as overnight. The fat cells must dump enough triglyceride into the bloodstream during fasting periods to fuel the muscles when the dietary supply of carbohydrates keeps insulin levels elevated, and the release of fats from the fat cells is repressed. As the dietary carbs come in, blood sugar levels rise dramatically because the muscle cells can’t utilize them.

The liver also processes excess glucose into fat, and packages it up into LDL, to further supply fuel to the defective muscle cells. Because the liver is so preoccupied with processing glucose and fructose into LDL, it falls behind on the generation of HDL, the “good” cholesterol. So the result is elevated levels of LDL, triglycerides, and blood sugar, and reduced levels of HDL, four key components of the metabolic syndrome.

The chronic presence of excess glucose and fructose in the blood stream leads to a host of problems, all related to glycation damage of blood stream proteins by glucose exposure. One of the key proteins that gets damaged is the apolipoprotein, apoB, which is encased in the membrane of the LDL particles. Damaged apoB inhibits the ability of LDL to efficiently deliver its contents (fat and cholesterol) to the tissues. Fat cells again come to the rescue, by scavenging the broken LDL particles (through a mechanism that does not require apoB to be healthy), taking them apart, and extracting and refurbishing their

Sulfur deficiency interferes with glucose metabolism. In the context of a lowfat diet, sulfur deficiency becomes that much worse a problem.

A fascinating set of experiments has shown that the sulfate ion attached to oxidized forms of cholesterol is highly protective against fatty streaks and atherosclerosis.

cholesterol. In order to function properly, the fat cells must have intact apoE, an antioxidant that cleans up oxidized cholesterol and transports it to the cell membrane for delivery to HDL particles.

FAT CELLS, MACROPHAGES, AND ATHEROSCLEROSIS

While diligently converting glucose to stored fats, the fat cells are awash in glucose, which damages their apoE through glycation.²⁰ Once their apoE is damaged, they can no longer transport cholesterol to the membrane. Excess cholesterol accumulates inside the fat cells and eventually destroys their ability to synthesize proteins. Concurrently, their cell membranes become depleted in cholesterol, because they can no longer deliver it to the membrane.³⁴ A fat cell that has deteriorated to this degree has no choice but to die: it sends out distress signals that call in macrophages. The macrophages essentially consume the dysfunctional fat cell, wrapping their own membrane around the fat cell's membrane that is now barely able to hold its contents inside.⁸

Macrophages are also principal players in the fatty streaks that appear along the sides of major arteries leading to the heart, and are associated with plaque build-up and heart disease. In a fascinating set of experiments, Ma and others²² have shown that the sulfate ion attached to oxidized forms of cholesterol is highly *protective* against fatty streaks and atherosclerosis.

In a set of in-vitro experiments, they demonstrated diametrically opposite reactions from macrophages to 25-hydroxyl cholesterol (25-HC) versus its sulfoconjugate 25-hydroxyl cholesterol *sulfate* (25-HC3S). Whereas 25-HC present in the medium causes the macrophages to synthesize and store cholesterol and fatty acids, 25-HC3S has the exact opposite effect: it promotes the release of cholesterol to the medium and causes fat stores to shrink. Furthermore, while 25-HC added to the medium led to apoptosis and cell death, 25-HC3S did not. I suggest that the sulfate radical is essential for the process that feeds cholesterol and oxygen to the heart muscle.

MUSCLE WASTING DISEASES

I recently came upon a remarkable article in a 1997 issue of *FASEB*¹¹ which develops a persuasive theory that low blood serum levels of

two sulfur-containing molecules are a characteristic feature of a number of disease conditions. All of these diseases are associated with muscle wasting, despite adequate nutrition. The authors have coined the term "low CG syndrome" to represent this observed profile, where "CG" stands for the amino acid "cysteine," and the tripeptide "glutathione," both of which contain a sulfhydryl radical "-S-H" that is essential to their function. Glutathione is synthesized from the amino acids cysteine, glutamate and glycine, and glutamate deficiency figures into the disease process as well, as I will discuss later.

The list of disease conditions associated with low CG syndrome is surprising and very revealing: HIV infection, cancer, major injuries, sepsis (blood poisoning), Crohn's disease (irritable bowel syndrome), ulcerative colitis, chronic fatigue syndrome and athletic over-training.

This paper fills in some missing holes in my theory, but the authors never suggest that sulfur deficiency might actually be a precursor to the development of low CG syndrome. I think that, particularly with respect to Crohn's disease, chronic fatigue syndrome and excessive exercise, sulfur deficiency may precede and provoke the muscle wasting phenomenon. The biochemistry involved is complicated, but I will try to explain it in as simple terms as possible.

I will use Crohn's disease as my primary focus for discussion: an inflammation of the intestines, associated with a wide range of symptoms, including reduced appetite, low-grade fever, bowel inflammation, diarrhea, skin rashes, mouth sores and swollen gums. Several of these symptoms suggest problems with the interface between the body and the external world, for example, a vulnerability to invasive pathogens. I mentioned before that cholesterol sulfate plays a crucial role in the barrier that keeps pathogens from penetrating the skin. It logically plays a similar role everywhere there is an opportunity for bacteria to invade, and certainly a prime opportunity is available at the endothelial barrier in the intestines. Thus, I hypothesize that the intestinal inflammation and low-grade fever are due to an overactive immune system, necessitated by the fact that pathogens have easier access when the endothelial cells are deficient in cholesterol sulfate. The skin rashes and mouth and gum

problems are a manifestation of inflammation elsewhere in the barrier.

Ordinarily, the liver supplies cholesterol sulfate to the gall bladder, where it is mixed into bile acids, and subsequently released into the digestive system to assist in the digestion of fats. If a person consistently eats a lowfat diet, the amount of cholesterol sulfate delivered to the digestive system from the liver will be reduced. This will logically result in a digestive system that is more vulnerable to invasion by pathogens.

The sulfate that's combined with cholesterol in the liver is synthesized from cysteine, therefore insufficient bioavailability of cysteine will lead to a reduced production of cholesterol sulfate by the liver. This will, in turn, make it difficult to digest fats, likely, over time, compelling the person to adhere to a lowfat diet. Whether lowfat diet or sulfur deficiency comes first, the end result is a vulnerability to infective agents in the intestines, with a consequential heightened immune response.

Dröge¹¹ further discusses how a reduction in the synthesis of sulfate from cysteine in the liver leads to increased compensatory activity in another biological pathway in the liver, one that converts glutamate to arginine and urea. Glutamate is highly significant because it is produced mainly by the breakdown of amino acids (proteins in the muscles), for example, by muscle wasting. The muscle cells are triggered to cannibalize themselves in order to provide adequate glutamate to the liver, mainly, in my view, in order to generate enough arginine to replace the role of sulfate in muscle glucose metabolism. (These activities in the liver and muscles are circular and mutually supportive.)

Arginine is the major source of nitric oxide (NO) and NO is the next best thing for muscle glucose metabolism in the absence of cholesterol sulfate. NO is a poor substitute for SO_4^{2-} , but it can function in some of the missing roles. As you will recall, I propose that cholesterol SO_4^{2-} accomplishes a number of important things in muscle cells: it delivers oxygen to myoglobin, it supplies cholesterol to the cell membrane, it helps break down glucose, it protects the cell's proteins from glycation and oxidation damage, and it provides energy to the cell. NO can help in reducing glycation damage, as nitrogen can

be reduced from +2 to 0 (whereas sulfur reduces from +6 to -2). It also provides oxygen, but it is unable to transfer the oxygen directly to myoglobin by binding with the iron molecule, as is the case for sulfate. NO does not supply cholesterol, so cholesterol deficiency remains a problem, leaving the cell's proteins and fats more vulnerable to oxidative damage. Furthermore, NO itself is an oxidizing agent, so myoglobin becomes disabled, due to both oxidation and glycation damage. The muscle cell, therefore, engages in mitochondrial oxidation of glucose at its own peril: better to revert to anaerobic metabolism of glucose to decrease the risk of damage. Anaerobic metabolism of glucose results in a build-up of lactic acid, which, as explained in Dröge¹¹ further enhances the need for the liver to metabolize glutamate, thus augmenting the feedback loop.

Furthermore, if I'm right about cholesterol sulfate seeding lipid rafts, then, with a cholesterol sulfate deficiency, the entry of both glucose and fat into the muscle cell is compromised. This situation leaves the cell with little choice but to exploit its internal proteins as fuel, manifested as muscle wasting.

In summary, a number of different arguments lead to the hypothesis that sulfur deficiency causes the liver to shift from producing cholesterol sulfate to producing arginine (and subsequently nitric oxide). This leaves the intestines and muscle cells vulnerable to oxidation damage, which can explain both the intestinal inflammation and the muscle wasting associated with Crohn's disease.

The immune system depends upon abundant cholesterol to defend against severe stress. I have previously argued that high serum cholesterol is protective against sepsis. It is worth repeating here the abstract from *Critical Care*,³⁸ which studied changes in blood cholesterol levels following trauma, infection and multiple organ failure: "Hypocholesterolemia is an important observation following trauma. In a study of critically ill trauma patients, mean cholesterol levels were significantly lower (119 ± 44 mg/dl) than expected values (201 ± 17 mg/dl). In patients who died, final cholesterol levels fell by 33 percent versus a 28 percent increase in survivors. Cholesterol levels were also adversely affected by infection or organ system dysfunction."

Whether lowfat diet or sulfur deficiency comes first, the end result is a vulnerability to infective agents in the intestines, with a consequential heightened immune response.

SULFUR AS A PROTECTIVE AGENT AGAINST RADIATION DAMAGE

Sulfur-containing biological molecules like glutathione and the amino acids cysteine and methionine play an important role in redox (oxidation/reduction) reactions by tempering the damaging effects of reactive oxygen species (ROS); that is, by acting as potent antioxidants.¹ Closely related to this role in protecting from oxidation damage associated with aerobic metabolism is the potential role of sulfur in protection from radiation damage due to sun exposure, radiation treatments for cancer, or radiation exposure following a nuclear reactor meltdown.

An awareness that sulfur protects against ionizing radiation dates back to at least 1949.¹⁰ An enlightening article from 1983⁵ showed, via experiments conducted at very low temperatures, that sulfur's reaction to radiation is a secondary effect. The associated primary effect is ionization of oxygen, producing the highly reactive species, O_2^- . Sulfur then responds by binding to the O_2^- and thus preventing other molecules from reacting adversely with it.

Through an extensive review of the research literature on the response of human skin to the radiation in sunlight, I have come up with a theory for how sulfur could be intimately involved not just in preventing harm from sunlight, but rather by contrast in *harnessing* the sun's energy and putting it to good use. I propose that sulfur, readily available from the active cysteines in an enzyme called (inappropriately) endothelial nitric oxide synthase (eNOS), reacts with two O_2^- ions produced by sunlight exposure to produce the highly stable and useful anion, sulfate. This reaction would take place in a cavity formed by two abutting molecules of eNOS (that is, an eNOS dimer). A positively charged zinc atom centered in the cavity⁸ draws in the two O_2^- ions to combine them with a nearby sulfur atom attached to a cysteine residue, to form a sulfate anion SO_4^{2-} . The sulfate, then, in a subsequent reaction, combines with cholesterol to form cholesterol sulfate, a prominent component of the outer layers of the skin (and also of hair, feathers, fur and fingernails).

An article that appeared in 2002 on the effects of irradiation treatment on aortic endothelial cells⁴ revealed that irradiation induces expression of another "inducible" nitric oxide synthase, iNOS. My belief is that the purpose of the iNOS in this case is identical to the purpose of eNOS in the skin: to mop up anticipated O_2^- radicals produced by the radiation, and to convert them to sulfate. The authors showed that if the cells are supplied with the substrate to produce nitric oxide, L-arginine, then this causes them to initiate a programmed cell death reaction called apoptosis. What happens is that the L-arginine binds to the iNOS (and the eNOS as well) and deflects these enzymes towards producing nitric oxide rather than sulfur dioxide. Unfortunately, under the right circumstances, nitric oxide can turn into the highly reactive species ONOO⁻ (known in the vernacular as "oh, no!")⁹ and this can make the cell non-viable.

A highly significant fact that supports a primary role for the NOS's in producing sulfate is that red blood cells have an abundance of eNOS, but they are very careful to keep out its substrate L-arginine.⁶ This act has puzzled researchers, but the answer becomes clear when you realize that red blood cells are strong producers of cholesterol sulfate,¹¹ as well as major carriers of oxygen. This makes them a prime candidate for using eNOS to convert oxygen to sulfate (taking advantage of sunlight as a catalyst), and then shipping it to the tissues via the carrier molecule cholesterol sulfate. This action would both protect the red blood cell from oxidative damage and reduce the risk of damage due to oxygen exposure in other cells, as the oxygen supply contained in the sulfate constitutes safe transport of oxygen to these cells. I have little doubt that this is a productive (but overlooked) mode of oxygen transport in the body.

The sulfur in cysteine plays a crucial role in protecting proteins from radiation damage. In experiments conducted in the late 1950s³, it was shown that proteins needed to contain only half a percent of cysteine by weight to be immune to any damage to the other amino acids in the protein. Proteins containing no cysteine produced complex irradiation spectra indicating that diverse chemical reactions had taken place.

An article from *Nature* in 1962² showed that sulfur has a remarkable ability to protect macromolecules in colloidal suspensions against cross-linking upon exposure to radiation. The effect was much larger than what the authors would have expected, given their understanding of possible mechanisms, so there is still something mysterious about sulfur's protective role. Since molecules in the blood serum are in some sense a colloidal suspension, this behavior has relevance to protection from ionizing radiation of proteins like serum albumin, which contains significant amounts of cysteine.

The best source of sulfur is the protein from animal products such as meat, fish and eggs. Sulfur is becoming depleted from the soil, so vegetables contain even less sulfur than they used to. It is therefore highly likely that vegetarians suffer from sulfur deficiency, which could affect their susceptibility to damage from radiation exposure.

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Thus, many of these conditions/diseases that lead to muscle wasting may do so because cholesterol (and therefore cholesterol sulfate) is depleted from the blood serum. This results in the same feedback loop between the liver and the muscles that I discussed with regard to Crohn's disease. I think it's plausible that the muscle wasting associated with all of these conditions is caused by this same feedback mechanism.

I have discussed the role cysteine plays in providing sulfate to the liver. But what is the role of glutathione, the other sulfur-containing protein that's depleted in low GC syndrome? Muscle cells ordinarily contain significant levels of glutathione, and its depletion leads to mitochondrial damage.²³ Patients undergoing surgical trauma have been found to exhibit reduced glutathione levels in their skeletal muscles.²¹ It is tempting to speculate that cholesterol sulfate provides the sulfur needed for glutathione synthesis, so that the deficiency would be explained by the reduced availability of cholesterol following the immune system's heightened response to surgical trauma. Glutathione is a potent antioxidant, so its deficiency will further contribute to dysfunction of the muscle cell's mitochondria, therefore greatly impairing its energy supply.

There is a growing awareness that glutathione deficiency may play a role in many diseases. Whether the problems that arise are just due to insufficient supply of the glutathione molecule itself, or whether a more general sulfur deficiency is the root cause, is perhaps hard to say, but provocative nonetheless.

IN CONCLUSION

Modern lifestyle practices conspire to induce major deficiencies in cholesterol sulfate and vitamin D₃ sulfate. We are encouraged to actively avoid sun exposure and to minimize dietary intake of cholesterol-containing foods. We are encouraged to consume a high-carbohydrate, lowfat diet which, as I have argued previously,³⁴ leads to impaired cholesterol uptake in cells.

Fortunately, correcting these deficiencies at the individual level is easy and straightforward. If you just throw away the sunscreen and eat more eggs, those two steps alone may greatly increase your chances of living a long and healthy life.



Stephanie Seneff, PhD received her Bachelor's degree in Biology with a minor in Food and Nutrition in 1968 from MIT. She received her Master's and PhD degrees in Electrical Engineering and Computer Science in 1979 and 1985, respectively, also from MIT. Since then, she has been a researcher at MIT, where she is currently a Senior Research Scientist in the Department of Electrical Engineering and Computer Science, and a Principal Investigator in the MIT Computer Science and Artificial Intelligence Laboratory. Throughout her career, Dr. Seneff has conducted research in diverse areas including human auditory modeling, spoken dialogue systems, natural language processing, human language acquisition, information retrieval and summarization, computational biology, and marine mammal socialization. She has published over one hundred fifty refereed articles on these subjects, and has been invited to give keynote speeches at several international conferences. She has also supervised numerous Master's and PhD theses at MIT. She has recently become interested in the effect of drugs and diet on health and nutrition, and she has written several essays on the web articulating her view on these topics. She is the first author of two recently published nutrition-related journal papers, one on the metabolic syndrome and one on Alzheimer's disease. Two papers on theories related to cholesterol sulfate are currently under review. Stephanie will give an all-day workshop on metabolism at Wise Traditions 2011.

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The Salt of the Earth

Why Salt is Essential to Health and Happiness

By Sally Fallon Morell, MA

A national program to reduce dietary salt "could prevent tens of thousands of heart attacks, strokes, and deaths and trim as much as \$24 billion from the U. S. health care tab, according to a study published Wednesday in the *New England Journal of Medicine*."¹ So began a January 21, 2010 *Wall Street Journal* article on salt. "The study, a computer simulation, suggested that the impact would be similar to prevention strategies such as quitting smoking, lowering cholesterol or modest weight loss" as an "effective weapon against high blood pressure and cardiovascular disease." According to Kirsten Bibbins-Domingo, lead author of the study, "The time is right now to consider efforts to achieve population-wide reduction in salt intake."

We have heard words like this before. In the 1970s, the McGovern Committee on Dietary Goals assured Americans that our ten greatest killers would be resolved by the simple measure of substituting polyunsaturated oils for animal fats. Now, forty years later, Americans have largely abandoned animal fats for industrial oils, with disastrous consequences—our ten greatest disease killers have only increased, and the pall of disease has now settled on our children as well. At least in the case of saturated fat we have a substitute, albeit a poor one—refined carbohydrates, which the body very efficiently turns into saturated fat. But as far as the body is concerned, there is no substitute for salt.

Western
people
today
consume
about half the
amount of
salt that they
consumed
traditionally.

VITAL TO HEALTH

Salt, of course, is vital to health. There's a reason we have a salt taste in our mouths and a reason that foods taste better with salt. The desire for salt is not some cruel joke imposed by a capricious god, but acts to ensure that we eat our food with salt.

The body's interior ocean is salty, and without salt the myriad chemical reactions that support enzyme function, energy production, hormone production, protein transport and many other biochemical processes simply can't work. The chemical requirements of the human body demand that the salt concentration in the blood be kept constant. If the body does not get enough salt, a hormonal mechanism compensates by reducing the excretion of salt in the urine and sweat. But it cannot reduce this output to zero. On a completely saltless diet, the body steadily loses small amounts of salt via the kidneys and sweat glands—more if the body is engaging in vigorous physical activity. It then attempts to adjust to this loss by accelerating its secretion

of water, so that the blood's salt concentration can be maintained at the vital level. The result is a gradual desiccation of the body and finally death. The organism literally dies of thirst.

Western people today consume about half the amount of salt that they consumed traditionally. Before the days of refrigeration, most of our meat and fish was preserved by salting it. The Japanese, who have one of the highest salt intakes in the world, also have the highest life expectancy.

Salt provides two elements that are essential for life and for good health: sodium and chloride ions. They are both elements that the body cannot manufacture itself so it must be supplied by food. Although salt is the most common dietary source for these essential elements, sodium is also available from various foods that contain sodium naturally.

Sodium is a mineral element that plays a critical role in body physiology. It controls the volume of fluid in the body and helps maintain the acid-base level. About 40 percent of the

SALT, ESSENTIAL NUTRIENT Message from The Salt Institute

Salt is an essential nutrient. This is a technical descriptor, not marketing hype. An essential nutrient is one required for life that the body cannot produce itself and which is required for good health. For humans, salt is as essential as water. We can perish from too little salt as we can of thirst. The human body contains about eight ounces of salt. The amount of salt is regulated in our bodies by our kidneys and by perspiration.

One component of salt, sodium (Na), is involved in muscle contraction including heartbeat, nerve impulses, and the digestion of body-building protein. Sodium is easily absorbed and is active in the absorption of other nutrients in the small intestine. Sodium is the major extracellular electrolyte responsible for regulating water balance, pH, and osmotic pressure. It is important in nerve conduction. Because of sodium's importance to the body, several interacting mechanisms, including generation of hormones angiotensin and aldosterone, adjust the system in the event of consumption of insufficient amounts of salt, which would threaten the body's nerves and muscles and interfere with the sodium-potassium "pump" that adjusts intra- and extra-cellular pressures. If your salt intake varies widely, these mechanisms activate to ensure that your body remains healthy, maintaining a relatively constant blood pressure.

The other component of salt, chloride (Cl), is also essential to good health. It preserves acid-base balance in the body, aids potassium absorption, supplies the essence of digestive stomach acid, and enhances the ability of the blood to carry carbon dioxide from respiring tissues to the lungs.

Because salt is essential to good health, the human body is hard-wired with an innate salt appetite. Around the world, population salt intakes vary somewhat, but nearly all fall within what eminent medical researcher Bjørn Folkow termed the "hygienic safety range" of sodium intake, between 2,300 mg per day and 4,600 mg per day or even 5,750 mg per day. In common English measures, that would be one to two or two-and-one-half teaspoons of salt per day. A few remote peoples lacking access to salt apparently consume far below 2,300 mg per day of sodium while a few others consume diets heavy with salted fish and vegetables, but virtually every society with access to salt consumes amounts within the "safety range." Intakes in North America and most of Europe average about 3,500 mg per day — right in the middle of this range. Some public health agencies feel these intake levels are too high, but consumption levels are unchanged over the past century when medical instruments allowed accurate measurements.

SOURCE: <http://www.saltinstitute.org/Uses-benefits/Salt-in-Food/Essential-nutrient>

body's sodium is contained in bone, some is found within other organs and cells and the remaining 55 percent is in blood plasma and extracellular fluids. Sodium is important in proper nerve conduction, in aiding the passage of various nutrients into cells, and in the maintenance of blood pressure.

Chloride ions also help maintain proper blood volume, blood pressure, and pH of body fluids. Chloride is the major extracellular anion and contributes to many body functions including the maintenance of blood pressure, acid-base balance, muscular activity, and the movement of water between fluid compartments. While sodium is present in a variety of foods, chloride is not; adequate chloride must be obtained from salt.

BLOOD PRESSURE

One of salt's major functions is to regulate blood volume and pressure, including the flexibility of the blood vessels. Blood pressure can be affected by stress, age, exercise, heredity and diet. For certain individuals who are salt sensitive, excessive consumption of sodium can increase blood pressure, but for the majority, blood pressure is not raised by increased salt intake. In an average population when salt intakes are reduced, about 30 percent will experience a small drop in blood pressure, between one and four mm Hg, while about 20 percent will experience a similar *increase* in blood pressure. The remaining 50 percent of the population will show no effect at all of salt intake reduction. In most people, even a drastic increase in salt consumption does not raise blood pressure.²

Nevertheless, the entire debate on salt and health has almost exclusively focused on the issue of blood pressure, with little regard to any other risk factors or biomarkers resulting from a variation in salt intake.

NERVOUS SYSTEM

Sodium and chloride ions play an important role in the firing of the nervous system neurons. Changes in the concentrations of sodium and chloride ions cause an action potential to fire, allowing a neuron to send a signal to other cells. This results in sending the proper signals throughout the body to elicit all of our physiological reactions including mechanical movement of muscles. Changing the consumption of salt has a minimal impact on the nervous system. Only at extreme levels of sodium deficiency will responses in the nervous system be noticed.

METABOLISM AND DIGESTION

Almost all the salt taken in with food or beverages is quickly absorbed from the small intestine and rapidly finds its way to the circulatory system and the extracellular space of tissues. During rapid growth, a considerable amount of sodium is taken up by the skeletal system and other tissues. After maturity, in a healthy person, all salt that is taken in, regardless of quantity, is compensated for by the daily elimination of the same quantity through our normal excretory channels. In fact, our kidneys are capable of filtering an incredibly large quantity of sodium on

REFINED AND "FORTIFIED" SALT

Most table salt today is "refined" or "purified," a process that usually involves recrystallization. In recrystallization, a brine solution is treated with chemicals that precipitate most "impurities," that is magnesium and trace minerals. Multiple stages of evaporation are then used to collect pure sodium chloride crystals, which are kiln-dried.

During the drying process, an anti-caking compound is added to the brine—this ensures that the salt will "pour when it rains." Some anticaking agents used are sodium ferrocyanide, tricalcium phosphate, calcium or magnesium carbonates, fatty acid salts (acid salts), magnesium oxide, silicon dioxide, calcium silicate, sodium aluminosilicate, and calcium aluminosilicate. The ferrocyanide and aluminosilicate compounds give the most cause for concern.

Since salt use is ubiquitous, health officials have naturally eyed it as a vehicle for delivering nutrients considered in short supply. The practice of adding iodine to salt began in the 1920s—salt manufacturers, notably Morton's Salt, added minute amounts of potassium iodide, sodium iodide, or sodium iodate to help reduce the incidence of iodine deficiency in humans. Tested first on school girls in Cleveland, the iodized salt completely eliminated goiters. In Switzerland, many cantons introduced iodized salt, and those districts where it was used experienced a decline almost to zero in the incidence of goiter. In spite of these successes, mass iodine supplementation programs met with much resistance, especially as side effects emerged. While the programs almost completely eliminated goiter, the prevalence of autoimmune thyroiditis increased in areas with iodated water or in those using iodized salt. Iodization of salt, especially as it is used in processed food, poses real problems for those who are sensitive to iodine.

Some European countries, where water fluoridation is not practiced, also add fluoride to table salt. In France, 35 percent of table salt sold contains either sodium fluoride or potassium fluoride and use of fluoridated salt is widespread in South America. Added folic acid gives salt a yellow color, and health officials in some countries have considered adding iron to salt.

Our advice: avoid all processed, refined, "enhanced," and "fortified" salt; stick to unrefined sea salt or mined salt, of which there are many brands listed in the Weston A. Price Foundation Shopping Guide.

a daily basis (the daily equivalent of six pounds of salt).

Salt plays a key role in digestion. Sodium-dependent enzymes are required for carbohydrate digestion, to break down complex carbohydrates and sugars into monosaccharides such as glucose, fructose and galactose; sodium is also involved in transporting these monosaccharides across the intestinal wall.

Salt is our main dietary source of chloride, the major component of hydrochloric acid, needed for protein digestion. Hydrochloric acid also plays a role in keeping parasites and pathogens from entering the digestive tract—parasites can easily gain a foothold in those on low-salt diets. Other symptoms of hypochlorhydria (low hydrochloric acid) include bloating, acne, iron deficiency, belching, indigestion, diarrhea and multiple food allergies.

So we need salt for digesting carbohydrates and proteins; we also need salt for digesting fats as sodium is involved in the manufacture of bile, which emulsifies fats so that they can be absorbed.

SALT AND THE BRAIN

Salt is critical for development of the glial cells in the brain. Between 1984-1991, Mary Enig, PhD, served as an expert witness in several law suits involving two brands of chloride-deficient soy formula, Neo-Mul-Soy and CHOFree, both produced by a company called Syntex. The plaintiffs argued that by removing chloride

(in the form of sodium chloride) from the formula, their children did not achieve their full intellectual potential. Dr. Enig testified that chloride was essential for the growth of the brain and development of neurological function, and that sodium activated an enzyme needed for the formation of glial cells.³ Syntex went out of the infant formula business because of adverse publicity about their products, and the formula industry now knows better than to produce formula without salt, but many so-called experts advise pregnant and nursing mothers to adopt a low-salt diet, or to restrict salt in the diets of their infants.

ADRENAL FUNCTION

The adrenal glands are responsible for the release and regulation of over fifty of the body's hormones, including sex hormones and hormones that regulate blood pressure, glucose levels, mineral metabolism, healing and stress response. They produce the body's supply of epinephrine and norepinephrine, which help regulate metabolism. Adequate salt helps the adrenal glands to produce the hormones needed to keep the body's metabolism running smoothly; for example, vitamin C transport into the adrenal glands is sodium-dependent, and vitamin C is an enzymatic cofactor involved in the production of a number of adrenal hormones.

Craving salt is a sign of poor adrenal function. The adrenal hormone aldosterone helps regulate blood pressure. When levels of aldosterone drop, which often happens during periods of stress or fatigue, the body responds by craving salt to help stabilize blood pressure.

LOW SALT HAZARDS

In 1936, a British researcher named McCance published the results of a seminal study in which three human beings were put on a salt-free diet combined with sweating, to quickly reduce the salt levels in the body.⁵ They immediately lost weight and began to look ill. Their sense of taste and smell was affected—foods became tasteless and fatty foods made them nauseous. Even though they drank a lot of water, they got no relief from the sensation of thirst. Two of the three were troubled by nightmares.

PREMATURE BABIES NEED SALT!

Salt is critical to the brain development of premature babies. In premature babies, language, memory, intelligence and coordination were all better in children whose diets had been supplemented with salt shortly after birth.

The study focused on 37 children who had been monitored since birth. All had been born before or at 33 weeks of pregnancy. Between the ages of 10 and 13 the children were tested for competency in movement and balance, IQ, memory, learning, and language. They were also assessed for behavioral problems. All the tests used were recognised and validated measures of performance.

Sixteen of the children had received a salt supplement of 4 to 5 millimoles per kg of body weight a day - about one twentieth of a teaspoon - in their feed four to 14 days after birth; the other 21 children had not.

The results showed that on average, the children whose feeds had been supplemented with salt scored 10 per cent higher than their prematurely born peers in memory, learning and language. And their physical coordination, IQ, general memory and behavior were significantly better.

The authors conclude that babies born several weeks early require a higher salt intake for their first two weeks of life than babies born after the full nine months or thereabouts. And they suggest that failure to supplement a premature newborn's diet with salt could compromise their subsequent neurodevelopment in childhood.

SOURCE: http://backend.innovations-report.com/html/reports/medicine_health/report-8234.html

They suffered from frequent cramps, they became apathetic, had difficulty speaking and their mental capacity was dulled. All returned to normal health and vigor shortly after resuming salt intake.

In a study with rats, researchers found that rats on salt-deprived diets shied away from activities they normally enjoyed—a sign of depression. They concluded that salt is a natural mood booster.⁵

By the way, one hazard of beer drinking is a disease called Beer Potomania, a condition of low blood sodium common among beer drinkers. The condition is characterized by fatigue, confusion, dizziness and in extreme cases coma—so if you pass out at the bar, too much beer is not necessarily to blame, it might be a case of not enough salty peanuts.⁶

A BRIEF HISTORY OF SALT

Demonization of a substance so vital to our health could only happen in a society ignorant of the history of salt.

The use of salt by humans is intimately connected with our advance from a nomadic stone age life of hunting and gathering, to agriculture in which grain cereals became an important food. Salt is needed to make these foods taste good, and also to preserve meats and dairy foods for storage and transport. Increased use of salt led to increased production of glial cells in the brain, the cells that make us capable of creative thinking and longterm planning. Indeed, in ancient cultures, salt was considered the gift of the gods. Homer referred to salt as a "divine substance" and Plato described it as "especially dear to the gods." The Celtic word for salt meant "holy" or "sacred."

The hunter gatherer obtains the salt he needs from the blood of animals (and sometimes the urine), which concentrate salt from the plants that they eat. Areas where there is very little sodium in the soil will support only small numbers of human beings.⁷

The quest for salt led to the development of the major trade routes in the ancient world. If you look at a map of the world showing the major accessible salt deposits, there you will also see where civilizations developed—in Jordan, the Tigris-Euphrates, the Yellow River of China,

the salt swamps in Persia, the deserts of Egypt and the Sahara; in the New World in Central America, the Andes and the Great Lakes; and finally on the seacoasts in areas of abundant sunshine, where salt could be obtained from evaporated sea water.

Roman soldiers were paid partly in salt—our word salary is derived from the Latin word for salt, *salarium*. The Romans were noted for sausages, called *salsus*, because so much salt was used to make them tasty and to preserve them. Having control of the salt supplies in the Dead Sea region was critical to the process of Roman empire-building. They needed salt for their vast armies, and to preserve meat and fish for these armies.

An interesting article published in *Scientific American*, 1963, describes the social influence of salt.⁸ The salt trade, over land and sea, had military, social and political consequences. The caravans and ships carrying salt needed protection against bandits; thus a system of protection came into existence.

A certain political pattern emerges: where salt was plentiful, the society tended to be free, independent and democratic; where it was scarce, those who controlled the salt controlled the people. For example, along the shores of the Mediterranean and the North Sea, where salt was plentiful, farmers and fishermen nourished free societies. In contrast, areas of the world that had to import most of their salt or obtain it from small, isolated sources show a more autocratic pattern, a history of frequent conflict, monopoly and all-powerful rulers. In the ancient river valley civilizations of the Nile, Babylon, India, China, Mexico and Peru, the kings and priests maintained their rule and obtained their income through their monopoly of salt, on which the population was hopelessly dependent.

In Europe, a large portion of the salt was obtained from low-lying flat lands at the ocean's edge, where seawater flowed into natural or diked pans and then was evaporated by the action of the sun. From tracing old shorelines, we can see the level of the sea during various areas. At the height of the ancient Greek and Phoenician civilizations, the sea level was more than three feet lower than it is today. For about a thousand years, saltmaking in solar pans and peat marshes flourished in the Mediterranean, the Atlantic and the North Sea. But the sea water was rising. By

A certain political pattern emerges; where salt was plentiful, the society tended to be free, independent and democratic; where it was scarce, those who controlled the salt controlled the people.

AD 500, the sea water was more than six feet higher (three feet higher than it is today). This may seem an insignificant change but it was enough to wipe out the salt pans. The covering of the salt pans corresponded with the Dark Age of Europe—it wiped out an important source of wealth and commerce and resulted in reduced health and intelligence of the population; only as the sea level became lower again and salt more available did Europe recover, about 1000 AD.

Today we have many sources of salt and we are not dependent on trade routes, or the height of the sea. Modern technology has made salt cheaply available to almost everyone, and this fact alone has had the effect of lifting many population groups out of misery. Yet, if we read the handwriting on the wall, we can see the move to limit and control salt—either to convince us to do this voluntarily, or even to impose salt restriction on the whole population. There is something very sinister about what is going on with salt. Will salt restriction lead us unwittingly into a new dark age?

THE SALT RESTRICTION AGENDA

Attempts to get Americans to restrict salt go back several decades. The salt wars began in

1972 when the National High Blood Pressure Education Program, a coalition of thirty-six medical organizations and six federal agencies essentially declared that salt was an unnecessary evil. In 1978, one researcher called salt, “the most dangerous food additive of all.”⁹

Mary Enig, PhD, recalls attending a lecture for the Society for Nutrition Education back in the early 1980s. The speaker was Kristin McNutt, who had been retained by the MSG Foundation. (When manufacturers lower the salt content of food, they usually choose to increase the artificial flavorings, like MSG.)

McNutt said, “It’s just like what we did before the McGovern Committee hearings. In order to get media attention, we said that salt causes high blood pressure. We knew it wasn’t true but we had to get their attention.” It was clear to Enig that agents like McNutt had infiltrated key nutrition groups to promote a no-salt agenda.¹⁰

In 1978, the activist group Center for Science in the Public Interest began lobbying Congress to require the labeling of high-salt foods; the FDA got on board in 1981, aiming to reduce the nation’s salt intake. Now the mandate to reduce salt intake is part of the dietary guidelines.

The recent 2010 USDA Dietary Guidelines recommend reducing salt consumption to 3.5 grams, less than the teaspoon that constitutes our absolute requirement for salt, down from 6 grams in the 2005 Guidelines.

The interesting thing about the 2010 Dietary Guidelines Committee’s call for more salt restriction, is that this time the food companies are not objecting. In fact, a number of food companies have announced that they will be reducing the salt content of their products by 20 percent. This includes many food giants, such as Kraft Foods and Nestlé. We now have a

SALT INSTITUTE PRESS RELEASE

NEW DIETARY GUIDELINES ON SODIUM WILL INCREASE OBESITY AND HEALTH RISKS FOR AMERICANS

Washington, DC — February 10, 2011: At the Oral Comment Meeting of the Dietary Guidelines Advisory Committee, held today at USDA headquarters, the Salt Institute cautioned that instead of improving the health of consumers, the 2010 Dietary Guidelines will result in confusion and unintended consequences. Reduced salt in food will fuel the obesity epidemic as individuals will consume more to satisfy their natural sodium appetite and their hunger for taste satisfaction. It will also lead to other serious unintended health risks.

Salt Institute Vice President of Science and Research, Morton Satin said that the Dietary Guidelines have become far more a reflection of activist ideology than sound science. “The purpose of the five-year review process is to objectively examine all the new evidence before making recommendations, yet, before the process began, key Committee members openly stated the expected outcomes regarding salt, thereby compromising the process and making any final recommendations a forgone conclusion,” Satin said.

The recommendation of 1,500 mg sodium amounts to less than four grams of salt per day. Available data confirms that there is no modern society that consumes so little salt, thus making the Dietary Guidelines recommendation a trial on more than 300 million Americans. Population-wide interventions to reduce health risks can only work when there are no negative health consequences—which is clearly not the case with salt reduction. Elevated renin-angiotensin-aldosterone activity, the body’s natural hormonal response to reduced salt intake, will drive the population’s health risks to higher levels. Peer-reviewed evidence further suggests the possibility of unintended consequences such as cognitive impairment, adverse infant neurodevelopment and increased attention deficits and falls in the elderly, resulting from insufficient salt intake.

Satin went on to state, “Previous Guidelines made rigid recommendations on fat, portraying them as scientifically sound, yet had to be withdrawn when the actual science proved them wrong. I believe this grim lesson will be repeated once more with salt. Healthy humans, all around the world, consume salt within a relatively narrow range, controlled by their natural physiological control mechanisms. Trying to trump biology with flawed policy is pure folly.”

similar announcement from Frito-Lay regarding their salted potato chips.

Of real concern is the fact that these announcements about salt reduction just happen to have occurred as a new salt substitute, Senomyx, is readied to enter the marketplace. The Senomyx salt substitute is clearly a chemical product that works in the body as a neurological agent, causing an individual to perceive a salty taste. It would seem to be nothing more or less than a neurotrophic drug.

Because the maker of the Senomyx product calls it a food, their salt substitute does not require the extensive testing that would be required by the FDA if it were called a pharmaceutical. To our knowledge, there has been no testing of the Senomyx salt substitute for safety, and it is so potent that the amount needed in food is below the amount requiring FDA approval. Furthermore, it will never be disclosed on food labels as Senomyx—Senomyx can be used in or called “artificial flavor.”

We can easily predict the results of using a salt substitute instead of real salt—more health problems of every description, including mental retardation, heart failure, failure to thrive. . . and obesity—because our bodies really do need salt. What happens when we eat foods that taste salty but don’t satisfy our requirements for salt? We will feel the urge to eat more and more until our requirements for salt are satisfied.

RECENT CARDIOVASCULAR EVIDENCE

While the “experts” insist on salt restriction as a way of preventing heart attacks, high blood pressure and strokes, evidence to the contrary continues to accumulate. A 2010 (May 4) government-funded study published in the *Journal of the American Medical Association* finds that even modest reductions in salt intake are associated with an increased risk of cardiovascular disease and death.¹¹ In addition, the increased risk of death was evident within the range recommended by the U.S. government’s Dietary Guidelines on sodium, which means U.S. citizens who follow the dietary guidelines on sodium will be at risk.

The study concludes that lower sodium is associated with higher mortality. “Taken together, our current findings refute the estimates of computer models of lives saved and health care costs reduced with lower salt intake. They do also not support the current recommendations of a generalized and indiscriminate reduction of salt intake at the population level,” wrote the authors.

Likewise, an examination of the largest U.S. federal database of nutrition and health (NHANES), published in the *Journal of General Internal Medicine*, found a higher rate of cardiac events and death with patients put on low-salt diets—a result perfectly consistent with the *JAMA* study.¹²

If salt consumption and hypertension were linked, both would be rising. But a 2010 paper by two Harvard researchers shows that while hypertension has increased among Americans over the last forty years, sodium consumption has remained flat.¹³

OTHER CONCERNS

A 2010 Harvard study linked low-salt diets to an increase in insulin resistance, the condition that is a precursor to type 2 diabetes. Subjects on the low-salt diet developed insulin resistance within seven days!¹⁴ Recent studies out of Australia show that individuals with type 1 or type 2 diabetes die in much greater numbers when placed on a salt restricted diet.¹⁵

Because of declining renal function in the aging body, the kidneys retain less sodium. Recent studies have shown that elderly people with hyponatremia (low sodium levels), have more falls and broken hips and a decrease in cognitive abilities.¹⁶

A 2007 study found that babies with low birth weight are also born with low sodium in their blood serum because their mothers were on low-salt intakes.¹⁷ Another study found that infants with low sodium may be predisposed to poor neurodevelopmental function between the ages of ten and thirteen.¹⁸

Regarding the lungs, some have hypoth-

HYPONATREMIA

Studies have confirmed the importance of a balance of electrolytes: sodium, calcium, potassium and magnesium. When the body loses electrolytes in perspiration or when suffering diarrhea, serious consequences ensue. Likewise, when we drink only water after exercise, the usual electrolyte balance is not restored and “water intoxication” or hyponatremia occurs. Marathon runners are warned to make sure they consume extra salt, and diarrhea is treated with Oral Rehydration Therapy to replace lost electrolytes. The consequences of not replacing salt can be serious, even deadly.

It is sodium that makes “soft drinks” soft. While modern soft drinks are a witch’s brew of unhealthy ingredients, they do supply salt and for that reason alone give needed relief after work in the out of doors or exercise that stimulates a sweat. But soft drinks need not be unhealthy. Lacto-fermented beverages contain small amounts of salt, as does kombucha. If you are thirsty for water—plain or sparkling—be sure to add a pinch of salt to it. Otherwise the body simply gets rid of the water as fast as possible so as not to further dilute low salt levels. If you are using unrefined salt, you will be taking in small amounts of magnesium, and even calcium and potassium, as well.

MORE STUDIES VINDICATING SALT

1985. A ten-year study of nearly eight thousand Hawaiian Japanese men concluded: "No relation was found between salt intake and the incidence of stroke."

1995. An eight-year study of a New York City hypertensive population stratified for sodium intake levels found those on low-salt diets had more than four times as many heart attacks as those on normal-sodium diets—the exact opposite of what the "salt hypothesis" would have predicted.

1997. An analysis by NHLBI's Dr. Cutler of the first six years' data from the MRFIT database documented no health outcomes benefits of lower-sodium diets.

1997. A ten-year follow-up study to the huge Scottish Heart Health Study found no improved health outcomes for those on low-salt diets.

1998. An analysis of the health outcomes over twenty years from those in the massive U.S. National Health and Nutrition Examination Survey (NHANES I) documented a 20 percent greater incidence of heart attacks among those on low-salt diets compared to normal-salt diets.

1998. A health outcomes study in Finland, reported to the American Heart Association that no health benefits could be identified and concluded "...our results do not support the recommendations for entire populations to reduce dietary sodium intake to prevent coronary heart disease."

1999. A further analysis of the MRFIT database, this time using fourteen years' data, confirmed no improved health benefit from low-sodium diets. Its author conceded that there is "no relationship observed between dietary sodium and mortality."

2002. In September 2002, the prestigious Cochrane Collaboration produced the latest and highest-quality meta-analysis of clinical trials. It was published in the *British Medical Journal* and confirmed earlier meta-analyses' conclusions that significant salt reduction would lead to very small blood pressure changes in sensitive populations and no health benefits.

2003. In June 2003, Dutch researchers using a massive database in Rotterdam concluded that, "variations in dietary sodium and potassium within the range commonly observed in Westernized societies have no material effect on the occurrence of cardiovascular events and mortality at old age."

2004. In July 2004, the first "outcomes" study identifying a population risk appeared in *Stroke* magazine. Researchers found that in a Japanese population, "low" sodium intakes (about 20 percent above Americans' average intake) had one-third the incidence of fatal strokes of those consuming twice as much sodium as Americans.

2006. A March 2006 analysis of the federal NHANES II database in *The American Journal of Medicine* found a 37 percent higher cardiovascular mortality rate for low-sodium dieters.

2007. A February 2007 article reported in the *International Journal of Epidemiology* described a study of over forty thousand Japanese over seven years and found "the Japanese dietary pattern was associated with a decreased risk of CVD mortality, despite its relation to sodium intake and hypertension."

2007. An October 2007 analysis of a large Dutch database published in the *European Journal of Epidemiology* documented no benefit of low-salt diets in reducing stroke or heart attack incidence nor lowering death rates.

2008. A May 2008 examination of NHANES II (the largest U.S. federal database of nutrition and health) published in the *Journal of General Internal Medicine* confirmed two earlier studies of earlier NHANES surveys that there is no health benefit (CVD or all-cause mortality) for those on low-sodium diets.


SOURCE: <http://www.saltinstitute.org/Issues-in-focus/Food-salt-health/Salt-and-cardiovascular-health>

esized that salt may impede lung function and be problematic for asthmatics or others with respiratory ailments. The Center for Science in the Public Interest claims “High-salt diets impair lung function and worsen asthma symptoms,” while World Action on Salt and Health goes so far as to state: “There is evidence that bronchial reactivity in people with asthma is linked with salt intake. A recent review of epidemiological and intervention studies demonstrated that reducing salt intake may help to reduce the severity of an asthma attack and other breathing problems.”¹⁹ The long-awaited definitive study of the question was published in June 2008, headlined: “Low-sodium advice for asthmatics should be taken with a pinch of salt.”²⁰ In short, science confirms salt is blameless with regard to asthma, which confirms the wisdom of many doctors who had routinely prescribed extended visits in salt mines for those suffering asthma and other respiratory diseases.

Does salt cause obesity? Anti-salt advocates continually call for reduction of this non-caloric ingredient in our diets. True, salt makes food taste good and people are more likely to eat more food that’s palatable than food they find bland and unappealing, but there is no metabolic as-

sociation of salt intakes with the likelihood of developing obesity.²¹ Rather, it is likely that salt restriction—especially coupled with the use of taste bud-tricking salt mimickers—will lead to an increase in obesity as people binge and splurge in an effort to satisfy their requirements for salt.

UNINTENDED CONSEQUENCES

The campaign against salt is a perfect example of the law of unintended consequences. Researchers, politicians, medical professionals and journalists push their no-salt agenda as a surefire way to limit disease when all the evidence points to the opposite—increased health problems in young and old, diminished brain function, increased confusion, and a boon to the food processing and medical industries. With very few exceptions, there is no reason to fear the salt shaker, just put that salt on real, home-prepared food and enjoy! 

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THERAPEUTIC USES OF SALT

Salt therapy, sometimes called halotherapy or speleotherapy, is the therapeutic use of salt mines, caves or other forms of exposure to salt air, including visits to the ocean, particularly for respiratory diseases.

Records of improvements in the breathing of miners exposed to salt air date from Roman and medieval times. Dr. Feliks Boczkowski, a physician at the Polish salt mine at Wieliczka, wrote in 1843 that the miners there did not suffer from lung diseases. His successor set up a spa based upon these observations. Halotherapy is now practised in places such as Bystrianska in Slovakia, Wieliczka in Poland and Solotvyno in Ukraine.

Halogenerators are used to simulate the salted atmosphere of salt mines. These highly developed machines crush rock salt into dry micron sized particles, ionize the particles, and release them into the air. Salt particles of sizes 0.1-2.5 microns are able to escape the natural defenses of the upper airways and travel deep into the lung to the level of the alveoli.

Salt lamps are another method of ionizing rock salt. A large crystal of natural salt is hollowed out and heated with a tealight or lightbulb.

The easiest way to use salt therapy is to breathe an aerosol of concentrated salt water (3-7 percent sodium chloride). This treatment has been found effective as a treatment for the heavy build up of mucus typical of cystic fibrosis. The benefits of this were first noticed by sufferers who regularly surfed in Australia and so were exposed to the natural aerosol of the salt spray.

The use of saline solution delivered by a nebulizer to treat bronchiolitis in children has also been systematically reviewed. The conclusion was that, "Current evidence suggests nebulized 3 percent saline may significantly reduce the length of hospital stay and improve the clinical severity score in infants with acute viral bronchiolitis."

Those suffering from asthma or sinus conditions have reported significant relief from salt therapy using a nebulizer.

SOURCE: http://en.wikipedia.org/wiki/Salt_therapy

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VARIATIONS IN SALT METABOLISM

Although health authorities such as the National Heart, Lung and Blood Institute (NHLBI) recommend blanket restrictions on sodium intake for the whole population in order to reduce the burden of blood pressure-related cardiovascular diseases, the tenth edition of the well respected textbook *Modern Nutrition in Health and Disease* (2006) acknowledges that "the role of increased sodium intake as a cause of hypertension is still hotly debated, and raging controversy continues."¹ The inconsistent effects of sodium restriction in clinical trials helps fuel the controversy. When researchers pooled together the results of fifty-six trials, sodium restriction lowered blood pressure to the greatest degree among institutionalized elderly people with high blood pressure.² There was little or no effect in young people with high blood pressure, and no effect at all in young people with normal blood pressure. Although much of this variation may be a result of differences in the length and quality of studies, much of it may be a result of a phenomenon called "salt-sensitive hypertension." According to this view, some people do experience an increase in blood pressure when they consume more salt, while others do not. There is likely to be genetic variation that contributes to salt-sensitivity, but the evidence to date suggests that the overall dietary context is the most important determinant of a person's response to salt.

Researchers currently estimate that about fifty to sixty million American adults have high blood pressure, fifty-eight million are salt-sensitive, and twenty-six million are both salt-sensitive and hypertensive.³ Thus, somewhat less than half of those with high blood pressure would be able to reduce it by consuming less salt. The estimated thirty-two million Americans who are salt-sensitive but have normal blood pressure may be predisposed to develop high blood pressure later in life. African Americans are much more likely to be salt-sensitive than Caucasians. Extensive investigations of the associations of variations in more than two dozen specific genes with the incidence of salt-sensitive hypertension, however, have produced very inconsistent results.³ This is probably because variations in many genes must interact with one another and with dietary factors in order to render a person salt-sensitive.

The dominant effect of dietary context can be seen in clinical trials that use dietary factors other than sodium to change people's response to salt. Studies suggest that sodium bicarbonate increases blood pressure only half as effectively as sodium chloride in salt-sensitive individuals.⁴ Sodium citrate produces little or no increase in blood pressure in salt-sensitive individuals.⁵ The addition of potassium bicarbonate to the diet dose-dependently reduces the incidence of salt-sensitivity and may even abolish it.⁶ These findings are consistent with research suggesting that mild metabolic acidosis may be at the root of salt-sensitivity.^{5,7} If this is the case, we might expect calcium, magnesium and alkaline-rich foods such as milk, potatoes, fruits, vegetables, and beans to be protective. Nevertheless, the best way to protect against mild acidosis is probably not to obsess over the relative balance of acids and bases in whole foods, but instead to focus on maximizing metabolic efficiency by eating a nutrient-dense diet that is not overly restrictive in any particular macronutrient, including carbohydrate, by normalizing body weight if necessary, and by normalizing any autoimmune conditions or thyroid disorders that might be present.

Sidebar by Chris Masterjohn

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Senomyx:

The Brave New World of Flavor BioEngineering

by Lee Burdett

Like many San Diego-based companies, Senomyx is a high tech research and development business. Using cutting edge biotechnology and up-to-the-minute genetic engineering expertise, they have achieved an 85 percent increase in profits from 2009 to 2010. Surprisingly, this ten-year-old, publicly traded company is not associated with the computer or defense industry. Their techniques are more closely related to the pharmaceutical industry. This makes sense when you realize that the majority of their corporate executives came from Pfizer, Novartis and Merck. Their advisory board is populated by neurobiologists, neuropharmacologists and one Nobel prize-winning chemist.

So why am I, a food and health blogger, writing about Senomyx? They are not part of Big Pharma; they are a new player in the big food processing game. According to a company spokesperson, Senomyx is “dedicated to finding new flavors to reduce sugars and reduce salt. Our focus is to help consumers with diabetes or high blood pressure have a better quality of life.”

Senomyx's
salt taste,
savory flavor,
and sweet
flavors are
purposefully
developed
so that they
stimulate your
taste buds
without them
actually tasting
anything.

VIRTUOUS AIMS?

Reducing sugars and salt by reducing processed foods can be a good thing. I am constantly advising people to trade in their packaged processed foods for whole, organic fruits and vegetables and grass-pastured meats, dairy and eggs. This single act automatically improves our quality of life. But you have probably guessed that this ostensibly noble goal is not at all what Senomyx has in mind. Organic broccoli and free-range pastured chickens do not require marketing by company spokespeople or a highly paid R&D staff.

Senomyx uses its skilled workforce to develop patented flavor enhancers by using “proprietary taste receptor-based assay systems.” These testing systems provide scientists with biochemical responses and electronic readouts when a flavor ingredient interacts with their patented receptor. This permits the Senomyx researchers to know whether or not their flavor enhancer is effective or tasty. This also enables them to analyze “millions of potential flavor ingredients annually.” It is their unique receptor-based testing system that allows testing of such an enormous volume of chemicals. Using conventional flavor discovery methods, such as paying human subjects to taste test products, would take far more time and still not achieve the high number of results for “potential new flavor ingredients.”

DUBIOUS TASTE TEST SYSTEMS

You may ask, “Just what are ‘proprietary taste receptor-based assay systems’ anyway?” A press release from the religious watchdog group, Children of God for Life (<http://www.cogforlife.org/senomyxalert.htm>) discloses the fact that the receptors are made from HEK293.

HEK stands for Human Embryonic Kidney cells, 293 denoting that the HEK was from the 293rd experiment. The controversy comes from the fact that HEK293 originally came from a healthy, electively aborted baby whose cells were then harvested and used by a Dutch scientist, Dr. Van der Eb, in the 1970s. The Dutch doctor cloned the cells, grew them in tissue cultures and began using them and later selling them for research. The offspring of these cells became widely used in the medical biotechnology industry to produce therapeutic proteins and viruses.

Nowadays the HEK293 cells are becoming more widely used outside of medical research. They have found their way into the patented methods used by Senomyx to identify its new tastes. While their use in Senomyx’s lab is basically as a “test tube with a membrane” (Wikipedia) the violent and morally suspicious beginning of these cells make them questionable tools for a food processing company. COG claims there are viable alternatives to using HEK293 from less controversial sources. This is true since another San Diego-based company, Allylix, uses genetically modified baker’s yeast in similar production processes.

THE FIVE FLAVORS

There are five separate Discovery & Development programs in various stages of completion at Senomyx: Savory Flavors, Sweet Taste, Salt Taste, Cooling Flavors and Bitter Blockers. The end goal of each program is to patent, receive GRAS status and obtain exclusive partnership licensing agreements with international food processing companies to use these flavor enhancers in their products.

Senomyx has given the designation of SNMX-29 to the protein they believe is the primary human salt taste receptor. This may become the one that goes on to receive the patent for their Salt Taste Program. To get to this point they had to analyze about fifteen thousand proteins. The next step, now in progress, involves sifting through the company’s enormous flavor enhancing library to pinpoint which one stimulates SNMX-29 precisely the way sodium chloride does. Once this is achieved all that is left is for some company to buy the rights to insert that perfect salt enhancer into a food, replacing the need for much of the sodium currently used.

According to CEO Kent Snyder, they are working on this salt enhancement program because salt reduction is such a high priority for food companies and the medical community “due to the association of high salt intake with cardiovascular disease.” He further says, “We therefore believe that an effective salt taste enhancer would be a valuable asset for Senomyx partners and potential new collaborators.” Apparently Mr. Snyder is right; many food and beverage manufacturers and major retailers such

as Wal-Mart have stated their intentions to offer lower salt products to their customers.

Senomyx has already successfully developed and patented several other flavor enhancers. These are “savory flavor ingredients” and “sweet flavor ingredients” including a “sucralose enhancer.” Their savory flavors were tested against monosodium glutamate (MSG), and inosine monophosphate (IMP), an expensive MSG enhancer. MSG and IMP are the gold standard in savory-umami food additives. The sweet flavors are compared to various carbohydrate-based sugars and to artificial sweeteners. Work is currently on-going with prototype “cooling” flavor products and a bitter blocker. The bitter blockers are being developed to use as additives in soy foods, which are naturally too bitter for most people to eat.

Senomyx’s salt taste, savory flavor, and sweet flavors—as well as all their other flavor enhancers—are purposefully developed so that they stimulate your taste buds without them actually tasting anything. This subterfuge fools your brain into thinking you have tasted an intensely sweet or savory (umami) flavor. Much like MSG, these flavor enhancers operate on the neurological level to produce these reactions. They bypass normal tasting processes and, because of their ability to react directly with the brain’s receptors, send signals directly to the location in your brain where specific flavors are registered. By themselves they don’t really have a flavor but when combined with the other sweet or savory ingredients they intensify your perception of those tastes. Since they are not actually ingredients but rather “enhancers” they are not required to be listed in a package’s ingredients except as “artificial flavors.”

HASTY, INCOMPLETE SAFETY TESTING

According to a *New York Times* article, because very small amounts of the additives are used (reportedly less than one part per million) Senomyx’s chemicals have not undergone the FDA’s usual safety approval process for food additives. Senomyx’s MSG-enhancer gained the Generally Recognized as Safe (GRAS) status from the Flavor and Extract Manufacturers Association (FEMA), an industry-funded organization, in less than eighteen months, which

included three months of tests on rats. Senomyx maintains that their products are safe to eat simply because they are used in such tiny quantities.

Now that their “savory flavor ingredient” has passed and received FEMA GRAS status, it is already in products on the market. As of 2008, Senomyx has also marketed two “sweet enhancers,” S2383 and S6973. The former allows for a 75 percent reduction of sucralose and the latter allows for a 50 percent reduction of table sugar while maintaining the desired sweet taste. S2383 has been patented through the year 2027. Both the sucralose enhancer and the table sugar enhancer have received GRAS status. Most recently two of the Bitter Blockers have received GRAS status. One of them, S6821, is destined for use in foods that include soy and whey proteins, menthol, caffeine, cocoa and stevia.

BOOMING INDUSTRY

Many consumers simply assume that food processing companies develop and source their own flavors. While this is true in some cases, most large companies outsource their flavors. The global flavor business is worth more than six billion dollars per year. Growing consumer markets in China, India, and South America are driving the demand for economical flavors and fragrances. Consumers in the U.S. and Europe are demanding products that don’t harm the environment or deplete endangered resources. Government-driven health concerns are pressuring food companies to reduce the use of ingredients thought to contribute to obesity, heart disease and other illnesses.

After reading all of this you probably wonder why this is important to know. As a real food advocate who religiously reads labels and eschews anything with “artificial” in the ingredient list you may think this doesn’t affect you. Unfortunately, you are wrong.

Chances are very great that you have purchased at least one of the brands or affiliated product lines associated with a major, worldwide food processing company (see sidebar, page 42). Even if you don’t buy processed foods it is nearly impossible for our children to escape them as they are constantly offered at school, Bible class, sporting events and parties. And did you notice there were stevia enhancers? How many of you

Senomyx's chemicals have not undergone the FDA's usual safety approval process for food additives.

What a marketing coup it would be for a food manufacturer to be able to reduce the sugar in its best-selling cookie by 50 percent without sacrificing the sweetness.

use products sweetened with stevia?

Why would these companies be so eager to sign on with Senomyx? This quote from the Senomyx website may offer an explanation: "We believe that our novel flavors, flavor enhancers, and bitter blockers will enable our collaborators to achieve a competitive advantage and/or improve the nutritional profile of their products while maintaining or enhancing taste."

What a marketing coup it would be for a food manufacturer to be able to reduce the sugar in its best-selling cookie by 50 percent without sacrificing the sweetness. The maker could virtuously emblazon "HALF THE SUGAR!" on the cookie label and work up a clever marketing plan to outsell other cookie competitors, corner the market, and rake in all that cookie profit. All the while the maker could slash sugar costs by half to manufacture these high-tech sweets, thereby enjoying an even larger profit margin.

Or, a food manufacturer might use the savory enhancer to greatly reduce the amount of

MSG needed in its noodle soup. "We're helping companies clean up their labels," said Senomyx's chief executive, Kent Snyder, in a 2005 interview with the *New York Times*. That means the noodle company might now put health claims on its label boasting its new status of MSG-free! Health-conscious shoppers will purchase this soup—it could even be sold in health food markets—and the maker will gain a larger share of the packaged soup market, all the while increasing its revenues by no longer having to buy all of those formerly pricey ingredients.

You see, it's all about the bottom line: decreased cost of goods equals increased profits for shareholders. It's intricately tied to those shareholders, stocks, and hundreds of millions of dollars of investment potential. Processed and packaged foods represent an enormous industry that includes blue-chip companies like PepsiCo and Coca-Cola. These companies don't really sell foods, of course; they market commodities. Their products aren't produced with human nourish-

CORPORATIONS CURRENTLY PARTNERED WITH SENOMYX

- Ajinomoto Group has the longest relationship with Senomyx. They have been using the Savory Flavors in China for several years. They have now begun using enhanced products in sales in North America. Apart from the Senomyx flavors, Ajinomoto also proudly claims to be the world leader in food transglutaminase, a substance that alters proteins to allow unrelated meats to be seamlessly "glued" together, or to improve the general texture of any protein-rich food. They also claim to contribute to global health, and yet they are one of the largest producers and users of MSG in the world.
- Cadbury/Kraft is the parent company to far too many brand families to list separately. They are looking for ways to use several flavors, including sweet and cooling, in their candies and confectionaries. Outside sources say that Kraft may be planning to use Senomyx's sweet flavoring to reduce the sugar in powdered beverages like Kool-Aid.
- Campbell's Soup is still listed on the Senomyx website, yet recent news reports claim Campbell's has since disaffiliated when the two companies were unable to come to an agreement.
- Firmenich (a Swiss perfume and flavoring company) is working with Senomyx to use a sweet enhancer in products that are currently sweetened with sucrose, fructose and stevia. They are currently building market interest for North American sales using S2383. A search on the Firmenich website yielded this gem of a quote: "Extracted from nature or imagined by our scientists, our ingredients bring new emotions, tastes and originality to every creation."
- Solae makes soy-based foods including protein bars and infant formula, and stands to benefit from the Bitter Blocker program.
- Nestlé, the largest worldwide food processing company, has reformulated many of their old products and also developed new ones using the Savory Flavors S336 and S807. They market coffee drinks and coffee creamers that utilize Senomyx-technology enhancers. They are also pushing the European Food Safety Authority to grant approval to use these ingredients in the European Union, creating a new market for themselves.
- PepsiCo (which also includes the Frito-Lay, Tropicana, Quaker and Gatorade brands) recently signed a four-year contract with Senomyx that included a thirty-million dollar up front payment from Pepsi to Senomyx to use their sweet enhancers.

ment in mind. The manufacturers' number one goal is profit.

For me, however, it is all about trust.

The advertising budget for Nestlé was nearly four billion dollars in 2001, Kraft's was just over one billion dollars last year, and PepsiCo spent over one billion dollars in 1999 (wonder what it is today?). Since these companies spend amounts equal to the GDP of a small nation on their advertising alone, they can't afford to waste money on unnecessary manufacturing ingredients. New technologies that allow them to slash production costs mean more money for stockholders and larger advertising campaigns.

In March my sister sent out a notice to her blog subscribers in order to share the press release from the Children of God for Life condemning the Senomyx use of HEK293. After reading the press release, one mom telephoned Nestlé to ask about their affiliation with Senomyx and the use of HEK293. The Nestlé spokesperson said, "We only use FDA-approved ingredients." In fact he really didn't know much of anything about Senomyx. But as you read above, the FDA didn't run the approval—it was done by the Flavor and Extract Manufacturers Association.

Consider this quote from the FEMA website: "The Flavor and Extract Manufacturers Association furthers the business interests of its members through a sound scientific program designed to promote the safe use of flavors. Through effective representation of its members, FEMA fosters a global environment in which the flavor industry can create, innovate and compete." They further the business interests of their members.

Dr. Mercola wrote an eye-opening article about processed foods (<http://articles.mercola.com/sites/articles/archive/2011/03/31/foods-with-scary-surprises.aspx>) in which he shared the FDA acceptable levels of, among other things, rat dung and maggots, allowed in processed foods before any regulatory action is taken. His point was that processed foods are *not* fresh (they sit around in warehouses for long, long periods of time) and that package labels *will* deceive you. The FDA checks to see whether nutrition information is present on the label, but *not* whether it is accurate.

Those of us who spend great amounts of time, effort and money to seek out real food, local food, nutrient-dense food with integrity, are all too aware that processed foods are not healthy. But what about the rest of the general public? They need to know the truth behind the billion dollar advertising budgets! There is no amount of flavor enhancement that can truly give us a higher quality of life, especially if we already have diabetes, high blood pressure, or another aspect of metabolic syndrome. There is no processed food "imagined" by R&D departments that will improve our health. Processed foods are marketed by profitable firms, highly paid to promote deception. They hope we focus on grand claims of reduced sugar, reduced salt, reduced MSG and forget to wonder about "artificial flavor" in the fine print on the back label. They hope we are impressed with their magnificent assay systems while they disregard our anger when we discover the offensive origins of their technology. They hope we focus on the perception of enhanced flavor and neglect to realize that in fact the flavor isn't even there—the "Emperor's new clothes" of the food processing industry. ☹☹

Lee Burdett is a wife, mom, home educator and co-founder of Well Fed Family, LLC. She and her sister produced Well Fed Family: Breads DVD and Eating with the Seasons, a cookbook designed to help families prepare real food at home every day. She blogs, teaches Healthy Eating 101 classes and helps with local WAPF chapter events in Central Florida. Her website is <http://www.wellfedfamily.net>.

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RESEARCH PROJECT

Donna McIntosh, MHN, CHFS, is doing some informal research regarding the Weston Price way of eating and its effect on fertility. She would like to interview women who were infertile but finally got pregnant by changing their diets to a nourishing traditional diet. She would like to know which parts of your diet you changed and how long it took you to conceive. Please contact her at:

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Why We Crave

Understanding and Overcoming Food Addictions

by Janice Curtin, MA

Have you ever had that experience of being at the grocery checkout eyeing the candy bars and fighting the urge to buy one? Or how about that feeling after dinner that you just must have something sweet? Have you ever had the experience, as I have, of devouring a brownie while thinking about the next one? Did you ever just have to have ice cream *this very minute* and drive to the store at whatever hour to satisfy that craving? These feelings are often impossible to resist.

I have been there! I know what it is like to crave refined carbohydrates. Most people who have such cravings want refined sugar and wheat such as bread, cookies, factory-processed boxed cereals, candy, cakes, brownies, doughnuts, and bagels, as well as ice cream. These are the very foods that cause weight gain.

Many people would like to lose weight and some actually know how to do it—no thanks to our industry-dictated government food pyramid, and in fact, in spite of it! Science writer Gary Taubes, in his new book, *How We Get Fat*, tells us that science has known for decades that insulin is what drives fat into cells. To lose weight we need to eliminate those foods that elevate insulin—the sweet and starchy ones. But many find it impossible to do so, due to their compelling food cravings.

I no longer struggle with cravings for sweets and starches. The candy bars at the grocery checkout look too sweet. I am not attracted to pastries or ice cream. I enjoy a dessert occasionally, but I'm satisfied with a small portion and no longer have that feeling after each meal that I need something sweet. I love the freedom from my former cravings. I now control the food I eat; it no longer controls me.

What follows are the facts I have learned about food cravings and what I did to emancipate myself from them.

THE BRAIN CONNECTION

According to Julia Ross, author of *The Mood Cure*, and my personal experience as well, cravings can be caused by many things and they come from our brain. Brain chemicals regulate thoughts and obsessions about food. I remember going to the refrigerator with an attack of what I call “refrigeratoritis.” That’s when you open the refrigerator and stare into it thinking about what you want to eat, even though you are not really hungry. Your brain is just telling you that you need something now, and you can’t resist the impulse. It’s as though someone else has taken control.

I remember one particular instance when my daughter and I were dining in a local restaurant and had agreed that we would share the special chocolate cake for dessert. We looked forward to this, but when we ordered it we were told that they were out of the cake we were dreaming about. I was devastated! In fact, I was shocked at how upset I was that I would be deprived of this delicious treat.

I had learned about amino acids from Julia Ross when she spoke at a Weston A. Price Foundation Conference. She described the way

amino acids can affect cravings and moods, so the next day I took an amino acid called DLPA (a form of phenylalanine) that works as an appetite suppressant when you need a “numbing treat.” The effect was immediate! For several days I took the supplement and no longer craved any foods. I had the most wonderful feeling of joy and freedom. I could now eat what I should when I was truly hungry, instead of when something in my brain told me I had to. I had an amazing amount of energy. This feeling did not last, but it did prove to me that the brain was the culprit and set me on a journey to learn more.

MOOD AND AMINO ACIDS

First you need to know about proteins and amino acids, which are the building blocks that make up proteins. The central nervous system cannot function without amino acids, which act as neurotransmitters or as precursors to the neurotransmitters. They are necessary for the brain to receive and send messages. All the amino acids must be present together or something may go wrong with the transmission of the message. If there is a protein shortage due to a diet deficiency or the inability to digest proteins, disorders can arise. These may be cravings, ADD, anxiety, depression or many other mental disorders.

Julia Ross writes in her book, *The Mood Cure*, that if you are low in amino acids or if they are not functioning properly in your body, you can crave foods. She states that if you are low in the amino acid L-tryptophan, which is needed to produce serotonin, our natural Prozac, you may have afternoon cravings for carbohydrates, alcohol or drugs. If you are low in endorphins, our natural chocolate or heroin, you may crave comforting or numbing treats or “love” certain foods, drugs or alcohol. The amino acid DLPA will often eliminate comfort-food cravings, at least for a while.

GLUTEN AND THE GUT-BRAIN CONNECTION

Some grains (wheat, rye, barley and spelt) contain a protein called gluten, which is very difficult to digest. Foods made from gluten grains are comfort foods and many people crave them. They can actually become addictive. James Braly, MD, in his book, *Dangerous Grains*,

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back.

says that part of this comfort comes from our inability to digest fully some parts of the grain. Undigested partial proteins, or peptides, found in gluten cereals have morphine-like properties, becoming potent drugs once they enter the blood stream. Many people develop cravings due to the pleasant feelings these cause.

BAD BACTERIA, PARASITES AND CANDIDA OVERGROWTH

You may have heard the aphorism, “Disease begins in the colon.” When a person eats factory-made refined foods, which are difficult to digest, he develops an overgrowth of yeasts, fungi and bad bacteria, which proliferate because of these lifeless foods. In addition, if you have taken antibiotics, you have probably killed a lot of the good bacteria whose job is to keep levels of all bacteria in balance. These good bacteria assist with digestion and absorption of nutrients in living foods. By contrast, the unfriendly (to us) bacteria want a continuous supply of starchy carbohydrates and sugar to eat via these dead, factory foods, and they let you know by causing your food cravings.

In addition, you may find you have parasites. The job of parasites is to clean up rotten food and bad bacteria in the intestines. Parasites love sugar as a steady diet, too. When you kill them your cravings may temporarily get worse, as they seem to scream for sugar.

Candida overgrowth can cause very strong sugar and bread cravings. Yeasts and candida live on sugar and seem to urge you to feed them all the time. “A craving for sweet and starchy foods is typical for all people with abnormal bodily flora,” says Dr. Natasha Campbell-McBride, “particularly with candida overgrowth.” Further, if you have taken birth control pills, which change your body pH, or if you eat a lot of sugar, you are encouraging abnormal growth of yeast in your body. Doctors are now discovering a link between heavy metals and candida overgrowth.

HEAVY METALS AND CHEMICALS

Metals can be a root cause of cravings and of serious health problems. We can accumulate metals from vaccinations, mercury fillings in our teeth, pesticides, foods that are not organic, air pollutants, and many other sources. They can

be passed on to our children in utero. “Unfortunately, just having toxins in the body makes them harder to get rid of because they drain energy, even at the cellular level,” says Kenneth Bock, M.D. who treats autistic children.

Just when I had absolutely no cravings (I didn’t even think about sweets anymore) I began to detoxify metals. My doctor’s report had shown mercury, arsenic and high copper, so I was taking homeopathic drops to detoxify. But detoxification brought the carbohydrate cravings right back. At midday and after dinner I started searching the house for candy, looking for those leftover chocolates from Christmas gifts. I really wanted what Julia Ross calls numbing treats, something to satisfy myself. My health practitioner explained that the metals, as they are flushed out, disrupt functions in the body, including neurotransmitters in the brain. Chemicals can do this as well. I took some individual amino acids, which provided some relief from cravings, and also supplemented with probiotics to improve digestion and detoxification.

LOW-SATURATED FAT DIET

If you are eating a lowfat diet, you may still feel hungry after a meal. As stated in *Eat Fat Lose Fat*, by Sally Fallon Morell and Mary Enig, PhD, our bodies need saturated fats for function of nerves, brain, hormones, immune system and metabolism. Also, saturated fats create satiation. In other words, they make us feel full and satisfied. By feeding your body the healthy fats it needs—fats found in butter, cream, nuts, meats and eggs—your body produces a hormone in the stomach that signals you have eaten enough.

Dr. Tom Cowan writes in his book, *The Fourfold Path to Healing*, that “Our brain is specifically designed to sense the fat content of our food and to tell us to stop eating when the proper amount of fat has been ingested. When the need for fats and the nutrients they contain is satisfied, we stop eating. The body’s requirement for fats is so great, and the appetite that spurs the body to obtain those fats is so strong, that binge eating is likely to occur if fats are omitted from regular meals.”

LOW B VITAMIN LEVELS

As I stated earlier, if you have been eating

refined foods, especially grains that are not traditionally prepared by soaking or fermenting, you may have undigested waste in the intestinal tract. You may have too many hostile bacteria and not enough beneficial bacteria. This can make it difficult for your intestines to make B vitamins. Julia Ross explains that the brain must have B₆ to make serotonin, an important neurotransmitter. Serotonin makes you feel happy, contented and satisfied.

LOW-CALORIE DIETING

Are you deficient in brain nutrition due to low-calorie dieting? Julia Ross calls this situation "dieter's malnutrition" and says it can be an underlying cause of food cravings. When our body assimilates vital nutrients well, it requires less food to satisfy its basic nutrient needs, and a lasting feeling of satiety is effectively achieved. If we don't assimilate nutrients well or don't eat nutrient-dense food, our body will be constantly asking for more food, because it needs nutrients to survive. As Dr. Cowan explains, modern processed food is high in calories and low in nutrients. It satisfies the appetite only momentarily because the body continues to send signals to the brain that it needs more nourishment. The "appetstat" never receives the signal to turn off.

SUGAR HABIT, LOW BLOOD SUGAR

Just eating a lot of sugar can cause you to want more of the same. In a presentation at the 2010 Weston A. Price Foundation conference, Nora Gedgaudas, CNS, CNT, explained that if you eat a lot of sugar and starch (which turns to sugar), your body and brain become metabolically adapted to burning glucose for fuel, instead of burning fat for fuel. She says, "You are going to crave carbohydrates if you are adapted to being dependent on glucose as your primary source of fuel. . . . Sugar is going to look good to you and you are going to crave it. Some people can't even get to noon without a snack, without going half crazy."

For example, if you eat sugary breakfast cereals you will often become hungry an hour later and want to eat more sugar. You may feel like you are going to crash without it. Processed carbohydrates get absorbed very quickly, producing an unnaturally rapid increase in blood

glucose. A rapid increase in blood glucose puts your body in a state of shock, prompting it to pump out lots of insulin very quickly. As a result of overproduction of insulin, soon you have very low blood glucose again. (Insulin is what puts on weight too.) A fluctuating blood sugar level can trigger food cravings, migraines, mood swings, weak spells, drowsiness and much more. I was with a friend while she experienced a blood sugar crash. She felt faint and that she absolutely had to eat a cookie to survive.

FOOD ADDITIVES

It has been said that chemicals are sometimes added to processed food by manufacturers in order to cause cravings in the unwitting public. Paul Stitt, who worked for breakfast food companies and wrote *Fighting the Food Giants*, relates how this is frequently perpetrated. Employees were often asked to taste the cereals. The cereals they ate the most of were considered the best and were marketed the most. And some cookies, he says, have addictive ingredients added so you won't eat just one.

Paula Bass, PhD, in Fairfax, Virginia, agrees that food additives affect the brain. As a psychologist, she looks carefully at diet with each client, and sometimes a diet change is all it takes to resolve the problem. "If you are eating junk foods that contain dyes, preservatives and other chemicals, you can damage the manufacture of your brain neurotransmitters," she explained at a recent talk I attended. "Nutrient-dense whole foods are necessary for our brain neurotransmitters to be produced and function properly," she commented.

Recent research finds that toxins in foods and other chemicals in the environment do more than just cause cravings—they also alter our hormones and our own innate slimming mechanism. Paula Baillie-Hamilton, MD, PhD, focuses on organochlorines, such as pesticides. In her book, *Toxic Overload*, she reveals studies showing that the higher the level of these chemicals in the body, the greater the body weight will be.

ELECTRO-MAGNETIC POLLUTION

Researchers are discovering that microwaves, power lines, computers and cell phones all create electro-magnetic pollution that makes

When our body assimilates vital nutrients well, it requires less food to satisfy its basic nutrient needs, and a lasting feeling of satiety is achieved.

people sick and tired—and fat. The effects can cause fat retention, fatigue, insomnia, depression, hormone disruption and more, according to Sherrill Sellman, ND. They disrupt vital cell-to-cell communication that underlies all of the body's functions, including maintaining energy and natural slimming mechanisms like detoxifying, balancing blood sugar and regulating appetite, according to Dr. Sellman. You can read more by going to www.whatwomenmustknow.com. You can also purchase tiny chips to place on electronic devices to protect yourself at www.mybiopro.com/highesthealth.

ALLERGIES

It has long been known that if we are allergic to something, we may crave that very food. A craving for wheat can mean you are allergic to wheat, one of the most common food allergens. The reason this happens, says Nora Gedgaudas, is that when a food allergy causes stress, your body produces endorphins, which comfort you and make you feel good. Unfortunately you perpetuate exposure to the irritant because you want more of the compensatory good feelings.

STRESSED ENDOCRINE SYSTEM/ HORMONES

Bruce Rind, MD, who specializes in adrenal and thyroid health, claims that weakened adrenals can cause cravings for sweets, grains, salt or any combination of these. If you have eaten a lowfat diet for a lengthy amount


REMEDIES FOR CRAVINGS

1. **PREPARE YOUR GRAINS:** Do we need to eliminate grains to be healthy? Sally Fallon Morell explains in her article "Be Kind to Your Grains" that we do not need to give up our grains, but we do need to prepare them properly. Ancient cultures fermented, soaked and sprouted grains before consumption. Today we are fortunate because we can find genuine sourdough breads and whole grain breads that are made from soaked and sprouted flours. They are usually in the frozen section of our health food store. Because the gluten is broken down or predigested it is less likely to cause cravings and the breads are more nutritious. (But read labels to make sure that gluten is not added after the sprouting or sourdough process!) If you have strong cravings for grains, however, it may be wise to eliminate them entirely, recommends Nora Gedgaudas. I find that once cravings are gone, one is usually able to slowly add back to the diet some properly prepared grains. If you are still trying to lose weight, you should continue to limit grain consumption.
2. **TAKE PROBIOTIC SUPPLEMENTS AND EAT PROBIOTIC FERMENTED FOODS:** Homemade sauerkraut and pickles are good probiotic foods, consumed by healthy people the world over for centuries. These foods will increase the numbers of friendly bacteria to improve digestion, assimilation and detoxification. They help keep in check the bad bacteria that can cause cravings. I suggest you start supplementing slowly with probiotics. This is because when you add these good bacteria they will cause the bad bacteria to die, and you will very likely have some die-off symptoms. These could include cravings.
3. **EAT PLENTY OF GOOD SATURATED FATS:** Be sure you are getting plenty of these fats in your diet because they will make you feel good, full, and satisfied.
4. **CLEAN OUT THE KITCHEN AND PANTRY!** Get rid of all the processed and sugar-laden foods. Remove any grain products that are not traditionally prepared and any products with dyes and additives. Keep only foods that are real and whole. If you are trying to lose weight, eat only low-sugar, low-starch foods. Eat lots of non-starchy vegetables, meats, fish, nuts, and raw dairy. Raw dairy contains the enzymes needed to digest it.
5. **DETOXIFY:** Find a practitioner who can test you to determine if you have heavy metals, chemicals, parasites, candida, yeast, fungi or bad bacteria, all of which can cause food cravings. Since I was burdened with several of these, I detoxified using homeopathy, nutritional supplements, and TBM (Total Body Modification) energy treatments. I took Natren probiotics to aid in detoxification and replenish the good bacteria. I recommend you purchase a very good water filter to aid hydration of cells. Foods like parsley and cilantro can help with detoxification, too. You must be very careful not to detoxify too rapidly or you will put your body out of balance and experience many unpleasant symptoms. I took cod liver oil, which contains vitamins A and D to protect my cells, once I had detoxified enough to be able to metabolize fats well. I recommend you find someone who is experienced in AK (Applied Kinesiology or muscle testing). A good practitioner will make sure you support the organs of detoxification, especially the liver and kidneys. You can so easily overdo detoxification and harm yourself. When you have symptoms, it is often difficult to tell whether they are from the toxins, low levels of probiotics, or from the detox process. I worked with a TBM practitioner who could always figure out my problem and remedy it. Another tool to identify your toxins is the Asyra energy scan, available at www.myhealthbuilders.net, in Annandale, Virginia.

of time, or have poor fat metabolism, you may not be getting enough cholesterol and fat-soluble vitamins, such as vitamin A. Vitamin A is essential for the health of the endocrine system, which of course includes the adrenals and thyroid gland.

Another cause of poor adrenal function can be toxins like mercury. Janet Lang, DC, an expert in women's hormones, agrees that toxins and poor diet disrupt hormones. She states that imbalanced hormones frequently cause cravings and has developed a treatment protocol for this condition.

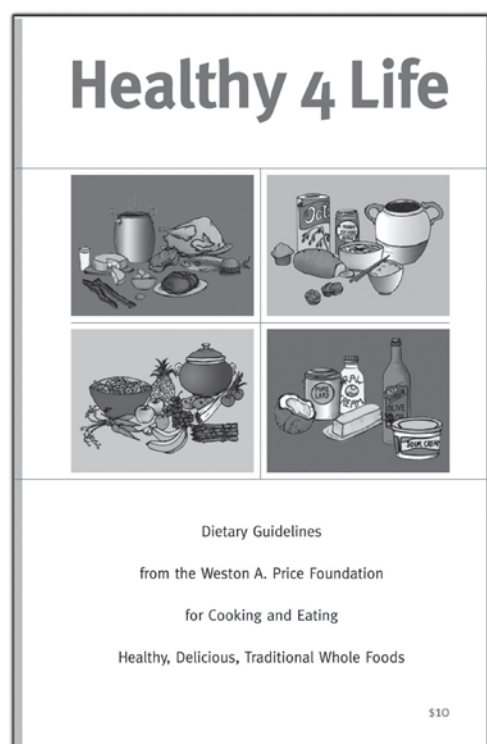
RETURN TO HEALTH

Although it takes diligence, attention to detail, and time, overcoming food cravings and restoring gut health and mental equilibrium can be done! My five crucial points for remedying food cravings are outlined in the sidebar on page 48. Let me reassure you that detoxifying and changing your diet are worth the effort. Not only will you be free of your cravings, but you will digest and absorb nutrients better, grow healthier, feel happier, and prevent illness in the future. 

Janice M. Curtin is a Weston A. Price Foundation chapter leader in Alexandria, Virginia. She grew up on an Iowa farm, and has worked on Capitol Hill and in the Department of Agriculture. She currently manages a food drop that supplies fifty families with nutrient-dense farm food.

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A Dietitian's Experience

IN THE NURSING HOME

Pharmaceutical Medications versus Proper Nutrition

By Kim Rodriguez, MS, RD, LD

It is time to keep business out of health care. Medicare pays an average of one hundred sixty dollars a day per nursing home resident plus the cost of pharmaceutical medications. The average nursing home patient takes nearly nine separate medications and this number is increasing.¹ At the same time, no one is actually getting well.

Are our elders looked upon as a business opportunity for the pharmaceutical industry? Are physicians and dietitians trained to support the institution's financial endeavors at the cost of the wellbeing of both nursing home patients and our health care system?

A DIETITIAN'S TRAINING AND ROUTINE

With more than twenty years of experience as a registered dietitian providing Medical Nutrition Therapy in nursing homes, I have suggested a few changes to physicians and nursing home facilities only to have them vetoed.

On a typical day, I evaluate approximately twenty nursing home residents. I work in many different nursing homes, with a case load of four hundred to four hundred fifty residents each month.

A dietitian's job is to routinely evaluate residents who have significant weight loss or gain, skin breakdown, abnormal nutritional laboratory values, and those receiving dialysis. As a dietitian, I also evaluate food handling, sanitation, preparation, service procedures and equipment. I provide budgeting input while maintaining the standards of performance for the food service operation and ensuring proper documentation is kept to meet all reporting requirements.

Additionally, dietitians meet with residents upon their admission to a nursing home facility in order to establish a plan of care and to minimize nutritional complications. I make recommendations that must ultimately be approved by the physician.

I am expected to calculate nutritional

needs and evaluate whether they are being met by the diet offered and the amount the resident consumes. I am expected to recommend a pharmaceutically based appetite stimulant or antidepressant if intake is poor.

I am expected to use synthetic protein and Ensure-type supplements for residents suffering weight loss, and synthetically based denatured protein solutions for skin breakdown or low visceral protein status. The use of whole food tube feedings or drinks is not welcomed in my facilities as they are labor intensive and increase cost. Under the current structure, Medicare pays for pharmaceutically based supplements such as Ensure and liquid protein, but not for genuine food.

Providing Medical Nutrition Therapy in a nursing home requires credentials as a registered dietitian with the American Dietetic Association's (ADA) Commission on Dietetic Registration. Training is extensive. In most cases it requires a bachelor's degree from an accredited college, an internship of nine months to a year working within a clinical setting, and passing a comprehensive exam.

The required training includes clinical skills and skills required to supervise a food service operation. In order to maintain registration status, seventy-five hours of continuing education every five years must be obtained in an area related to your concentration.

During my clinical training as a dietitian, I was not taught holistic nutrition principles. I did not learn the benefits of herbs, or of the importance of whole foods, probiotics, enzymes, or organically grown foods to good health. I did not learn to use vitamin and mineral supplementation to overcome illness or disease. I did not understand that poor nutrition is probably the cause of most disease and poor health conditions in the first place. I had no idea that we require cholesterol and saturated fat to be well. I did not learn

Under the current structure, Medicare pays for pharmaceutically based supplements such as Ensure and liquid protein, but not for genuine food.

that the nutritional value of grass-fed beef was superior to grain-fed beef, or of the importance of iodine coupled with the avoidance of bromine for proper thyroid function, and so on.

During training I learned approaches that analyze and treat. I was taught how to calculate nutritional needs, count calories and protein, prescribe parenteral (intravenous) nutrition, and restrict particular electrolytes in a renal diet. I learned the nutritional implications of medications and the differences in tube feeding and supplement formulas.

I was taught we should eat less fat and more grain products. I was led to believe that pharmaceutical therapy was necessary and that nutrition made little or no impact in treating an already established condition. My continuing education hours were offered free by the pharmaceutical industry. During these classes I was taught about their “new and improved” Ensure and other products they were promoting.

IS THERE A BETTER WAY?

For many years I defended the practices I was taught as a clinical dietitian in nursing homes. I defended providing lowfat, low cholesterol diets, prescribing cans of Ensure for weight loss, and recommending margarine instead of butter. I believed in this health paradigm and in the ADA. Every approach I was taught appeared in a context that gave it credibility and was subjectively convincing, but at the same time was illogical, unfounded and unprovable.

I now find overwhelming evidence against the approaches suggested by the ADA and used as the standard training for a dietitian. I can no longer defend my former belief system or provide nutrition care in nursing homes as expected of me without a guilty conscience. Many of the protocols are detrimental not only to the nursing home residents but to our country’s health care system. The elderly remain dependent upon multiple pharmaceuticals, invasive medical procedures, and long-term assisted care.

I now have a broader outlook on nutrition than do most of my coworkers. I have since studied nutrition alongside chiropractors, acupuncturists, naturopathic doctors, and physicians who have sought training outside of the “pharmaceutically oriented box.”

I have watched how whole foods in supplement and food form, herbal therapies and methods such as applied kinesiology can resolve poor health conditions and alter the disease process, both in conjunction with and without pharmaceuticals or invasive interventions.

I have heard thousands of testimonials demonstrating the effectiveness of alternative therapies for health conditions that mainstream medicine is unable to resolve. I have witnessed lifelong diseases heal rapidly when alternative approaches and dietary changes to incorporate whole foods and more saturated fats were introduced. I have watched physicians seek and use these same alternative approaches for themselves and their families, but they do not provide the same options for their patients.

HEALING NUTRITION IGNORED AND DENIED

In an article written by D. Hawkins, MD, PhD, titled “Successful Prevention of Tardive Dyskinesia: A 20 Year Study” published in the *Journal of Orthomolecular Psychiatry* January 1991, research proved that a regimen of certain vitamins helps prevent the neurological disorder tardive dyskinesia.² This disabling disorder is frequently irreversible and typically occurs in patients on long-term tranquilizer treatments. In a study of sixty-one thousand patients treated by one hundred different physicians over a twenty-year period, the introduction of vitamins B₃, C, E, and B₆ decreased the rate of this terrible disorder from 25 percent to an astonishing .04 percent.

The research findings were largely ignored. I feel this is because there wasn’t anyone “selling” the study as no one can claim financial profit from the sale of vitamins. Eighteen percent of the residents I work with are at some stage of this disease and require additional pharmaceutical therapies while the potentially helpful vitamin regimen mentioned above is never used.

Vitamin D has been proven to be necessary for calcium utilization and is also useful in the prevention of cancer, diabetes, osteoporosis and other diseases.³ Calcium is not only important for bones but in the prevention of bacterial and viral infections.^{4,5} Sadly, this is knowledge I was not taught in my training as a dietitian.

Sixty-nine percent of nursing home residents

I now find overwhelming evidence against the approaches suggested by the ADA and used as the standard training for a dietitian.

A physician recently informed me that it is not my role to resolve a disease process with nutrition.

take calcium supplements because they have been diagnosed with osteoporosis.⁶ One hundred percent do not consume adequate vitamin D or receive it from exposure to sunshine. Sixty-six percent are taking an acid-reducing drug that decreases absorption of calcium.^{7,8} Seventy-four percent have frequent urinary tract infections requiring antibiotic therapy and often hospitalization.

By the simple introduction of cod liver oil and the usage of digestive enzyme therapy to replace antacids, calcium is absorbed. This would help put an end to the cascade of poor health conditions related to hypocalcaemia, such as osteoporosis, viral and bacterial infections, poor sleep, and disturbed emotional function, and curtail the use of additional pharmaceuticals to treat these conditions.

When I suggested the idea of introducing cod liver oil into the nursing home environment, the request was denied due to cost. Cod liver oil is classified as food, and therefore not covered by Medicare. Medicare covers pharmaceutical grade vitamin D therapy. I have observed this practice increasing in recent years; however, in my research only four percent of residents received vitamin D therapy.

Fifty-one percent of the four hundred twenty nursing home residents I evaluated for this study are currently taking CoA reductase inhibitors or a statin drug. Eighty-six percent of these residents complain of muscle pain requiring daily pain relievers.

Studies show statin drugs deplete co-enzyme Q₁₀ resulting in muscle pain.^{9, 10} My own clients find pain relief with the addition of CoQ₁₀. Additionally I am aware of several physicians who take CoQ₁₀ while they are taking a statin drug.

A proposal I made for the addition of CoQ₁₀ for residents taking statin drugs was denied. Although physicians approved the idea, it was rejected by the facility due to the cost. Again, this supplement is listed as a food and not paid for by Medicare. The statins and the pain relievers are paid for by Medicare.

Recently I recommended the use of whole food nutrition and supplementation as a healing modality. The supervising physician refused approval. In my experience most often the physi-

cian does not understand either my suggestions or their rationale, and therefore immediately mistrusts them. Often physicians' frame of reference is limited to pharmaceutical therapies and invasive procedures.

A physician recently informed me that it is not my role to resolve a disease process with nutrition. I argued that this role should be the most important element of health care, yet it does not exist! If it were included it would not only improve the health and quality of life of the nursing home resident, but decrease our health care costs by decreasing or eliminating the use of pharmaceuticals. We would finally be healing by removing the cause of disease instead of suppressing symptoms with pharmaceuticals.

Furthermore, I find that additional pharmaceuticals are needed to counteract the side effects of an originally prescribed pharmaceutical. Balancing the side effects mushrooms until residents are taking two or three medications simply to relieve the side effects caused by another drug.

MORE UPHILL STRUGGLES

The bottom line is that providing healthier food dramatically increases costs when feeding in volume. Grains and cereals are featured heavily in nursing home diets not just because this practice follows ADA guidelines, but because it allows most facilities to remain within their food budget. Also, neither residents nor the health care staff understand the importance of healthy foods in healing and overcoming disease.

Although a nursing home setting may not provide high quality food as recommended by the Weston A. Price Foundation guidelines, I do find most nursing home residents are eating much better than they had been at home. Prior to admission, diets typically consisted of convenience foods and packaged cereals. Protein intake for these elders had usually been inadequate because of the cost and preparation effort involved, or avoided from fear of the fat content.

An example of the monolithic power of fear came full circle for me when I attempted to have margarine replaced with butter in four nursing home facilities. After presenting research on the dangers of *trans* fats to physicians and administrators, my proposal was approved in the budget to make the change from margarine to


butter—even though butter is double the price of margarine. Unfortunately, there were many complaints from the residents and their family members who believed margarine was a healthier choice. They constantly asked for margarine instead of butter.

Until the health care system recognizes high quality food to be more important than pharmaceuticals, and alters the structure of the system to include modalities outside of the “pharmaceutical model,” implementing these therapies into the nursing home setting will be impossible. And although a family or resident may request holistic nutrition therapy in the nursing home, the request must be approved by the supervising physician and the family or resident may be asked to incur the additional cost.

Who benefits from maintaining the status quo? The pharmaceutical industry. Who suffers? Nursing home residents and our health care system.

We must work from a larger paradigm of the healing process, including nonconventional modalities in the therapeutic approach. Nutrition education must either change to allow a dietitian to include these modalities, or else individuals trained in these areas must be included in the nutrition care team.

Physicians must relinquish control over nutrition therapies for which they have neither education nor understanding. They must work cooperatively with alternative practitioners to discontinue pharmaceuticals as the patient’s condition improves.

It is our individual and collective responsibility to our elders to make these changes based on morality, compassion and love. 

Kim Rodriguez is a dietitian in Aiken, S.C. where she provides consultation to health care facilities as well as phone consultations to individuals. (803) 349-5588 aikennutrition@bellsouth.net. Percentages used in this article are based on research conducted by the author from the observation of 420 nursing home residents.

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Homeopathy Journal

RADIATION AND COMMUNITY ILLNESS
By Joette Calabrese, HMC, CCH, RSHom (NA)

In an epidemic, homeopathy can touch thousands of people in a sweeping action with one well chosen remedy.

In an epidemic, homeopathy can touch thousands of people in a sweeping action with one well chosen remedy. This has been demonstrated in the epidemics of cholera of the mid 1800s, the Spanish flu of 1919, and Cuban swamp fever in 2008, to name a few. In fact, public health is where homeopathy's reputation was established in the nineteenth century.

There are three methods by which homeopathy works within a community to aid in public health. These are generally methods that must be utilized strictly by an experienced homeopath. However, there's a fourth method that lay persons can use on their own without the guidance of a professional. Since it is my intention to teach mothers (and others) how to care for their families on their own, we'll review those areas that ought to be employed by a homeopath and then incorporate the best part: the remedies that you can use yourself to protect your family. Let's examine these methods to see how they can be of benefit during a community health crisis.

METHOD ONE: CONTAGION CAN SOMETIMES BE A GOOD THING

An epidemic illness is caused by a contagious microorganism, but the very contagion can be part of the solution. Once the microorganism is identified, the homeopathic remedy choice becomes a simple matter. The very pathogen itself is made into a remedy. Your poison becomes your medicine.

The manufacturing method for all homeopathic remedies in the U.S. is carried out in pharmacies following strict FDA and international homeopathic guidelines. When a remedy is made from products of a disease, it is called a *nosode*, and it's in the use of a nosode that homeopaths find a straightforward method of treatment. Its ease in application lies in not having to uncover each individual's personal reaction to the illness. This method is an important one during an epidemic since the technique offers protection even

before the symptoms are known.

Homeopathy is a medical discipline that generally relies on symptoms of the individual to indicate the appropriate remedy. When the pathogen is determined and the nosode is formulated, the simplicity of application is a welcome exception to the usual person-specific rule.

Additionally, by using the remedy made from the offending microorganism, immunity can be conveyed before illness presents. That means it can be used as a prophylactic and thereby offers a real advantage in epidemics.

For example, should an epidemic of the flu descend on us today, and before it's clear exactly what the presenting symptoms are, a good choice might be to employ the remedy *Influenzinum 2011* just as the epidemic reaches your locale. The remedy would be developed from the strains of influenza most likely to manifest in 2011.

As a prophylactic, one of the methods of administration is to take *Influenzinum 30* four times in one day, then once per week for a month, and finally once every month until the contagion dies out. That can be as long as two to three months total.

But this remedy can also be employed after someone has already contracted the flu to mitigate its symptoms. In this case, when the illness begins to manifest, it can be taken twice daily until health is restored.

METHOD TWO: WE ALL REACT SIMILARLY IN CERTAIN ILLNESSES

Once the precise symptoms that consistently present in a population affected by a particular illness are identified, the homeopath can recognize a symptom pattern within this entire group. In this case, often one remedy is chosen for all. In other words, in some forms of influenza, the main symptom might be profound fatigue with a dusky appearance as the chief observations. These symptoms would call for the remedy *Gelsemium*. Another flu might present with coldness

up the back and relentless nausea, which would call for *Nux vomica* as the remedy. Once the symptoms are clear, the appropriate remedy can be used to treat an entire population. For example, if it was determined that *Gelsemium* was the best choice, then everyone in an infected community would use *Gelsemium 30* every day for a week to minimize the chance of contracting the flu. The remedy would then be taken once per week for a month until the threat was over and done.

A single remedy that treats large numbers of people in an epidemic is called the *genus epidemicus*. Homeopathic methodology states that a remedy is chosen on the individual's specific reaction to illness. However, with a *genus epidemicus*, this condition of treatment no longer applies because the individual becomes a part of a whole community. The response within that particular population is represented in the "herd," so that one remedy will suit many, if not all. The results can be astonishing.

During one of the cholera epidemics of the 1800s, the *genus epidemicus* was *Camphor* that did the good work. During the Spanish flu of 1919, it was *Gelsemium*. In these situations, the remedy would be administered in a 30th potency every few hours for many days.

METHOD THREE: DIFFERENT REACTIONS FOR DIFFERENT PEOPLE

Sometimes circumstances require a third set of rules within the homeopathic framework. Take the Fukushima nuclear reactor disaster, for example. To date, there's no clarity as to what exactly is being released into the air and water.

CUBA'S SOLUTION TO EPIDEMICS: HOMEOPATHY

As each country and region of the world faces disasters and community illness, homeopathy has been and remains a beacon of protection against community disease, regardless of the cause. An interesting case in point is Cuba and its plaguing swamp fever. In a country of little interest to the pharmaceutical industry, Cuban doctors have learned to fend for themselves outside mainstream practice by incorporating homeopathy into their healthcare system. In this setting, they recently conducted a full research program without Big Pharma's interference.

Enter the Finlay Institute, a Cuban research foundation. Although it has WHO-authorized services and even produces vaccines, it has turned to homeopathy for one of Cuba's most burdensome problems, leptospirosis. Sometimes called swamp fever, leptospirosis is the scourge of Cuba.

The spirochete, *Leptospira*, is transferred from rats to people during the flood season that inundates Cuba virtually every year. Because of the aftermaths of hurricanes and subsequent water contamination, this epidemic runs rampant throughout the island. Symptoms include fever, diarrhea, jaundice, vomiting, meningitis, liver failure, kidney damage, respiratory illness and death. By applying the precept of "like cures like," Cuban doctors and researchers of the Finlay Institute developed a homeopathic remedy. Derived from the bacterium that causes leptospirosis, the homeopathic remedy was made as a prophylactic and administered in two doses, seven to nine days apart. The wide scale treatment was administered by a team of Cuban doctors underwritten by the Cuban Ministry of Public Health. In 2008, within a population of five million, the nosode *Leptospirosis* in two potencies was administered to 2.4 million people who were the most susceptible to the disease.

Homeopathic physicians understand that this method of treatment will offer immunity and protection from contracting an illness, or at the least allow for a milder case if infection does occur. To say that the results of this mass homeopathic dosing were positive is to understate the magnitude of the program. The usual expected rate of infection—even when allopathic vaccination and antibiotics were used—was a few thousand cases of the disease, including some deaths. What was expected to occur before the homeopathic prophylactic was administered was calculated from analysis of previous leptospirosis outbreaks and rain schedule forecasts by the Cuban Government. In an astonishing outcome, only *ten* cases of leptospirosis were reported that year among the 2.4 million people who had been treated with the homeopathic nosode!

Remarkably, or rather, not so remarkably given homeopathy's history of effectiveness in epidemics in the last two hundred years, the method also produced no mortality of hospitalized patients. This was a success rate worthy of awe and emulation. Leptospirosis had plagued the small country for several years. Yet in the aftermath of the usual flooding in 2008 there was very nearly no disease among those receiving the homeopathic prophylactic! And the cost to the Cuban government? Two hundred thousand dollars. The usual cost for allopathic treatment of the disease had been more than two million dollars. Allopathic intervention, which relies solely on drugs and vaccinations, was proved not only comparatively less effective, but was littered with side effects and pricey programs.

As populations throughout the world search for medical care that produces healthy results and is safe and cost effective, homeopathy has an opportunity to re-emerge not from the top down, but from the grass roots up. The impetus will spread from one doc to another in need of genuine medicine, from one mother to the next, from one good neighbor sharing the word among others. Homeopathy for mass illness and wholesome medicine for humankind make an indomitable duo.

SOURCES: homeopathyresource.wordpress.com/2009/01/01/successful-use-of-homeopathy-in-over-5-million-people-reported-from-cuba/;
homeopathyresource.wordpress.com/2009/01/17/summary-of-cuban-experiences-on-leptospirosis-prevention-from-the-authors/

Many of the remedies used by homeopathy originate from the most noxious substances on earth.

And in this case, we must contend with toxins rather than contagious pathogens. Instead of a set of symptoms that are alike, we must consider different reactions because the type of poisons have not been fully identified. If we could make the assumption that only radioactive strontium was sent out from the reactor, then the remedy of choice might indeed be *Strontium carbonicum*. As a prophylactic it might be used in a 200c dose once every two weeks for a period of two months. However, to use this remedy without knowing what instigated the illness would be imprudent.

In light of the Japanese reactor fallout, it's tempting to seek simple answers. Unfortunately, a sweeping homeopathic solution that will protect or treat all is not yet available because of the number of poisons potentially involved.

Days after the explosions at the Fukushima nuclear reactor, I released to those on my ezine email list a compilation of remedies that I had noted from my teachers in India, Holland and Israel. This is likely only a partial list but will offer an idea of the breadth and depth of the considerations set before the homeopath in discovering which remedy is best suited to the individual. Most are included only to demonstrate the differences in the remedy choices. Homeopathic remedies are not like vitamins or supplements. No remedy on this list ought to be taken without the full homeopathic rationale intact. It is essential that someone suffering from radiation exposure consult with a qualified, classical homeopath.

The following are some of the medicines that may come into play over the next few months and perhaps years, based on the history of homeopathy use in this arena. Note that without a *genus epidemicus*, the remedies remain person specific, and the tiniest nuance can tip the remedy decision.

- *Cadmium iodatum*: The forte of this remedy is in thyroid disease, making it potentially useful in those whose thyroid is compromised specifically in relation to radiation exposure. We must know for sure that the thyroid is functioning improperly in order to justify the use of this remedy. The person who would take this remedy must also experience a great deal of heat, among other person-specific characteristics.
- *Cadmium sulph*: This remedy has been used

to treat people with side effects from radiation treatments. It was particularly helpful for my father over two decades ago when he suffered radiation poisoning.

- *Ceanothus americanus*: Spleen diseases that can be traced to exposure to radioactive material might well indicate this remedy. The spleen is often a target of radiation illness, so if that is the case, this remedy can be strongly considered.
- *Kali iodatum*: For general radiation poisoning that affects the thyroid as well as the sinuses, *Kali iodatum* can be a candidate for consideration. There are volumes written about this remedy, and we expect to utilize that information when forming a decision on the individualized remedy choice.
- *Strontium carb*: Ill effects to the bones after exposure to radiation can point to this remedy. It is one of our best remedies for addressing radioactive illness.
- *Radium bromatum*: This is a deep-acting remedy in homeopathic literature for those who suffer from radiation burns.
- *Uranium nitricum*: When illness is associated with exposure to radiation and results in or is coupled with diabetes, this remedy ought to be considered.
- *X-ray*: Many homeopaths use this remedy routinely after exposure to diagnostic x-rays and other forms of radiation exposure. It certainly can become a potential chief player in radiation poisoning.

METHOD FOUR: SOME TOXINS ACT SIMILARLY—HOME REMEDIES

Although it's not a simple matter to choose a remedy or protect oneself from radiation sickness and related ills, it would be heartless of homeopathy to leave folks out in the cold. It remains within the scope of this discussion to include some options that can offer at least some protective measures against radiation sickness. Best of all, one can feel safe employing them without the aid of a homeopath.

Many of the remedies used by homeopathy originate from the most noxious substances on earth. That's because the postulate "like cures like" readily applies to poisonous materials. It is via the dilution process that the toxicity of

the material is removed, its curative action is augmented, and we find good medicines. Once properly formulated, the more poisonous the original matter, the more restorative the remedy.

Here's an example of how this works. Let's say a child is exposed to arsenic from regularly playing on a deck that was pressure treated with arsenic salts. The signs the child exhibits form a cluster of symptoms known to be associated with arsenic poisoning: thirst, anxiety, restlessness, fidgeting, exhaustion, and, in short, neurological disorders. The child may respond to doses of *Arsenicum album* since the cause of his condition was the exposure to arsenic. Yet, in a happy turn of scientific luck, it needn't be only arsenic poisoning from which the illness stems. Symptoms may simply present similarly. The word homeopathy means "of like, or similar suffering." The cause of the illness, or its etiology, is likely to be similar, not exact.

Often during a circumstance like the nuclear disaster in Japan, people react with anxiety. The most efficacious remedy for anxiety about being poisoned is *Arsenicum album* 30. When the symptoms a person experiences coincides with this cluster, the use of the remedy will release him from the ills associated with poisoning. In the case of heightened anxiety about toxic substances *Arsenicum* 30, two to three times in one day, for one day only, can be taken to quell fears and minimize toxic overload.

Ruta graveolens is considered in homeopathic literature to protect from cellular damage after exposure to radiation. Most often it would be used in a 6th or 30th potency before and then again after exposure. For example, when using *Ruta* 30, it might be taken once per week for a month before exposure, and the same schedule after exposure.


Calendula ointment or tincture is prepared from an herb upon which homeopaths frequently depend. It was used in WWII for radiation burns as well as skin wounds in general. This can be used without homeopathic training and every household should have it on hand.

Phosphorus is used for ill effects from explosions, thus it might be effective in treating symptoms from having been near a nuclear explosion. It can be offered even months after an incident.

Within the world of homeopathy there is a small but powerful class of medicines called cell salts, or tissue salts. I spoke on this topic at the WAPF conference last November. A couple of these remedies come to mind that can be used on a daily basis as potential overall protection from toxins. The first one is *Calc fluor* 6x. It is the quintessential cell salt remedy to specifically protect the thyroid and bones, and can moderate the potential for future problems after radiation exposure. *Calc fluor* 6x can be put to work even with only minimal knowledge of homeopathy. However, like any homeopathic remedy, it's best to use only if needed and to stop if new symptoms arise. Many folks take this remedy two to three times per day when exposure is imminent.

Nat mur 6x is one of my favorite cell salts for toxic exposure in general. Not only is it associated with thyroid protection, but when someone feels vulnerable, this is often the remedy that is indicated. The remedy has the capacity to gird the person psychologically as well as physiologically when exposed to toxins. This remedy is generally taken two to three times each day; less often if there's improvement.

A potentially important—though not homeopathic—tip is offered by my friend, Kaayla Daniel, the Naughty Nutritionist. She advises dissolving one pound of baking soda with one pound of salt in a hot bath and soaking until it cools. No additional hot water should be added and this should be repeated once daily. It is reported to aid in releasing toxins from the system.

When it comes to epidemics, pandemics, and environmental disasters, homeopathy offers a conspectus of methods that have been counted upon throughout the world. Some are appropriately administered only from the hands of an experienced classical homeopath, and others are within reach of the public. 

Joette Calabrese, HMC, CCH, RSHom, is a certified classical homeopath who works with clients via phone and Skype. If you yearn to learn, contact her at HomeopathyWorks.net or call 716.941.1045 for a free 15 minute session to see if homeopathy is a good fit for you and your family. Visit Joette and download information on the upcoming launch of her homeopathy system designed for moms, to be announced soon. Click on Yearn to Learn.

Within the world of homeopathy there is a small but powerful class of medicines called cell salts, or tissue salts.

Ask the Doctor

PROTECTION FROM RADIATION SICKNESS

By Tom Cowan, MD

Question: *With clouds of radiation drifting eastward from the nuclear disaster in Japan, how can we protect ourselves holistically from radiation sickness?*

Answer: Many people have asked me what, if anything, they should do to prepare for the possibility of increased radiation exposure. Here are my suggestions, based on my understanding of the research on preventing and treating radiation sickness. For this article, I want to thank the many people who have written to me to help me sort out the voluminous research on this subject.

First, because there is no clear evidence of current danger that I know of, we should do now only what is safe, inexpensive and otherwise healthy. This includes our nourishing traditional or GAPS diet, with liberal amounts of good fats, broth, lacto-fermented vegetables and greens. Special foods that have been shown to counteract radiation sickness include naturally fermented miso, beets, kombucha and sea vegetables, such as kombu.

Fermented cod liver oil at a minimum dose of 1/2 teaspoon or 2 capsules is important.

Next, detoxifying baths with a cup of Epsom salts every couple of days is an inexpensive aid to boosting magnesium levels, relaxing muscles, and aiding the elimination channels.

As for medicines, at this point I recommend the safest and most proven aids in radiation exposure, which are vitamin C in the form of the highly absorbable liposomal C; the herb eleutherococcus, otherwise known as Siberian ginseng; and a seaweed called modifilan, a brown seaweed that is rich in a chemical called fucoi-dan, which studies have shown has great promise in combating radiation exposure. This seaweed contains liberal amounts of iodine, so the more toxic potassium iodide need not be taken at this point.

The doses of these medicines are as follows: Liposomal C: one teaspoon a day in any liquid, half that dose for children younger than five.

Eleutherococcus from Mediherb, Pure, Herb Pharm or other vendors: one tablet twice a day for adults, half that dose for children younger than five. For children unable to swallow pills, the tablets can be dissolved in hot water and mixed with any liquid. For tinctures, use as directed on labels and half dose for children.

Modifilan: three capsules twice a day for adults, one capsule twice a day for children younger than five. It can be mixed with any soft food, like applesauce.

All these medicines can be obtained online or you can call our office (415-334-1010), and we will send them out.

As for potassium iodide, this is a much more aggressive measure, and many people will have some trouble with the high doses that are suggested. But, if public health authorities say it's time, then it should be used—but only then, in my opinion. In that case, the dose is 130 mg of KI for adults and women who are breastfeeding; 65 mg for young people ages three through eighteen; children who are adult size should take the adult dose, and infants and children between one month and two years should take 32 mg; newborns to infants one month old should take 16 mg. The best source is either from your local pharmacy or by ordering Iodoral online.

Hopefully, this tragedy will be resolved soon. In the meantime, our hearts go out to the workers risking their health and lives to contain the damage, and to the people of Japan, who have endured so much. It is my hope that this event will lead to a needed change of awareness in our culture. ☯

Special foods
that have
been shown
to counteract
radiation
sickness
include
naturally
fermented
miso, beets,
kombucha
and sea
vegetables,
such as
kombu.

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Vaccine Epidemic:

How Corporate Greed, Biased Science, and Coercive Government Threaten Our Human Rights, Our Health, and Our Children

**By Louise K. Habakus and Mary Holland
Skyhorse Publishing, 2011**

It has taken over fifteen years of independent world-wide research by concerned parents, doctors, scientists and lawyers to spearhead the growing and increasingly vocal citizens' movement demanding full transparency and disclosure in all matters of vaccine development, safety concerns, government mandates and policies. Through the compelling voices of experts in ethics, law, science, medicine, business and history, *Vaccine Epidemic* insists that we seriously examine the many controversies surrounding this troubled subject, and provides ample documentation to spur us to act in our defense.

The exponential rise in numbers of children and others who suffer serious vaccine damage cannot be ignored, nor can the shameful lack of will of medical and governmental bodies to intervene in defense of those who have been or are at risk of harm. Instead, these same agencies have abdicated their roles as public safety defenders and have shielded vaccine manufacturers from scrutiny and legal repercussions from the damages their vaccines have caused. *Vaccine Epidemic* urges an honest and thorough assessment of both vaccination policy and safety.

Habakus and Holland examine these issues:

- The human right to vaccination choice.
- The ethics and constitutionality of vaccination mandates.
- Personal narratives of parents, children and soldiers who have suffered vaccine injury.
- Vaccine safety science and evidence-based medicine.
- Corrupting conflicts of interest in the national vaccine program.
- What should parents do? A review of eight

advice books on vaccines that span the gamut.

The recognition of intrinsic human rights is a hallmark of democratic societies, and the right to accept or decline vaccination is one such fundamental human right. The authors cite a wealth of international and national standards that uphold this basic right, such as the Nuremberg Code, free and informed consent, medical autonomy, due process, the human rights revolution, and public health revolutions in sanitation, hygiene and antibiotics. In spite of these noble principles and codes of ethics, U.S. government vaccination policies flagrantly put children's right to public education at risk as a consequence of their parents' partial or full non-compliance in vaccination programs.

The concept of herd immunity is used to justify vaccination mandates. However, the book exposes the many flaws in this unproven theory. Habakus states, "What is most troubling about the theory of herd immunity is that the original basis for its validity has nothing to do with vaccines. People observed a protective effect in the community when a sufficiently high number of individuals contracted the wild form of a disease and secured lifelong immunity. . . In the 1930s and 1940s, health officials began using 'techniques of mass persuasion' and 'aggressive salesmanship' to increase the public's compliance in receiving vaccinations."

For herd immunity to dictate vaccination policy, the government must prove that unvaccinated individuals will harm those that are vaccinated. This has never been demonstrated. Interestingly, the book reveals that a large portion of children who suffer from many childhood diseases have been vaccinated against them!

Additionally, since the increase in the vaccination schedule for children and the corresponding rapid rise in levels of vaccine damage, there has been a lack of justice, including an absence of due process and appropriate compensation for victims. A moral society would not allow a dubi-



The recognition of intrinsic human rights is a hallmark of democratic societies, and the right to accept or decline vaccination is one such fundamental right.

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ous public policy based on the flawed principle of “the greater good” to continue to cause damage and death. Parents have the ultimate authority over their children’s medical interventions. Vaccination choice must prevail.

The tragedies described in this book represent the wide-ranging effect of careless vaccine development and mandates. I attended the American Rally for Personal Rights at Grant Park in Chicago in the Spring of 2010, during the week of the Autism One conference. I was awestruck and absolutely grief-stricken by the many stories of vaccination damage I heard. *Vaccine Epidemic* is the outgrowth of that powerful rally. I knew that each incomprehensible story represented hundreds of thousands of children, and thousands more yet to be harmed.

Contributing author Michael Belkin, former director of the Hepatitis B Vaccine Project of the National Vaccine Information Center explains, “If you doubt the existence of adverse reactions to vaccines, you must first examine with your own eyes the U.S. Food and Drug Administration’s Vaccine Adverse Events Reporting System (VAERS), which is available and searchable online at www.medalerts.org. As of November 17, 2010, VAERS listed 352,650 reports of vaccine adverse events. Former FDA commissioner David Kessler wrote in the *Journal of the American Medical Association*, that ‘only 1 percent of serious adverse events are reported to the FDA.’”

Belkin’s daughter died at five weeks of age after receiving the hepatitis B vaccination. As of March 11, 2011, the tally of “adverse events” has risen to 361,519, and is acknowledged to represent only 1 to 10 percent of the actual number of those harmed as a result of vaccination.

The story is repeated over and over—a healthy child is born, and after receiving recommended vaccinations which start on the day of birth, that child is never the same—is stricken with autism—or maybe dead. Those who recover are very fortunate, as many cannot overcome the effects of vaccine-induced encephalitis—brain

inflammation—despite a comprehensive array of holistic therapies. Most terrifying are the stories of hopeless parents who take their damaged child’s life along with their own—those who can no longer carry the overwhelming and isolating burden of the care of their beloved.

Contributing author Amy Pingel chronicles her teenage daughter’s terrifying plunge from perfect health to dependence on a tracheostomy breathing tube and a feeding tube as a result of her severe reaction to the Gardasil vaccine. Her saga represents the result of the pervasive acceleration to develop more vaccines for older children and adults—vaccines that are pressed on the public by medical practitioners and the media. Yet there is little disclosure of their true risks.

Contributing author Air Force captain Richard Rovet, RN, insists that the enormous risks our servicemen take to defend our country should not include being used as guinea pigs for vaccine experimentation. Yet this is what is happening to our military personnel. In the Gulf War, more servicemen and servicewomen were damaged from the experimental vaccines than from the war itself. The truth about vaccines must be widely exposed.

Vaccine Epidemic exposes problematic issues about vaccine policy. A rigorous public challenge of these troubling practices must continue.

- Why have pharmaceutical companies recently focused on expanding the vaccine market?
- Why are so many vaccines given a quick stamp of approval from the CDC Advisory Committee on Immunization Practices and recommended to virtually all children?
- Why are the government and media allowed to exhibit bias and a lack of accountability for problems in the vaccine safety and policy?
- Why is forced vaccination for foster children allowed in the U.S.? When parents decline vaccination, how can they be charged with

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In the Gulf War, more servicemen and servicewomen were damaged from experimental vaccines than from the war itself.

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***Perfect Health Diet:
Four Steps to Renewed Health,
Youthful Vitality, and Long Life***
By Paul and Shou-Ching Jaminet
YinYang Press, 2010

Creating a diet that can be described in fewer than 300 pages and has as its primary aim not merely fat loss, muscle gain, heart health, better sex, or the treatment of a specific disease, but rather the all-encompassing pursuit of “perfect health” is an insurmountable task. It would be almost certainly impossible to accomplish in a way that is not subject to at least a few caveats and criticisms, but in writing *Perfect Health Diet* the Jaminets have done a stellar job in assembling a beginner’s guide and starting point for pursuing the perfect health we should be inheriting from our ancestors.

Paul Jaminet, PhD, is a physicist, software entrepreneur and entrepreneurial consultant, and Shou-Ching Jaminet, PhD, is a vascular biologist. They each recovered from chronic illness after searching for a diet that would help them heal, and *Perfect Health Diet* is the result. It is composed of four strategies for achieving optimal health: optimizing macronutrient ratios, minimizing food toxins, optimizing vitamin and mineral (micro) nutrition, and combating infectious disease.

Perfect Health Diet is based on “nutrient-rich superfoods” like egg yolks, liver and other organ meats, bone and joint soups, brain and bone marrow, seafood, seaweed, green leafy vegetables and fermented vegetables. It includes a number of other meats, fats, oils, and “safe starches” to provide sufficient protein and calories. With great foods like this, *Perfect Health Diet* gets my stamp of approval.

The diet is composed of 20 percent carbs, 65 percent fat, and 15 percent protein by calories. By weight, it is 65 percent plants and 35 percent animal foods. As such, it is a low-carb diet, but not a low-plant diet. Most of the carb calories

come from the “safe starches,” while most of the plant material consists of low-calorie, low-carbohydrate vegetables and a small amount of fruit.

The Jaminets consider that both macronutrients—protein, carbohydrate and fat—and micronutrients—vitamins and minerals—each have their own “marginal benefit curve,” where there is an optimal intake that constitutes the “plateau range.” Below the plateau range, deficiency sets in; above the plateau range, toxicity develops.

Although the Jaminets advocate a low-carb diet, they put a lot of emphasis on the body’s need for glucose as a structural molecule, a brain and muscle fuel, and an immune booster. They likewise recognize that although protein is critical, not only may large excesses lead to “rabbit starvation,” but even small excesses may decrease longevity and hamper the immune system. Glucose, for all its necessity, can poison the body’s tissues in excess, contributing to nerve damage, diabetes, strokes, heart attacks, bacterial infections, cancer and virtually every other disease. While polyunsaturated fats may contribute to oxidative stress and inflammation when provided in excess or in the wrong omega-3-to-omega-6 ratio, saturated and monounsaturated fats are the safe, non-toxic macronutrients.

The Jaminets make important points about the interconversion of carbohydrate and protein. The liver can make glucose from protein, so carbohydrates are not technically essential. However, the Jaminets make a strong case that it is preferable to include at least two hundred calories of carbohydrate in the diet, but allow flexibility in whether carbohydrate or protein is used to fulfill the remainder of the glucose requirement. There are people who do well on zero-carb diets, but those whose livers do not make glucose robustly may be vulnerable to glucose deficiency on such a diet.

The Jaminets also make important points about the conversion of carbohydrate to fat. If our livers convert much of the carbohydrate in



The Jaminets have done a stellar job in assembling a beginner’s guide to pursuing the perfect health we should be inheriting from our ancestors.

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a high-carb diet to loads and loads of saturated fat, how can eating saturated fat itself be harmful? Eating fat might be much safer than letting excess glucose hang around until it is eventually converted to fat anyway.

How do the authors arrive at the 20:65:15 ratio? The Jaminets rely largely on the convergence of four pieces of circumstantial evidence, supplemented with a copious amount of data gathered from free-living humans. None of this evidence is fool-proof, and I suspect that humans have the capacity to eat a much broader range of macronutrient ratios, but this ratio may nevertheless serve as an ideal starting point for many people.

Their first piece of circumstantial evidence is Loren Cordain's analysis of two hundred twenty-nine hunter-gatherers, who ate an average 30:50:15 macronutrient ratio with a 65:35 plant-to-animal ratio. They supplement this with isotope evidence suggesting our Paleolithic ancestors ate even more animal foods than this, and suggest that the encroachment of civilization on hunting territories may actually have increased carb intake. The Jaminets believe that our Paleolithic ancestors ate a range of 5-35 percent carb, 50-70 percent fat, and 15-25 percent protein.

These ratios are similar to those obtained from human breast milk, after adjusting for the excess of carbohydrate provided for the infant's growing brain, and are similar to the composition of the human body. Some research, moreover, shows that mice prefer high-fat diets. Beyond these studies in mice, however, the Jaminets provide a full chapter arguing that most mammals eat a high-fat diet, whether they are carnivores, omnivores or herbivores, because the plant foods that omnivores and herbivores eat are so fibrous that they obtain the bulk of their calories from short-chain fatty acids produced by fermentation of fiber in the gut. Together, these observations constitute the last three pieces of circumstantial evidence. The Jaminets further cite metabolic data from living humans about the capacity to

handle carbohydrate. All of these pieces of evidence are interesting and deserve consideration, but none of them constitutes the final word.

Katharine Milton has pointed out in a letter in the December, 2000 issue of the *American Journal of Clinical Nutrition* that when "casual agriculturists" and modern hunters using guns are excluded, Cordain's two hundred-twenty-nine "hunter-gatherers" are reduced to only twenty-four. Although Milton often seems biased in favor of plant foods, I'm not sure how much "hunter-gatherers" hunting with modern guns can tell us about what humans were eating forty thousand years ago.

Likewise, archaeological evidence will be subject to endless debate as new discoveries are made and as people argue about whether absence of evidence can truly indicate evidence of absence. The Jaminets cite "clear evidence for the grinding of cereal grains" dating to 21,500 BC, well within the Paleolithic era, and cite evidence of sorghum grain residues on stone tools at an African site dating to 103,000 BC. Researchers believe they used the sorghum grasses for bedding, kindling and possibly baskets. An eternity could be spent debating whether they were actually eating the grains, and if so, what proportion of their diet those grains constituted.

Hot off the presses, and adding grist, as it were, to the mill, a new report published in the *Proceedings of the National Academy of the Sciences* (December 27, 2010) found grain residues in the teeth of Neanderthals in Belgium and Iraq who are believed to have lived 36,000-46,000 years ago.

At the Iraq site, they found evidence of the consumption of seventy-three starch grains. Ten were members of the *Triticeae* tribe that includes wheat, barley and rye, and most likely close relatives of barley. Fifteen appeared to be members of the *Triticeae* tribe that had been cooked with moist heat. They also found sixteen dental residues of different species of the fruits of the date palm, and four other unidentified tree

Although the Jaminets advocate a low-carb diet, they put a lot of emphasis on the body's need for glucose as a structural molecule, a brain and muscle fuel, and an immune booster.

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fruit residues. The one hundred thirty-six dental starch residues at the Belgium site were more difficult to identify, but they included sorghum relatives. The authors of the report noted that the finding of starchy plant food consumption does not contradict isotope data, which can only detect meat and protein-rich plant foods. In other words, the types of evidence do not overlap enough to determine proportions of different food groups with any confidence.

The other evidence for an ideal macronutrient ratio presented in *Perfect Health Diet* is also subject to a number of caveats. Adult humans may have similar nutritional needs as infants, or they may not. Our nutritional needs may be similar to our body composition, but not if the turnover rate of different macronutrients is different. Short-chain fatty acids are metabolized quite differently from long-chain fatty acids, so it is difficult to see the metabolism of carnivorous and herbivorous animals as fundamentally the same, although it may be true that most mammals consume a diet low in carbohydrate. While the diet of other mammals is interesting, however, it is quite plausible that humans are unique among mammals in their dietary needs, just as they are unique in their technological and intellectual capacities. Long-term carbohydrate consumption, among a number of other variables, will alter our capacity for utilizing carbohydrate.

At the 2010 *Wise Traditions* Conference, Dr. Stephan Guyenet gave a presentation on the traditional diets of the Pacific islands where he uncovered health-promoting diets that were over 90 percent carbohydrate and others that were mostly fat, with a whopping 50 percent of calories as saturated fat. None of the populations had insulin resistance, diabetes or cardiovascular disease, and none of the islands' inhabitants were fat. In came refined foods, and they became vulnerable to all of these diseases. As Stephan pointed out on a blog soon after his talk (wholehealthsource.blogspot.com), these natives on high-carb diets had extraordinarily low fasting glucose and low

postprandial glucose. This reflects what has been known for almost a century: carbohydrate-feeding actually increases glucose tolerance, and oral glucose tolerance tests are misleading unless the subjects have been consuming a relatively constant intake of carbohydrate in the days preceding the test.

I thus find it very difficult to believe that humans must maintain their diets within a very narrow range of macronutrient ratios. More likely, the human body is extraordinarily flexible and can tolerate a wide range of carbohydrate and fat intakes.

That said, it may well be the case that in modern folks with damaged metabolism, low-carb is the way to go. Indeed, well controlled studies have clearly shown that low-carbohydrate diets are superior to lowfat diets by a multitude of criteria for people with various markers of the metabolic syndrome. Although it remains to be seen if this is a universal law, it is quite clear that this approach has helped not only the Jaminets but many others as well. I therefore consider the macronutrient advice in *Perfect Health Diet* to be an excellent starting point for many people, so long as they maintain the flexibility to adjust their macronutrient ratios in the ways that most benefit them.

Perfect Health Diet offers an important discussion of food toxins that is likely to benefit a great number of people. The section is entitled "Eat Paleo, Not Toxic," and includes toxins in what are generally considered Neolithic foods. They include grains, legumes, vegetable oils, and fructose, with a small section on sugar-cured meats, nightshades, foods cooked with high heat, and genetically modified foods.

I believe a more complete discussion of food toxicity would include the methods that humans have developed to detoxify these foods, variation in susceptibility to food toxins, the role of nutrition in preventing food intolerances, and a number of other food toxins that occur in foods that might not be conventionally limited to the

It is quite plausible that humans are unique among mammals in their dietary needs, just as they are unique in their technological and intellectual capacities.

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Neolithic era. Indeed, while the research on non-celiac gluten sensitivity is in its infancy, so is the research showing that food preparation can be used to detoxify wheat and possibly make it safe even for celiacs. Treating isolated pieces of intestine from non-celiacs with crude gluten and known toxic peptide fragments elicits an inflammatory response, but sufficient fermentation of wheat renders it non-toxic to celiacs when actually fed to them, at least over a short period of time. While neither of these hypotheses—that gluten is toxic to everyone or that gluten is only toxic if improperly prepared—have a large amount of support, the evidence that fermentation mitigates the toxicity of gluten is of higher quality and more advanced.

Although sweet potatoes are considered a safe starch on *Perfect Health Diet*, they are not very safe for me. When I discovered how yummy sweet potato fries are, I started eating several sweet potatoes per day. Within a few days, I was limping and my neck was stiff. By the end of the week, my limp was extreme. I looked online to see if I was eating anything high in oxalates, and sure enough, sweet potatoes are loaded with them. My symptoms dramatically improved after one day off sweet potatoes and were gone the second day. By contrast, I went gluten-free, casein-free (GFCF) for a year and a half, and FAILSAFE (low-amine, low-salicylate) for several months, and both diets did me more harm than good.

Matt Metzgar (mattmetzgar.com) recently blogged about a study showing that beef intolerance was an important cause of asthma in one set of patients, apparently much more important than wheat and other common suspects. In other words, modern food intolerances are rampant, and they can occur with a wide variety of foods that are otherwise healthy. I do think that non-Paleo foods constitute an important subset of likely candidates for food intolerance. *Perfect Health Diet* does a fantastic job bringing these candidates to people's attention, but the food tox-

in issue is ultimately likely to be much more complex, dependent in part on genetics, nutritional status during development, present nutritional status, intestinal flora and proper preparation of potentially toxic foods, and ultimately to a large degree modifiable with the correct therapeutic approaches.

Nevertheless, it is important to remove foods to which one is intolerant while one is trying to heal, even if the intolerance itself can be healed, and it may turn out that some intolerances can never be healed. *Perfect Health Diet* will definitely provide a great starting point for many people.

The Jaminets make the case that malnutrition is a pervasive problem even in the land of abundance. They focus their discussion on eight vitamins and minerals whose deficiencies they consider especially problematic: vitamin D, vitamin K₂, selenium, iodine, magnesium, copper, and chromium.

Their discussion of vitamin D is well balanced. They recommend keeping 25(OH)D levels between 35 and 50 ng/mL for people of European descent and between 30 and 40 ng/mL for people of African descent. They include a discussion of the potential harms of going much higher than 50 ng/mL. The Jaminets provide a discussion of seven nutrients we may be tempted to supplement but should avoid in most cases. These include vitamin A, calcium, zinc, niacin, vitamin E, folic acid and fish oil.

I think they come down on vitamin A a little harder than this poor little vitamin deserves, and I've expressed my views on this most recently in "The Cod Liver Oil Debate." Nevertheless, the Jaminets provide a reasoned discussion of the interactions between vitamins A and D and conclude that the ratio of these two vitamins should be about 3:1 in terms of IU. This conclusion seems within the range of plausibility. Most important, they recommend eating liver! Any discussion of vitamin A that results in a recommendation to eat liver is a good one.

Modern food intolerances are rampant, and they can occur with a wide variety of foods that are otherwise healthy.

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Their discussions of the other nutrients are very well reasoned and very valuable. This is probably one of the best overviews of vitamin and mineral nutrition available as part of a larger diet book.

The Jaminets link infectious disease to a long list of diseases, including neurological ones. Rather than considering sanitation, hygiene, or vaccines to be the most important tools in the fight against infectious disease, the Jaminets provide a refreshing integration of the fields of immunology and nutrition. They discuss eleven dietary and lifestyle strategies one can enlist in this fight, including keeping blood glucose and insulin low, optimizing essential fatty acid intake, avoiding toxic foods, optimizing vitamin D levels, taking iodine supplements, restricting protein, regular short fasts, eating ketogenic on certain days, long ketogenic “fasting” periods, getting high-quality sleep and relieving stress.

The Jaminets make an important point that much of the benefit of “fasting” comes from the

production of ketones. Thus, both fat and fiber, which generate short-chain fats in the colon, can be allowed during a fast. They also discuss potential benefits of restricting protein intake, which can serve both to starve pathogens of needed amino acids and to jump start a process called autophagy, wherein the cells begin digesting damaged or unneeded proteins and which can initiate the killing of intracellular pathogens. This section of the book contains some of the most up-to-date and cutting-edge ideas about the relationship between infectious diseases and health and the relationship between diet and lifestyle and the defense against pathogens.

Overall, *Perfect Health Diet* is an excellent introductory book to the world of paleo and traditional eating. It is well referenced, well reasoned, and should be convincing to both the lay reader and the professional. The content ranges from practical to technical, and some of the more technical sections may be intimidating to readers looking for someone to “just tell me what to eat,” but most people with an interest in nutrition or another science should find the book very readable. This book is especially preferable to some of the more lowfat takes on ancestral nutrition, and would be an excellent book to read as an introduction to that topic. The outstanding discussion of the interconversion of different macronutrients that the Jaminets provide would certainly shake people out of their fat-phobia, once they realize that any excess carbs they eat are just turned to fat anyway.

Review by Chris Masterjohn

Vaccine Epidemic, continued from page 60

vaccination, how can they be charged with “medical neglect” and risk the forced removal of their children?

- Why aren’t vaccine ingredients and dangers clearly and openly disclosed?
- While doctors are sworn to adhere to the Hippocratic oath, “Do no harm,” why are problems with vaccine safety ignored by the majority of today’s medical practitioners?
- Why has independent, peer-reviewed research demonstrating the problems with vaccine safety been ignored and systematically suppressed?

Finally, the book moves us to action. “The American Academy of Pediatrics and its spokespeople are suggesting the abolition of philosophical and religious exemption rights. They have a lot of influential support behind them—the

pharmaceutical industry, public health, government and media. We are in crisis. You can expect more federally recommended vaccines to be added to the schedule...more vaccines of unproven safety to reach the market...more efforts to dismiss vaccine injury...unless we change course, these projections will likely become reality.”

Things you can do now:

- Take a stand and sign the petition supporting vaccination choice at www.centerforpersonalrights.org. Donate to support their work.
- Stay informed—join the Center’s mailing list.
- Reach out—share and recommend the book, which is available on Amazon and in bookstores everywhere. More information is available at www.vaccineepidemic.com.
- Attend an event, and offer to sponsor one in your community.

Health freedom is an inalienable right. Whether it is food freedom or vaccination choice—it is one and the same issue. Just as we seek higher quality in our food choices, we demand honesty and free choice in all public policies that can affect our health. We must stand together and demand what is ours already—nothing less will do, for ourselves and our children.

Review by Kathryn Pirtle

All Thumbs Book Reviews



***Sleep, Interrupted:
A Physician Reveals the #1 Reason
Why So Many of Us are Sick and Tired***
By Steven Park, MD
Jodev Press, 2008

This book was written by an otolaryngologist. Pig Latin aside, that means he is a medical professional who specializes in the ear, nose and throat and just about anything else above the shoulders. The main message of the book is that inadequate sleep leads to a long list of symptoms you don't want. These symptoms include weight gain, cancer, ADHD in adults, constant fatigue, high blood pressure and heart attack. Mental impairment is also very common. Lack of sleep can lead to nodding off at work among other inconvenient things.

Most health experts simplistically advise you to get enough sleep, as though it is just a scheduling issue. For many people (like me sometimes), it isn't that simple. We spend enough time in bed but still are not getting enough good quality sleep. Orders to get more sleep don't help. How do we accomplish that and why is it so hard? Dr. Park offers some answers.

There can be many reasons why it is difficult to sleep. Eating or exercising too close to bedtime, too much light in the room, too much noise in the room, poor diet, electronic devices too close to the bed, injuries that make it hard to get comfortable and a snoring partner are some offenders. We don't really need a whole book on how to handle most of those problems and Dr. Park doesn't waste a lot of paper on them. What about people who have none of those problems and still can't sleep well? That is what the good doctor focuses on in this book.

If you snore or can't sleep on your back, you may be one of the people this book is talking to. Snoring is not a benign-but-annoying trait. It is a clue that there is a problem with your breathing while you sleep. Many people are not getting

the deep, restful sleep they need because they are not getting enough air. This is usually due to a structural problem in the nose or throat or both. Dr. Park notes that this occurs particularly often in people who have narrow faces, jaws and dental arches. Weston Price immediately springs to mind and more than once Dr. Park does briefly mention Price's observations of a correlation between diet and cranial structure. You will find more detail on this subject in the articles by Dr. Raymond Silkman ("Is It Mental or Is It Dental?" *Wise Traditions* Winter 2005/Spring 2006) and Dr. Louisa Williams ("From Attention Deficit to Sleep Apnea" *Wise Traditions* Fall 2009). Most readers are familiar with sleep apnea, and this book goes into considerable detail explaining all the variations of what happens, why it happens, and what the consequences are.

Dr. Park then explores possible solutions but admits that no single option works for everyone. In some less severe cases just sleeping on your side may be good enough. Breathe Right® adhesive strips to open nasal passages work for others. If you have a serious structural problem, however, nutritional or herbal solutions will not be enough. Another possibility is continuous positive airway pressure (CPAP). That means using forced air to keep airways open. This helps considerably for some but not everyone can sleep with a mask on their face like Darth Vader. Another option is a mandibular advancement device—sorry, more Pig Latin. That's just a gizmo that pulls your lower jaw forward to open up your airway. That can also be uncomfortable and many people eventually toss it to the side. If none of those options works, surgery to remove excess soft tissue is about the last resort. This sometimes helps, but usually less than half the time. Park does not recommend addictive nasal decongestants or sleeping pills.

If I haven't put you to sleep yet, you might be interested to know this book rates a thumbsUP.

Review by Tim Boyd

Most people
are not
getting the
deep, restful
sleep they
need because
they are
not getting
enough air.

All Thumbs Book Reviews

A Compromised Generation: The Epidemic of Chronic Illness in America's Children
By Beth Lambert with Victoria Kobliner
Sentient Publications, 2010

Teachers who have been around a few decades have noticed changes in their students. Allergies to dust, pollen and food have all gone way up. From 1980 to 2006, rates of childhood asthma tripled. The National Health and Nutrition Examination Survey (NHANES III) shows that over half the U.S. population is prone to some degree of hay fever. Behavioral problems have also increased, autism and ADHD in particular. This book looks at the root causes.

Early on the familiar name of Dr. Natasha Campbell-McBride comes up. Lambert has done her homework and has drawn on information from a wide range of sources. What she says is generally consistent with the findings of Campbell-McBride, concurring that the root cause of autism and its related spectrum of disorders won't be found in the head, but in the gut. The balance of bacteria is the key—too many bad guys, not enough good guys. The possible causes include acquiring an imbalance from the mother at birth, sugary junk food, chemicals in the diet, and medications, especially antibiotics.

Babies acquire bacteria from the birth canal during birth. Statistics indicate that babies born by C-section have a greater risk of health problems due to poor balance of bacteria. If the mother does not have a healthy bacterial balance, however, then children delivered vaginally may still develop the same health problems. Further bacterial reinforcements come from breastfeeding. One hopes that it is fairly obvious to most people why indiscriminate use of antibiotics will destroy the healthy balance of bacteria. Sugar and chemicals in food (MSG, carrageenan) tend to promote the kind of bacteria you don't want. Lambert goes into some detail with dietary recommendations and most of it is good.

Once a rare disorder, autism now affects one in a hundred American children. Lambert does the smart thing and looks at how our diet has changed in the last century or two. Besides the obvious rise in modern processed foods, today we don't eat as much cultured food like real yogurt (not the pretend stuff in most groceries) or fermented vegetables. She notes that fruits and vegetables were never a big part of the American diet but elsewhere says it is important to get lots of fruits and vegetables.

If you want to start an argument (or possibly a brawl) in a crowded room, bring up the subject of vaccine safety. Beth Lambert understands that and spends many pages on the subject anyway, which is good. She agrees with other experts we have reviewed in these pages that vaccines are not the root cause of autism. There are unvaccinated children with autism. That said, there is nevertheless a clear correlation between vaccines and autism. Generation Rescue sponsored an epidemiological study of over seventeen thousand children. The health of vaccinated and unvaccinated children was compared and no one needs a PhD in math to understand the difference between the two groups. Vaccinated boys in particular were much more likely to suffer from ADHD, asthma, autism or some neurological disorder.

In the book's section on nutritional advice, Lambert stays on my good side by recognizing the value of cod liver oil and coconut oil. She is also not as fat-phobic as the victims of public education and the mainstream media. Then we are reminded of the track record of mainstream medicine when it is confronted with a cure. It took about twenty years to convince them that there was a link between ulcers and *H. pylori* bacteria. They were at least as slow to get the link between pellagra and niacin deficiency or cancer and smoking. I hope it won't take anyone twenty years to see that my thumb is UP for this book.

Review by Tim Boyd



The root cause of autism and its related spectrum of disorders won't be found in the head, but in the gut.

All Thumbs Book Reviews



***The Four-Hour Body:*
*An Uncommon Guide to Rapid Fat Loss,
Incredible Sex and Becoming Superhuman*
By Timothy Ferriss
Crown Archetype, 2010**

Tim Ferriss. For anyone familiar with his book, *The Four-Hour Workweek* (4HWW), or his blog and other writings, you know firsthand with whom you are dealing: a complete non-conformist who achieves successes and results that defy explanation, who bucks modern trends and assumptions at will, and who knows how to entrance his audience. You are also dealing with someone whose behavior, by his own admission, borders on obsessive-compulsive.

Tim's newest book, *The Four-Hour Body* (4HB), continues his trademark maverick style. The book even garnered widespread mainstream media attention, including Yahoo, television's "The View" and Dr. Oz, and many other outlets. These toned down snippets and summaries of the book are far more palatable to the average American than some of the stuff inside, surely a wise selling point to get average folk interested in Ferriss' single-minded, all-encompassing passion to become "super-human."

In terms of content, the book contains a wide variety of useful information on health and wellness. Note also that the book is very large (592 pages) and heavy. You could lose a little excess weight just working your way through it. His coverage of cold and thermal load (page 122), glucose and blood sugar, kettlebells and other weight-loss and strength training tools is broad, well explained, fascinating, and easily applied by the average reader. Ferriss' gift of discarding the dross and finding the gold is evident, as readers of 4HWW already know and appreciate. His concept of the "minimum effective dose," introduced at the book's onset and applied throughout, is long overdue in a world that prides itself on more as better, rather than recognizing that better is better.

In terms of nutrition and food, however, Ferriss loses sight of the gold. The book is an unmitigated disaster from a WAPF perspective. In Ferriss' world, food is little more than an exploitable means to an end, and that end is clearly a modern American, MTV, culturally driven idealization of the "perfect-body." Call it ripped. Call it buff. Call it waif. Call it whatever, but food is merely a tool to achieve this "perfect body." That we all should accept this rather caricatured version of humanity as the pinnacle of perfection is assumed, not argued for.

Ferriss gets some things right (pointing out the "calories in equals calories out" model of weight loss is flawed, for instance) and many things wrong.

Dairy foods are disqualified. Grains are gone. Fruit is forbidden. One day per week is reserved as the proverbial "cheat day," but it isn't a day to freely eat a wider array of high quality foods while helping to rev up base body metabolism. Instead, this is a day of debauch to freely eat as much industrial garbage and crap as you can stuff down in eighteen hours. Don't worry, Ferriss says, on the cheat day you can just consume large amounts of caffeine so your body absorbs as little of this all-out assault on its well-being as possible (page 105).

Ferriss' daily permitted foods comprise a paltry list of fewer than twenty items (page 72), though at least he doesn't give the dire old warnings about saturated fat. But supplements and drugs are standard fare: magnesium, calcium, potassium, AGG and PAG....oh, wait, aren't some of these found abundantly in raw milk products from pastured animals? Drinking calories is also taboo, so lacto-fermented drinks are out (and Ferriss himself seems comfortable as a self-confessed "total Diet Coke whore," p. 98). But lots of water with meals is recommended to keep glucose at a certain level. What about the dilution of stomach acid and other ill effects on digestion, leading to all sorts of possible longer term consequences (page 146)?

In terms of nutrition and food, however, Ferriss loses sight of the gold. The book is an unmitigated disaster from a WAPF perspective.

All Thumbs Book Reviews

This utilitarian view of food is both extreme and extremely disturbing. It also appears very out of balance with Ferriss' general principle of enjoying life to the fullest, and thus he has become trapped by his own obsession. I would gladly trade the "perfect 12 pack" for a six-pack, and enjoy my butter, cheese and other seasonal fare with greater freedom. My hunch is that most others would as well, if only they knew that there was an option besides the extremism of books like 4HB and the appalling ill health offered by the SAD. We need bodies that can be both beautiful and functional, and food that can create both vibrant health and daily culinary and sensual delight.

Ferriss does mention the need to soak legumes like beans and the benefits of fermented foods, especially sauerkraut (including a puzzling mention of yogurt given his dairy deprivation diet!), but otherwise, there is little information related to proper food preparation, as Ferriss

advocates a diet that many stoics would consider ascetic. Dr. Price does receive passing mention four times, his work reduced to the admonition to make fermented foods "a mandatory piece of your dietary puzzle," and that some commonalities shared by traditional diets boost sexual function and procreative ability. What a strange way to use (or abuse!) Dr. Price's work!

While Ferriss' diet may be very effective for short and moderate term physical goals, the savvy reader is left to wonder what effect it may have on long term health, especially the health of children born to prospective parents adhering to a diet devoid of nutrient-dense foods and occasionally filled with tons of absolute trash.

Also, as a warning to readers, his chapters on human sexuality are very explicit, and thus some will want to avoid them or the book completely and this is why they go unmentioned in this review. Final verdict: thumbs down.

Review by John and Jessica Moody

We need bodies that can be both beautiful and functional, and food that can create both vibrant health and daily culinary and sensual delight.

RANGE MANAGEMENT SYMPOSIUM

Leading ranchers and dairy farming veterinarians described their experiences producing grass-fed milk, meat and cheese at a symposium on February 11, 2011 held in Denver, Colorado, by the Society for Range Management (www.rangelands.org) and the American Grassfed Association (www.americangrassfed.org).

Topics included genetics for best results from pasture feeding; a primer on grazing management by a USDA-NRCS rangeland management specialist; ground-breaking research on desert-adapted Criollo cattle; and workshops on obtaining American Grassfed certification. For further information, see the April 2011 issue of *Rangelands* journal (srmjournals.org).



PHOTO LEFT: Author Matt Barnes at the Society for Range Management conference. (Photo by Jim Thorpe.)

PHOTO RIGHT: Michael Bain, Southwest Grassfed Livestock Alliance (SWGLA), Ed Fredrickson, USDA Agricultural Research Service, and Vanessa Prileson, New Mexico State University, discussing desert-adapted livestock and grazing management at the Jornada Experimental Range during a SWGLA workshop.



Tim's DVD Reviews

Some Like It Raw

Directed by Andrea Love

A. Love Production

This animated, ten-minute documentary covers the history of milk in America and the circumstances that led to wide-scale pasteurization of that product. Our history lesson begins in the late nineteenth century when dairy cows were fed distillery swill and kept in miserable conditions. This scenario of course led to problems with milk quality. Rather than put the cows back on clean pasture where they belong, geniuses of the early 20th century concluded that pasteurization was the answer. Apparently geniuses don't care about nutrition or taste as much as they care about high-tech non-solutions.

There is an amusing scene in which a man writes about the question of milk and why it is so dangerous. As he writes, he lights up a cigarette, which, judging by the FDA attitudes, is a much less dangerous practice than consuming raw milk. Elsewhere we see the hypocrisy of banning raw milk while shrugging off "routine" illness and disease caused by tobacco, raw fish and spinach.

The acting is superb and the special effects are dazzling. Well, since this is entirely puppets and stop-motion photography with a little animation thrown in, I may be exaggerating a little. David Gumpert, chronicler of modern day raw milk wars, is featured in this film and he looks good—or at least his puppet-double looks good.

If you're looking for something like the film "Food, Inc." this obviously isn't it, but it is cute, very watchable, and gets a THUMBS UP.

What's Organic about Organic?

Produced by Shelley Rogers and Emily Triantaphylli

During World War II a lot of chemical weapons were produced. Then the war ended and it seemed a shame to let all that great chemical technology go to waste. So we declared war on the insect world and weeds and happily found

a never-ending use for those chemicals. Nowadays many farmers don't believe you can farm without engaging in chemical warfare. If any of that made sense to you then I would take that as further evidence that the human race is circling the drain.

This video presents a brief history of organic agriculture in the U.S. By way of comparison, in industrial factory farming we see the use of pesticides, chemical fertilizers and arsenic in chicken feed. A manager of a factory farm demonstrates that the cows are allowed to go anywhere they want to go—except outside.

In contrast, the precepts of organic agriculture encourage cows to be outdoors and discourage chemical weapons. There are many scenes of small farms with cows grazing on diverse pastures. The weeds other farmers try to kill are quite valuable to the cows. While all that probably looks good to most people, there are always questions about why organic food is more expensive. These concerns are addressed by looking at the bigger picture. When you look at the price tags on conventional and organic food, do the conventional food price tags include the cost of destruction from chemical runoff into the Gulf of Mexico or the Chesapeake Bay? Do those costs include treating and caring for a cancer-riddled population? The environmental and health costs are estimated to be at least nine billion dollars, but that cost has been cleverly separated from the numbers you see on the price tag.

Some doubt that organic farming is productive enough to feed the world. That is mostly based on outdated and very poorly done science. The United Nations has actually come out and said organic farming can feed the world without increasing the agricultural land base. I would also say that industrial farming is not feeding the world now and will continue to fall further behind. There is little debate that organic agriculture is better for the environment.

To be fair, there are problems with USDA

It is always cheaper in the short run to extract and exploit rather than to renew and regenerate.

Tim's DVD Reviews

organic standards. Mark Kastel, of Cornucopia Institute, along with others points to inadequate standards and lack of enforcement. Organic should be local. In the United States, how does anything from Chile, Argentina or China qualify as organic? It is estimated that around 10 percent of organic food comes from factory farms. I would especially like to hear a USDA official explain that.

The film provides a good explanation of why true organic almost has to be small or family-farm based. It is always cheaper in the short run to extract and exploit than to renew and regenerate. Corporations will always look at the short term. They will look at what is cheapest and will make the most money. They don't see externalized costs as their problem so they don't care. Given those realities, they will never see true organic as the best answer. Some smaller operators may have the same problems but we see many examples of those who are doing things right. The thumb is UP for this video.

Chow Down

**Edited by Mark Weinstein
Peanut Butter Productions**

We are told at the beginning of "Chow Down" that Americans are sick. Later on we see comedian Jon Stewart telling us the news is all pretty grim but, "as long as you have your health . . . Well, according to recent studies, you don't."

Chronic disease accounts for 70 percent of deaths in America. The U.S. now ranks forty-second in the world in life expectancy, down from eleventh place a mere twenty years ago. Half of all men who have heart attacks before age sixty-five die within eight years. Statistics like these are scattered regularly throughout the film but the focus is on three people who have been diagnosed with serious heart disease or type 2 diabetes. Charles, John and Garnet chose to opt out of drugs and surgery and try a diet-based approach to restore their health.

That is certainly good as far as it goes. They

even beat up on the USDA food pyramid, which is also good. Then the faces of Caldwell Esselstyn (*Prevent and Reverse Heart Disease*) and T. Colin Campbell (*The China Study*) appear as they promote their favorite gospel. If you want to be healthy, then eating is suffering. For a good example of how to eat, look to the rabbit. They even show an animation of rabbits piling up the kinds of food you should eat. As you know, your beef, bacon and butter are safe from the rabbit-people. Don't get me wrong. A salad is fine as long as it is in the right container—a nice, big juicy steak.

John went from eating KFC and pizza almost every day, which would kill just about anybody, to eating like an herbivore. Charles tempts death by telling the world on camera that his wife used to be a bad cook and many times he was unable to identify what he was eating. His wife sits beside him as he shares this information, and I got the feeling he might have bigger problems than a heart attack if he keeps that up. Garnet and her family were all going to do "the diet" together. That lasted almost all the way through one meal before they bailed on her. This is where I have to give the film some credit. They are honest and up front about the difficulty in eating that sort of diet. Charles has changed his paradigm and admits eating isn't fun anymore. Garnet was unhappy that she was on her own since nobody else in her family could take it. There were even several interviews with other people on the street who would clearly rather die than give up the good stuff like sugar. So the claim is that you will live longer if you join the rabbit-people but you will hate life because you can't eat anything delicious. That's great news.

Esselstyn tries to defend all this by resorting to the Framingham study. He points out that a third of all heart attack victims in the study had cholesterol levels between 150 and 200mg/dl. What is his interpretation of this fact? Since there is no evidence that keeping cholesterol below 200mg/dl reduces heart attacks, we must drive that killer cholesterol even *lower*! Unfortunately he neglects to cite any evidence that shows levels below 150 reduce heart attack risk. I wouldn't be surprised if the heart attack rate does decline at such levels because anyone with cholesterol that low will probably die of cancer, stroke or suicidal depression before they have time to have a heart attack. My studies show that your health will not suffer at all if you pass up any opportunity to see this movie. Studies also show that "Chow Down" rates a thumbs DOWN.

What in the World Are They Spraying?

**Produced by G. Edward Griffin, Michael J. Murphy,
Paul Wittenberger
Truth Media Productions**

Geoengineering involves modifying the environment on a large scale. If you didn't know that, don't feel bad. All but a handful of congressmen don't know either, or claim they don't. Dr. John Holdren, director of

Tim's DVD Reviews

White House Office of Science and Technology Policy does know. Early in the film he is shown declaring we “have to keep geoengineering on the table because we might get desperate enough to want to use it.” Not only does he know about the practice, he knows it is extremely dangerous.

One geoengineering scheme involves spraying particulate matter in the stratosphere to modify the weather. As the title suggests, that is the focus of this movie. What are they spraying? According to numerous patents related to the subject, the possibilities include aluminum oxide (or alumina), barium and strontium. Is anyone actually doing this? The producers of this movie present compelling evidence that they are.


The American Association for the Advancement of Science (AAAS) held a seminar on the subject of artificial manipulation of the climate in February 2010 in San Diego. David Keith, one of the leaders in the field, was asked about the danger of filling the atmosphere with these particles. He replied that their studies have shown no danger. The questioner then repeated his question, to be sure he understood correctly—Keith reiterated his belief that large amounts of alumina particles in the atmosphere posed no threat to human health. Mr. Keith, looking like a deer caught in headlights, then altered his answer and responded that they were only just beginning to study that and didn't know. As he spoke those words, the scene cut to a close-up of the title page of a study by the Air Force Research Lab in Dayton, Ohio investigating that very topic.

Visual evidence in the sky has become known as chemtrails, which are highly controversial and by themselves prove nothing. There is, however, much more evidence than just suspicious air trails. Mt. Shasta, California, is far from any industrial area and is generally considered a pristine source of fresh water ice. Tourists routinely drink it. If it turned out that it had over one thousand parts per million (ppm) of aluminum, that would require government action according to regulations. Recent tests show ice

and water on Mt. Shasta to contain *sixty-four thousand ppm* of aluminum. So far the government isn't doing anything about it. Farm soils near Mt. Shasta show up to almost four hundred thousand ppm. Michael Murphy and company also visited Hawaii and found a little girl who was born and raised on an organic farm on the islands. One would think she should be clean of any toxic chemicals or minerals. Hair analysis showed she is very high in aluminum.

One indicator of possible aluminum contamination is a simple soil pH test. Chemtrail chemicals tend to raise significantly the pH of soil, which does bad things to the life in the soil, the plants, and people. Many farms and areas are seeing exactly those things. Some speculate that increases in Alzheimer's disease could be attributable to that increased aluminum exposure. In the American West, wildfires are taking wild to a whole new level in recent years. Some are wondering whether there is a connection. And Monsanto is engineering seeds to grow in more alkaline (higher pH) soil. In theory, chemtrails could make organic farming impossible and force us to use Frankenseeds.

Murphy and crew end up in Washington, D.C., where they try to find out what members of Congress think about geoengineering. The main thing he learns is that nothing makes a congressman look more annoyed, nothing makes him walk faster, than a constituent trying to communicate with him. I often view government as being like a dinosaur with two brains, one for the front and one for the hindquarters. The two brains don't communicate very well.

If there is some natural phenomenon behind all this, it has a strange affinity for NATO countries. If your crops or garden are in a NATO country and aren't doing very well, a simple soil pH test may give you a clue. If the pH is too high you might want to test for aluminum. If your soil is high in aluminum, look up in the sky. One of those clouds might look like my thumb, pointing UP for this DVD. 

Review by Tim Boyd

Chemtrail chemicals tend to raise significantly the pH of the soil, which does bad things to the life in the soil, the plants, and people.

Growing Wise Kids

CAMP-SIDE CUISINE

Tips for Summertime Mobile Meals

By Jen Allbritton, CN

Nothing beats lounging in a secluded part of the forest with little else than the wonders of nature for entertainment. But if camping isn't your cup of tea, a day at the beach or winding along on a long train ride may be. Whatever the adventure, meals will be required. And while on your recharging retreat, you don't have to leave your food tenets back at the home front. Yes, lugging food around is a challenge, and there are tight cooking quarters (if any at all), as well as refrigeration issues to contend with. But don't fret—traditional food principles can be applied at the fireside (or wherever you are) without much more effort than is applied at home. So pack those bags and feel confident about your travels, because you can keep everyone well-nourished on the road!

EARLY BIRDS CATCH THE NUTRIENTS

If there is one thing that becomes strikingly clear when living a traditional-food lifestyle, it is the need to think ahead. At home, knowing what you will serve for the next several meals lightens the process for the family chef, but when traveling such advance planning becomes irrevocably

non-negotiable.

Starting to organize your mobile food plans several weeks in advance is best. Not only are there the decisions to make on what to bring, but as a traditional foodie, you know that the most nutritious meals often are prepared in stages, such as soaking, sprouting, souring and dehydrating. Here are some goals for our foods for the road:

- They can sustain some bumps along the way and maintain a semblance of original structure.
- They need minimal or no refrigeration.
- They need little or no prep or cooking on site.
- They preferably can be eaten with fingers and a napkin, to minimize clean-up.

COOLER KEEPERS

These foods are best kept in a cooler or fridge, but are still easy to grab on-the-go. Ice is usually easily accessible on the road or in hotels. Use glass storage containers if you desire, but BPA-free plastic may be a more practical storage choice while on the road. However, one thing that is not negotiable for my family is their drinking

Traditional food principles can be applied at the fireside without much more effort than is applied at home.

COOLER KEEPER IDEAS

FRUIT: Most fruits don't actually need refrigeration, but sometimes taste better when chilled.

FRUIT DIP: Try mixing crispy cashew butter with yogurt and a touch of honey; it is creamy and easy to scoop.

YOGURT with berries and honey.

HUMMUS: Good dipping for veggie sticks or crackers.

HARD BOILED EGGS: These little pre-cooked wonders should remain refrigerated and if left in their shell can last for a good week. Camping supply stores or on-line retailers carry egg storage containers that are hard plastic to protect eggs from damage.

SLICED LUNCH MEATS: These slices are perfect for rolling around hunks of cheese. These sandwich rolls make an easy purchase during a quick mid-trip grocery run and can be eaten in the car.

SUMMER SAUSAGE OR SALAMI SLICES: Serve with cheese and a handful of cherry tomatoes.

containers: we stay away from plastic bottles, particularly in hotter times of the year. The carcinogenic, estrogen-like compounds leached from plastic (especially when heated in a warm car on a hot day) into water or other beverages are not worth the risk (read more in the informative piece titled “Natural Protection against Estrogen Overload” found at www.westonaprice.org).

For cooler keeper ideas, see the sidebar on page 73. Be sure to keep your eyes peeled for local farmers markets or roadside produce stands as you travel to replenish your stash. You can also check out www.local-harvest.com to find farmers markets, family farms and other sources of sustainably grown food in the area you are visiting.

PRE-PREPARED INSPIRATION

Travel is the perfect time to take advantage of the crock pot’s portability; some units even have locking lids for safer transporting. It can be used in hotel rooms, kitchenettes and campers alike. Use this nifty tool as you normally do if that works for you on the road, but for faster, cleaner meal prep, use it more as a way to warm your pre-prepared meals. Another great thing about the crock pot is that you can put your food in and walk away without worry, and people can come in and grab some grub when their tummies start grumbling.

Before you leave home, make a big batch of soup, freeze in meal-sized portions and heat it up in the crock pot when needed. Another idea is to brown beef and make the sloppy joe sauce separately, toss them together in the crock pot until time to eat, with no need to brown the meat on

location. The same can be done with a meatloaf or meatballs, which can either be cooked or reheated in the crock pot on your trip.

Make a lovely breakfast or dessert of baked apples in the crock pot by removing the cores of your apples with a paring knife or even a spoon handle. Be sure to keep the bottom of the apple intact. Drizzle a touch of honey into the openings, or sprinkle in maple sugar, cinnamon, butter or coconut oil and crispy nuts. Cook on low for six to eight hours.

For campfire ideas, see below.

Whether you are RVing cross-country, enjoying the mountains on a weekend camping trip, or you are just an on-the-road-eater, these fun, mobile foods will help keep you and your family nutritionally charged. ☺☺

Jen Allbritton is a certified nutritionist and author. She lives with her family in Colorado and spends lots of time in her kitchen cooking up WAPF-friendly creations. Contact her if you'd like to learn more about subjects related to diet and children at jen@growingwisekids.com.

AROUND THE CAMPFIRE

COOKING ON A STICK: Half the fun of camping is the campfire meals, and with some creativity, many meals can be cooked and enjoyed right around the flames. There is the basic hotdog or bratwurst (pasture-raised beef, please), but what about wrapping those wieners with a slice of nitrate-free bacon first? Or molding meatloaf around a stick, covering with foil (consider the variety lined with parchment paper to put next to your food) and cooking that over the campfire. Use your imagination!

ROCK-STOVE: My friend Moneca uses nature’s cooking tools while backpacking. “I buy the small, sprouted frozen corn tortillas from Food for Life. I put a package of those straight from the freezer in my pack along with a bag of shredded raw cheese and a bag of pre-cooked ground beef that I cook with a little butter, sea salt, and chili powder (all pretty lightweight). When we build our fire we make a fire ring with some rocks that have a flat top. Once the fire is going and those rocks get hot, I put the tortilla right on the hot rock and top with just cheese or cheese and the meat. The cheese is melted in no time.”

BANANA BOATS: Move over s’mores, banana boats win out on taste and fun! Put a slit in the banana peel and add any goodies you like: nut butter, butter or coconut oil (approximately 1/2 tablespoon), flaked coconut, crispy nuts, strawberries, carob chips, a few preservative-free marshmallows (gulp...we are vacationing, remember!). Wrap in foil, being sure to seal the ends well. Place in a grill over the campfire (seam side up), on top of hot coals, on a barbecue, or in a 300-degree oven for seven to ten minutes. When cool, scoop out with a spoon and eat as is, or slather on a graham cracker.

BAKED APPLES: Similar to the crock pot version mentioned above, fill your cored apples with yummy fat, nuts, sweetener and spices. Consider dried fruits too. Wrap each apple in heavy duty foil (preferably lined with parchment paper), twisting the ends at the top to form a handle. Place the apples on the coals for approximately 15 minutes, or until the apples

NO FRIDGE NEEDED: FOODS PERFECT FOR THE KNAPSACK OR BEACH BAG

MEAT AND LIVER JERKY: Jerky can be made out of almost any meat—beef, venison, turkey, buffalo. Using ground meat can be more economical than using whole cuts. And not only is ground meat jerky a great hiding place for the all-important pastured liver, but you can power-pack your recipe with different herbs, spices and fun additions like ground dried blueberries or cranberries to give it a special kick. Below is a basic recipe; play with it at will.

1 - 1 1/2 pounds ground meat

1 teaspoon sea salt

Mexican: cumin, onion (powder or flakes), chili powder, chipotle powder, oregano

Sweet and Spicy: Rapadura sugar, sea salt, ground mustard seed, garlic, black pepper, ground red pepper

Pizza: Basil, oregano, garlic, salt, pepper

Teriyaki: garlic, ginger, soy sauce (tamari) and powdered lime or lemon peel

There are several ways to make your jerky. Simply spreading it out on a dehydrator sheet or piece of parchment paper to about 1/8" inch thickness, scored into your desired size, is fine. But to make the more uniform shapes, a cookie press works too. And if you really become a jerky-connoisseur, there are jerky guns available just for ground meats, which push out even strips or circular shapes. Pop your trays into a dehydrator or low-temperature oven set at 150 degrees for up to eighteen hours. Keep checking your jerky. Flip when it is flip-able to get the underside adequately dried. Test your jerky; you don't want to see pink, but you don't want it to be so un-pink that it becomes too dry either. The drying time will depend on your thickness and chosen ingredients. Store in an airtight container or in the fridge for up to two weeks.

FISH JERKY: Sally Fallon Morell provides details for Salmon Jerky in *Nourishing Traditions* that is downright delicious!

SEMI-HARD TO HARD CHEESES: Cheddar, Colby, Swiss, Parmesan (or Parmigiano Reggiano), Gouda, Romano, Jarlsberg, Monterey Jack. Harder cheeses have less moisture content than softer varieties, and the aging process—which utilizes enzymes, bacteria, and molds—gives it texture and allows it to keep longer.

Cheese was accidentally discovered many moons ago by nomadic tribes who used available storage containers for their milk—animal stomachs. Rennet naturally occurs in the stomach, transforming sweet milk into curds and whey. From there, cheese making evolved into a way to preserve milk without refrigeration. Generally, the longer a cheese is aged (or ripened), the better it will keep at room temperature. Bear in mind, room temperature is roughly 70 degrees, not a 90-degree backpack during the hottest part of the day. Cheese may "sweat" a bit at room temperature or feel oily, which is fine. Wrap your cheese in a few layers of cheesecloth or paper; the small holes will allow the cheese to breathe and prevent it from drying out. Plastic wrap prevents the cheese from breathing, allowing moisture to collect. Coincidentally, most cheeses are even more scrumptious at room temperature compared to cold from the fridge.

CRISPY NUT AND SEED TRAIL MIX: Our favorite blend is date pieces, crispy almonds, dried cherries and crispy cashews with a sprinkle of dried coconut. Another yummy mixture is chopped pineapple pieces, crispy almonds and walnuts and some broken up banana chip pieces. See *Nourishing Traditions* for more details on crispy nuts and seeds, which have been brought to life through soaking and dehydrating to maximize their nutrition and digestion.

POPCORN: Top with plenty of real butter and sea salt to taste.

CRISPY PANCAKES: Make a batch of your favorite pancakes and put them in a low temperature oven (around 150 degrees) or dehydrator until crispy. They make a lovely treat as is, or as vehicles for dipping.

DRIED FRUITS: apricots, pineapples, apples, cherries, and so on.

BANANA TAR: Bananas usually don't do well for travel, but transform them into banana tar leather and you have a keeper! Blend together a combo of six ripe bananas (peeled), one tablespoon vanilla, four tablespoons carob powder, 1/2 teaspoon green stevia powder (not white extract), 1/4-1/3 cup coconut oil and a handful of crispy nuts. Spread mixture on dehydrator sheet and dehydrate at 150 degrees or so, starting to check at about four hours, flip and dry again until leathery.

Other yummy considerations for travel foods that require no refrigeration:

APPLE CHIPS: (store bought or homemade)

HOMEMADE BARS: (see breakfast bar recipe in article titled "Morning Nourishment: The Benefits, the Bounty & Creative Ideas" found at www.westonaprice.org)

FRUIT LEATHERS: (store bought or homemade): try mango raspberry, apple cinnamon or apricot or tomato. A general recipe is three cups fruit purée (blended fruit), a splash of lemon juice (maybe two teaspoons) and a little honey or maple syrup if desired. Spread mixture on a dehydrator tray and dehydrate at approximately 150 degrees until leathery, but not crisp. These can be surprisingly good with hard cheese.

SARDINES IN CAN WITH TOMATO SAUCE: These are so yummy to eat right out of the can! But you can use crackers too.

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Soy Alert!

ATLAS SOY-LED: AYN RAND'S TAKE ON THE SOYBEAN

By Kaayla T. Daniel, PhD

"Atlas Shrugged: Part I" opened this spring in the movie theaters, leading me to reread Ayn Rand's epic novel and to think about all that's being done to our food supply "for our own good." Indeed we are already seeing disastrous effects on personal and planetary health from Big Brother's wasteful and corrupt subsidies of corn, soy, wheat and Big Pfood; from the increasing control over independent farmers through orders, directives, restrictions and police actions; and even growing restrictions on what families can choose to eat.

Ayn Rand's 1,168-page novel, first published in 1957, rarely mentions food directly. Indeed we might think her protagonist Dagny Taggart lives on coffee and cigarettes, except for a single incident in Part II when she eats the best "hamburger sandwich" she ever tasted, at a little diner located on the summit of a long, hard climb out of Cheyenne, Wyoming.

That hamburger, of course, was not just a burger, but a product of simple ingredients and of an unusual skill. It had been prepared with

integrity, by a philosopher genius, no less, and was authentic and real with nothing ersatz, tricky or pretentious about it. In short, an *über* burger that represented Ayn Rand's and Dagny Taggart's highest values.

The food Rand chose to represent the lowest values was soy. In Part III the author introduces the flabby mystic Emma "Ma" Chambers, whose "progressive" dietary views led to the waste of millions of tax dollars on "Project Soybean." Ma had been appointed the nation's food czar out of pity, not intelligence or ability. With no objective evidence whatsoever, Ma felt soybeans would make "an excellent substitute for bread, meat, cereals and coffee" and that Americans not only needed to eat more like Asians but should be forced to do so for their own good. Ma's feeling that soybeans were of a higher "moral value" than wheat, led to government orders to pull trains out of the midwest, loss of the nation's wheat crop, economic collapse and widespread starvation. As for the soybean crop, it too was lost thanks to the rotters' incompetence.

Given Hollywood's current worship of veganism, I rather doubt "Project Soybean" will enliven "Atlas Shrugged" Part II or III, should those sequels ever be made. As for vegetarianism, it was a symbol of silliness, failure and poverty back in Rand's day. To say that someone was a "vegetable" meant they were inactive and indeed nearly comatose. Those Ayn Rand admired not only had "meaty" ideas but the motive power to act decisively, effectively, appropriately and imaginatively on them. ☺☺

THE 2011 SOY FOODS MARKET REPORT

"Soyfoods: The U.S. Market Report" has come out and it reports a "protracted slide" in soy milk sales as well as "lackluster performance in sales of tofu and soy infant formula" in the year 2010.

The industry blames three factors: competition from almond, rice, coconut, hemp and other non dairy milks: "premium pricing" for many soy products; and "widely distributed information about the impact of soy on health."

That last factor makes me proud. Seems the decade-long campaign by the Weston A. Price Foundation is finally paying off. We've also been greatly helped in the past year by Dr. Joseph Mercola, who has reached millions through his website www.mercola.com, the world's leading health and dietary website. Numerous other websites too have helped the message go viral. The soy controversy even aired on *The Dr Oz Show* on October 5 in a segment that featured Dr Oz, Dr Mark Hyman and me.

Despite growing concerns about modern, industrial soy processing techniques, meat analogue sales saw a four percent growth in 2010 compared to 2009. The largest growth was in the soy-protein energy bar category with a whopping 18 percent increase in just the one year of 2010. According to Joe Jordan, Content Director of Soyatech, "Marketers of soy-based foods have been finding success in developing delicious meat alternative products with sophisticated flavor profiles. In addition, 14 energy bar brands appeared among the top 50 soyfood brands in 2010, indicating that this broad market affords many opportunities for creative food manufacturers to reach their key target markets."

What are the "current market drivers"? Soyatech thinks it's fueled by three things: the consumer focus on convenience; widespread interest in meat-free foods; and new USDA food guidelines that "affect consumer understanding of—and interest in—the added value of foods made from the nutritious soybean."

In short, the good news is that soy sales are slumping, and the bad news is they are not plummeting. And it's very good news of course that soy infant formula sales may have finally peaked. Meanwhile, we at the WAPF will continue to do our best to alert people to the risks of "convenience" foods that sooner or later create inconvenient health problems, and the malnutrition and health risks associated with vegan diets and soy-based and other meat substitutes.

Legislative Updates

THE FOOD SAFETY BILL IMPLEMENTATION PROCESS BEGINS

By Judith McGeary, Esq.

Even after the long fight over the passage of the Food Safety Modernization Act (FSMA), the reality is that much of the work is just now beginning. The real-world impact of the FSMA will depend in large part on how the agency implements it through the rulemaking process and how much funding Congress allocates.

BUDGET CONSIDERATIONS

The appropriations process began in earnest in late May, when the House Agricultural Appropriations Subcommittee released the initial draft of the appropriations bill for Fiscal Year (FY) 2012 agriculture, rural development, the Food and Drug Administration, and related agencies. The FDA's total budget is a staggering 3.65 billion dollars, yet even that is 560 million dollars less than what the agency had requested. The bill includes anticipated revenues from user fees under the FSMA, specifically twelve million dollars from recall fees, fourteen million dollars from food reinspection fees, and thirty-six million dollars for voluntary qualified importer program fees. WAPF has opposed the imposition of user fees because they are effectively a "food tax" and because they could disproportionately impact small- and medium-scale producers. Fortunately, the amount allocated for user fees on domestic producers is relatively small, although we will closely monitor the situation as the appropriations bill moves through the process.

Ultimately, the real issue is how FDA will use its funds, whether appropriated by Congress or from user fees. While the Tester-Hagan amendment protects direct-marketing, small-scale producers from having to develop HACCP plans, they remain subject to inspection as they were even before the FSMA passed. In addition, medium-scale producers and those who do not direct-market most of their products are subject to the full scope of the bill. Both types of produc-

ers could therefore be impacted by the proposed user fees and by how FDA chooses to prioritize its inspection and enforcement actions. Thus, the FDA's budget, and how it uses it, is a significant issue for our farmers and producers.

RULEMAKING PROCESS

The other prong of FSMA implementation is the rulemaking process. In early May, FDA issued the first new rules under the Food Safety Modernization Act (FSMA), meeting the first deadlines imposed by the Act. Both of these rules were issued as "interim final rules," which means they will go into effect even before the public comment period closes. This method was specifically directed in the FSMA.

The first rule addresses prior notice of food shipments imported from other countries. Under current law, anyone who is importing food that is subject to FDA's jurisdiction (that is, anything except meat, poultry or egg products) must submit prior notification to the FDA. (See 21 C.F.R. § 1.278-1.279.) The FSMA added the new requirement that such notice include "any country to which the article has been refused entry." (FSMA Sec. 304.) The FDA's new rule amends the regulations accordingly.

The second rule addresses the standard for FDA to administratively detain food. Administrative detention is a limited enforcement power — the agency can detain an article of food for no more than thirty days. (See 21 C.F.R. § 1.379.) The purpose of the detention is to keep the food out of commerce while the FDA institutes a seizure or injunction action.


The FSMA lowered the standard necessary for FDA to administratively detain food, from "credible evidence" that the food "presents a threat of serious adverse health consequences of death" to "reason to believe" that the food is "adulterated or misbranded." The FDA's recent

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interim rule incorporates the new, lower standard.

We strongly disagree with the lowering of the standard. The practical impact of the change, however, is unclear. In the preamble to the new rule, FDA notes that, while it was given authority to administratively detain food in 2002, it has never used that authority, but instead has relied on the other enforcement tools in its arsenal. (76 Fed. Reg. 25538, 25540.) But the agency also noted that, with the lower standard, it is “more likely to use administrative detention” when the food “may cause temporary or medically reversible adverse health consequences.” (76

Fed. Reg. 25540.) So the FDA may begin using administrative detention, but the majority of its actions are still likely to be through other methods: immediate seizure, recalls, or by referral to State authorities (which is frequently how it attacks raw milk and raw milk cheese producers).

These first two rules involved no exercise of discretion by the agency—they tracked the FSMA language entirely. The real issues will arise when FDA proposes rules to implement the HACCP and produce safety standard provisions of FMSA. FDA has begun the process of developing these rules, holding several public meetings and inviting informal comments. WAPF is staying involved to protect the interests of our farmers and food producers, and recently submitted initial comments to the FDA (see below). Once the FDA publishes proposed rules, we will need all of our members to be involved in submitting public comments, so stay tuned for action alerts later this year. 

COMMENTS SUBMITTED TO FDA

To the U.S. Food and Drug Administration:

The Weston A. Price Foundation and the Farm and Ranch Freedom Alliance jointly submit these comments on the Preventative Controls for Facilities under the FDA Food Safety Modernization Act (FSMA).

The Weston A. Price Foundation (WAPF) is a nonprofit organization with members in every state and internationally. WAPF was founded in 1999 to disseminate the research of Dr. Weston Price, whose studies of isolated nonindustrialized peoples established the parameters of human health and determined the optimum characteristics of human diets. WAPF is dedicated to restoring nutrient-dense foods to the human diet through education, research and activism.

The Farm and Ranch Freedom Alliance (FARFA) is a non-profit organization headquartered in Texas with members in 45 states. FARFA advocates for farmers, ranchers, and homesteaders through public education and lobbying to assure their independence in the production and marketing of their food, and to prevent the imposition of unnecessary regulatory burdens that are not in the public interest. FARFA also advocates for consumers' access to information and resources to obtain healthy foods of their choice.

I. DEFINITION OF ON-FARM PROCESSING ACTIVITIES

The initial issue that must be addressed is what constitutes “processing” such that a farm is considered a “facility.” Activities such as placing berries in containers, mixing different greens to create a salad mix, pouring honey into jars, and placing herbs or pre-weighed produce into bags are not considered by most people to be processing. But under the current guidance documents, although the language is unclear, farms that do these normal chores may become facilities. This is not an appropriate way to regulate farms.

While mixing and packaging can be steps in processing, they should not be classified in that manner when they occur on a farm and utilize only produce grown on that farm. These actions should only be classified as processing when they occur in a different location and/or when they involve produce from multiple farms.

II. RETAIL FOOD ESTABLISHMENTS

The next step is to clearly set out which entities that conduct processing or manufacturing are retail food establishments and therefore not required to register as facilities or comply with the new HACCP requirements. As set out in section 102(c) of the FSMA, the agency shall amend the existing definition of retail food establishment to clarify that entities selling directly to customers at locations such as farmers markets and through CSAs qualify as retail food establishments.

The FSMA authorizes FDA to also recognize other “direct sales platforms.” See FSMA section 102(c)(1)(C). We encourage the agency to include buyers' clubs and online ordering systems in this definition.

III. QUALIFIED FACILITIES

The FSMA recognized that small facilities selling directly to consumers or local businesses should be left to the primary jurisdiction of state and local authorities.

For farms that have a small processing operation, the determination of whether they qualify for the “qualified facility” provision should be based on the gross sales of the facility, not the farm portion. This is consistent with the statutory language, which provides that the gross sales test is based on the “average annual monetary value of the food manufactured, processed, packed, or held at such facility.” See FSMA section 103(l)(1)(C)(ii)(I).

The required documentation under section 103(l)(2)(B) should be kept to a minimum, consistent with the statute's inten-

tion of not imposing unnecessary burdens on these food producers. For example, documentation that a facility's gross sales meet the statutory test should be allowed through copies of tax returns and/or sales receipts.

The clear intention of the FSMA is that FDA should defer to the state and local authorities in the regulation of qualified entities. It would not be appropriate for FDA to adopt regulations that place it in the role of evaluating the scope, appropriateness, or enforcement of state and local laws. Therefore, all FDA should require is for an entity to submit basic documents from state or local authorities showing that it is in compliance with applicable state, local, or county food safety laws. See FSMA section 103(l)(2)(B)(i)(II). Copies of even one state or local license, permit, or registration should be sufficient.

IV. EXEMPTION FOR "VERY SMALL BUSINESSES"

Section 103(l)(5) of the FSMA directs FDA to conduct a study to analyze the food processing sector, including the risks associated with different types of operations and the scale and duration of activities. The results of that study will impact the definition of "very small business."

Pending the results of that study, we initially propose that FDA define "very small businesses" as food producers with fewer than 20 employees. The Small Business Administration classifies food manufacturing businesses as "small business" if they have fewer than 500-1,000 employees (depending on the precise type of food manufacturing). See http://www.sba.gov/sites/default/files/Size_Standards_Table.pdf, Subsector 311. SBA has referred to businesses in general that have fewer than 20 employees as "very small." See <http://www.sba.gov/advocacy/7495>.

V. DETERMINATION OF "LOW RISK"

The level of risk associated with a type of food is not always consistent. Foods prepared on a small-scale using certain processes may be low risk, while the same food prepared on a large-scale using other processes may be high risk. For example, spinach grown on a sustainable, small-scale farm, harvested by hand by trained workers, and sold locally without commingling with other farms' products, has not been associated with any significant outbreaks. Yet the same food – spinach – becomes a high risk food when it is grown on a large scale, harvested by machine, and commingled in a centralized processing plant.

In assessing risk under the FSMA, the agency should consider scale, the level of automation, and commingling, in addition to other factors.

VI. MISCELLANEOUS

The FSMA mandates that FDA not "require a facility to hire a consultant or other third party to identify, implement, certify, or audit preventative controls." FSMA section 103(n)(3)(D). The FDA should respect the intent of this provision and develop regulations that do not require outside consultants either explicitly or in practical terms because of their complexity.

All fees imposed under the FSMA, including re-inspection fees, should be on a sliding scale based on the size of the facility.

FDA's regulations should recognize and respect traditional food preparation techniques for cheeses, fermented foods, oil extraction, broth, and cultured dairy products. Traditional techniques provide numerous benefits, particularly nutritional. The term "science-based" should not be treated as a synonym for "industrial technology." Regulations should be based on fact, not fear or assumptions that high-tech methods are superior.

VII. CONCLUSION

The FSMA establishes a clear structure that recognizes the fact that not all food processing should be regulated by the FDA in the same manner. Specifically:

- Farms are not facilities;
- Food processors or manufacturers who sell more than half their products directly to individual consumers are also not facilities, but are retail food establishments and exempt from both registration and HARPC;
- Food processors or manufacturers who sell less than half their products directly to individual consumers, but who sell more than half directly to some combination of individual consumers and local retailers or restaurants are "qualified facilities" if they gross under half a million dollars, and are therefore exempt for HARPC;
- "Very small" businesses are exempt from HARPC regardless to whom they sell.

In developing regulations and guidance documents, FDA should respect the underlying intention of the structure created by FSMA. On-farm activities, direct sales, and small businesses are different from the long, complex, large-scale supply and processing chains that characterize the majority of the food supply. FDA should carefully consider the budget constraints that must be imposed due to the federal deficit and focus its regulatory and enforcement activities on the highest risk activities by large facilities, which impact the largest number of people.

Sincerely,

The Weston A. Price Foundation and Food and Ranch Freedom Alliance

A Campaign for *Real Milk*

THOSE PATHOGENS, WHAT YOU SHOULD KNOW

By Ted Beals, MD

Remarks delivered at the Third International Raw Milk Symposium, May 7, 2011, Bloomington, Minnesota.

I wish to begin by saying that the real discussion of food, including raw milk, should focus on the undeniable values and benefits for our development and sustained health. Sally Fallon Morell has talked about those in her presentation, and my role here is to focus on the risk aspects, which are controversial.

Most of us here are convinced that *what* we eat, and *why* we choose to eat what we eat is our responsibility, not the responsibility of government. Yet the government is at war against raw milk, one of the key healthy foods that we choose to consume and give to our children.

The government's battlefield is the concept of risk—raw milk is inherently risky, argue government officials, and should not be consumed by anyone, at any time, for any reason. Some of our opponents in this battle understand the importance of nutrition and realize the incredible power held by those that control food. Others go to work everyday sincerely believing that they are personally responsible for protecting the public from the risks associate with eating. Many regulators, inspectors, lawyers and far too many legislators tend to forget about the benefits and focus on the things that might make people sick, and they call those things “bad bugs.”

But *everything* has risk. The decision to consume any food involves estimating the risks of eating that food, as well as the benefits. Eating is not just an interesting thing we do, like riding in airplanes; rather, it is an absolute necessity. And many of us believe that our wellbeing is a direct consequence of the food choices we make.

Today I will present the actual scientific facts stripped of the *hysteria* and devoid of unsubstantiated dogma. I will do so in a way that all of you will understand; what I am present-

ing is not my opinion; it is the actual scientific information

BACTERIA ARE UBIQUITOUS

The world is filled with bacteria. They are on our skin and in our digestive system. They are everywhere. Bacteria are absolutely essential to our development, our ongoing nutrition and our health. Bacteria are not determined to make us sick, they are just looking for a place to grow and divide. Here are some key facts about bacteria:

- Bacteria outnumber people.
- They were here long before us.
- They will be here long after us.
- They dominate the diverse bio-culture of the world.
- Our existence is integrated with that of bacteria.

All the bacteria in our world today have succeeded over a long period of history to find nice places to grow and divide. When we came along, a small number of them found that humans have some nice places wherein to grow and divide.

The bacteria that live inside and on human beings either just co-exist with us, or we have actually learned to use their presence to our advantage.

A surprisingly small number of those bacteria may cause side effects (collateral damage) when they grow and multiply.

In the whole world, there are hundreds of thousands of different kinds of bacteria, and a million trillion trillion individual bacteria. Of those bacteria that live on and inside human beings, there are hundreds of different kinds. In fact, there are more bacteria on and in our bodies than we have cells of our own.

The vast majority of these bacteria—hundreds of kinds—are beneficial. And how many kinds of bacteria might make people sick? The



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A critical myth perpetuated by the risk mongers is that all of the supposed subtypes in a named (genus and species) of bacteria are the same.

answer is surprising: only a couple of dozen. And only some of these actually cause illness.

The official naming system for bacteria gives the genus and species. For example with *Listeria monocytogenes*, *Listeria* is the genus and *monocytogenes* is the species. However there is abundant diversity within these officially named categories in the form of subtypes. There are different categories of subtypes: serotypes, genotypes, strains, forms, serovars, virotypes, varieties and isolates. For example, the highly publicized form of *Escherichia coli* (remember nearly all forms are benign) is *Escherichia coli* O157:H7. This expanded name says: the genus is *Escherichia*, the species is *coli*, and within the category of *O* subtypes of the species *coli* it is number 157, and within the category of *H* subtypes it is number 7.

All bacteria named with genus and species have subtypes!

THE MYTH OF THE RISK MONGERS

A critical myth perpetuated by the risk mongers is that all of the subtypes in a named (genus and species) of bacteria are the same. This is how the myth works. If there is disease in some animal or man and the laboratory identifies the cause as a certain genus and species, then that makes it a “pathogen” and any and all bacteria of that genus and species cause disease. They want judges, legislators, journalists and the public to believe that the genus and species is a bad bug and must be killed. Thus, goes their logic, since one subtype of *E. coli* can make people very

sick, then all subtypes of *E. coli* are pathogens and can not be tolerated.

Yet, thousands of researchers, hundreds of books and thousands of published articles in scientific journals, all recognize the scientific fact that just because a particular subtype of a bacteria species is pathogenic does not mean that the whole species is pathogenic.

The risk mongers understand that their horror stories crumble in the face of truth, scientific facts and reality. So they keep repeating this myth to journalists, legislators and judges. Every time they say anything about possible illness, they repeat this myth. Some even imply that all bacteria are bad.

THE BIG FOUR

Let’s now take a brief look at each of the four dreaded “pathogens” that cause most foodborne illness—*Campylobacter jejuni*, Shiga Toxin producing *E. coli* (*E. coli* O157:H7), *Listeria monocytogenes* and *Salmonella* spp. (spp. indicates that we are talking about the whole genus of *Salmonella*, not just one species.)

For each one, we need to know the following:

1. Where do they like to grow?
2. What is the most common source?
3. What is the most common reservoir?
4. Factors that increase potential risk to raw milk drinkers;
5. Factors that decrease potential risk to raw milk drinkers;
6. Overall human public health impact from

SOURCE VERSUS RESERVOIR

Another of the critical myths perpetuated by those who promote fear is that bacteria grow remarkably fast. The most common example used is the statement that *E. coli* multiplies every 20 minutes; suggesting that this is how all bacteria behave. The implication is that even if there is only a single bacterium, it will rapidly multiply producing alarmingly high numbers to spread infection. Yes, in a laboratory you can get *E. coli* to multiply that quickly if you put it in its most favorable environment, with abundance of all the desired nutrients, at the optimal temperature for growth (99 degrees F) and the right mixtures of gases. But just for comparison, *Listeria monocytogenes* divides once every fifteen to thirty-four hours at refrigerator temperatures in packaged meat slices. For the purposes of this discussion, bacteria can multiply, or if conditions are not favorable, they will diminish in numbers. So experiments either show increasing or decreasing numbers over time. In publications they may say “growing” to mean multiplying, and “surviving” to mean diminishing in numbers.

And for the purposes of this discussion, a “source” is a location that has conditions under which the specific virulent bacteria significantly increase in numbers. A “reservoir” is a location in which a specific virulent bacteria is able to survive for some time or has conditions to enable very limited multiplication.

- each pathogen;
7. The specific public health impact from each pathogen associated with drinking milk raw.

CAMPYLOBACTER JEJUNI

The most common pathogen currently associated with raw milk outbreaks is *Campylobacter jejuni*. The virulent forms of *Campylobacter jejuni* can cause serious diarrhea in humans.

Campylobacter jejuni grows only inside living animal cells. The most common source is the intestinal tract of poultry. Infected chickens are not sick, but they are carriers of the organism in their feces and on meat contaminated with feces. The most common reservoir is water contaminated from poultry manure. People with diarrhea caused by *Campylobacter jejuni* shed extremely high concentrations of the virulent bacteria in their stools.

Ironically, the potential risk is increased with raw milk that is too fresh. Over time, the antimicrobial components of raw milk will kill *Campylobacter jejuni*, so—any potential risk diminishes as the milk ages under refrigeration. Longer storage time and exposure of the milk to air decrease the risk to raw milk drinkers. Likewise keeping infected poultry and people that carry campylobacter away from milk handling areas will reduce the risk.

Campylobacter is the second most common cause of all human foodborne illness. The illness usually goes away without treatment after a bout of unpleasant diarrhea, but there can be severe complications in rare cases.

As for the specific public health impact of drinking raw milk, the Centers of Disease Control (CDC) estimates an annual average of more than eight hundred thousand (845,024) people in the U.S. have domestically acquired diarrhea caused by food contaminated with *Campylobacter spp.*¹ an annual average of 34

Campylobacter jejuni illnesses have been attributed to drinking raw milk.²

SHIGA TOXIN-PRODUCING *E. COLI* (*E. COLI* O157:H7)

This pathogen grows in the intestinal tract of warm blooded animals. The most common source is fecal matter of infected humans. The most common reservoir is cows that are shedding colonized virulent subtypes

Factors that increase the risk to raw milk drinkers include dairy animals contaminated with feces from high-shedding animals and milk handlers shedding during and after infection .

Factors that decrease the risk to humans include closed herds, managing dairy herds to minimize the spread of bacteria spread from colonized animals, and keeping people that are shedding away from milk processing and herds.

The overall human public health impact of *E coli* O157:H7 is small but highly publicized because of a rare side effect called hemolytic uremic syndrome (HUS).

As for the specific public health impact of drinking raw milk, CDC estimates an annual average of more than sixty-three thousand (63,153) people in the U.S. had domestically acquired diarrhea caused by food contaminated with *E. coli* O157:H7.¹ an annual average of 5 were attributed to drinking raw milk.²

LISTERIA MONOCYTOGENES

Listeria monocytogenes (often abbreviated to *L. mono.*) is the most serious and deadly of the contemporary foodborne pathogens. Yet it is also ubiquitous in our environment. Scientists actually know a lot about the virulence factors that are necessary before specific virulent subtypes of *Listeria monocytogenes* are able to cause disease.

Listeria monocytogenes can alternate between two growing modes: it grows within

Over time, the antimicrobial components of raw milk will kill *Campylobacter jejuni*, so any potential risk diminishes as the milk ages under refrigeration.

GASTROINTESTINAL ILLNESS

As a physician, I am dedicated to understanding, preventing and minimizing the impact of disease. Gastroenteritis has a real personal impact. Frequent trips to the bathroom, often with terrible abdominal pain, inability to go about your daily activities, lasting for days, is serious. The fortunately rare complications that can occur periodically with the forms of gastroenteritis mentioned here can be horrific and have a devastating impact on individuals and their families. In no way do I wish to trivialize the personal impact of these illnesses. However, all activities have risk. Consumption of any food has some risk of illness or adverse reaction. And the consequence of basing public policy on horrific personal experiences is that all foods will ultimately be banned, and we will not be able to participate in any activity.

Listeria monocytogenes has never been a significant public health risk from drinking fresh raw milk.

animal cells or it can switch to growing in decomposing plant materials. Listeriosis is a significant health problem in domestic animals. The most common sources are poorly managed silage; amniotic fluid, placenta and fetal tissues from abortions resulting from infection in cows; and meat processing plants and their equipment.

The most common reservoir is the environment, particularly if cool, wet and undisturbed. *Listeria monocytogenes* is present as well in our homes and on our bodies.

The public ingests listeria on a regular basis without becoming ill. You must ingest huge numbers of a virulent strain of *Listeria monocytogenes* to cause gastroenteritis.

Those who wish to ban all milk that is not pasteurized use the horrors (human listeriosis) of systemic disease caused by *Listeria monocytogenes* to support their cause. They consistently broadcast the high mortality rates from *L. mono* and focus on the susceptibility of pregnant women, fetuses, newborns and the elderly. However, *Listeria monocytogenes* has never been a significant public health risk from drinking fresh raw milk. Because of the long processing times and storage conditions, there have been rare outbreaks in which cheeses have been associated with listeriosis cases. This is a risk with cheeses prepared from both raw and

pasteurized milk.

The most serious public health risk due to *Listeria monocytogenes*, comes from contaminated ready-to eat processed foods, particularly meats.

CDC estimates an annual average of fifteen hundred (1,591) people in the U.S. develop systemic infection caused by food contaminated with *Listeria monocytogenes*;¹ there have been no cases attributed to drinking raw milk in the last twelve years.²

SALMONELLA SPP

Our final pathogen is *Salmonella spp*. It likes to grow inside animal cells as well as in food and feed with high protein content, especially when stored warm.

The most common source is infected humans and animals, as well as contaminated animal feeds and re-warmed foods. The most common reservoir is contaminated water.

Inadequate refrigeration of raw milk increases the risk to consumers; eliminating sources of salmonella decreases the risk.

As for the overall human public health impact, salmonella is the most common foodborne illness. CDC estimates an average of more than one million (1,027,561) people in the U.S. had domestically acquired diarrhea caused by food

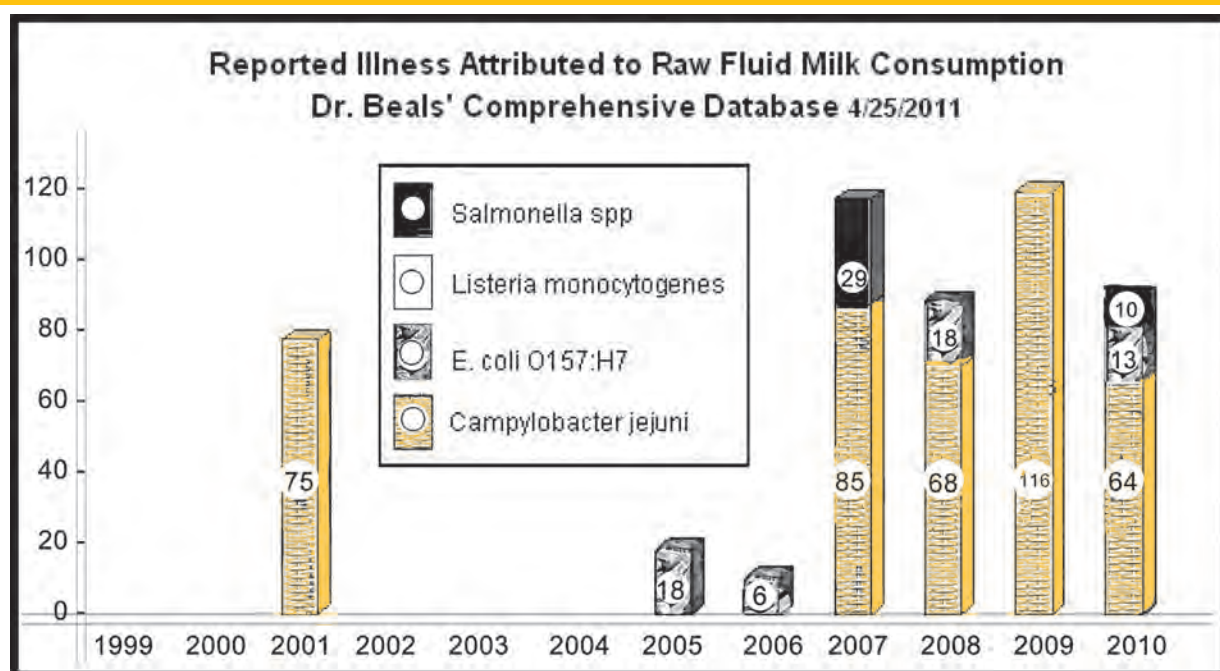


FIGURE 1

contaminated with salmonella¹—an annual average of three of these cases were attributed to drinking raw milk.²

RELATIVE RISK OF DRINKING RAW MILK.

First a personal note. I have performed the calculations based on national highway safety data and the data on foodborne illness attributed to drinking raw milk. It can be shown that I have a greater risk of being injured in the car driving to the farm to obtain milk for myself and my wife than becoming ill from the fresh unprocessed whole milk. And we drink a lot of that delicious and healthy milk every day.

Now, let's look at the risk of consuming raw milk compared to other foods. I have combed all available information including scholarly articles, reviews of foodborne illnesses, media reports, public health announcements, listings of outbreaks compiled by numerous government agencies, special interest groups and litigation lawyers and found the following data on total annual illnesses attributed to raw milk from 1999 through March 2011, a period of twelve years, as shown in Figure 1.²

For the period, there were 502 cases of illness, for an average of forty-two per year. It is important to note that these illnesses were attributed to raw milk in the opinion of the reporting

agencies. I have not excluded any illnesses from these numbers based on my professional judgment of the strength of the linkage reported. They include totals, both "confirmed" and "presumed" cases.

For comparison for those who insist on published data in peer reviewed journals, another set of data was compiled by Stephen P. Oliver and others entitled "Food Safety Hazards Associated with Consumption of Raw milk, published in *Foodborne Pathogens and Disease*.³ Oliver looked at illnesses attributed to raw milk over a nine-year period, 2000 to 2008, as shown in Figure 2. The numbers listed are those attributed to drinking fluid milk, and do not include illnesses attributed to other processed dairy products.

Ironically, Oliver and his team come up with a lower total than I did—246 cases over nine years, for an average of twenty-seven cases per year. As you can see, there is no pattern for the frequency of illness attributed to drinking raw milk in either Figure 1 or Figure 2. With the exception of the more likely occurrence of *Campylobacter jejuni* illness and the absence of illness from listeria, the presumed causative organism and the frequency of illness is sporadic.

Figure 3 shows the annual incidence of foodborne illness confirmed for each of the four pathogens. Figure 4 shows illnesses confirmed

For the period, there were 502 cases of illness, for an average of forty-two per year.

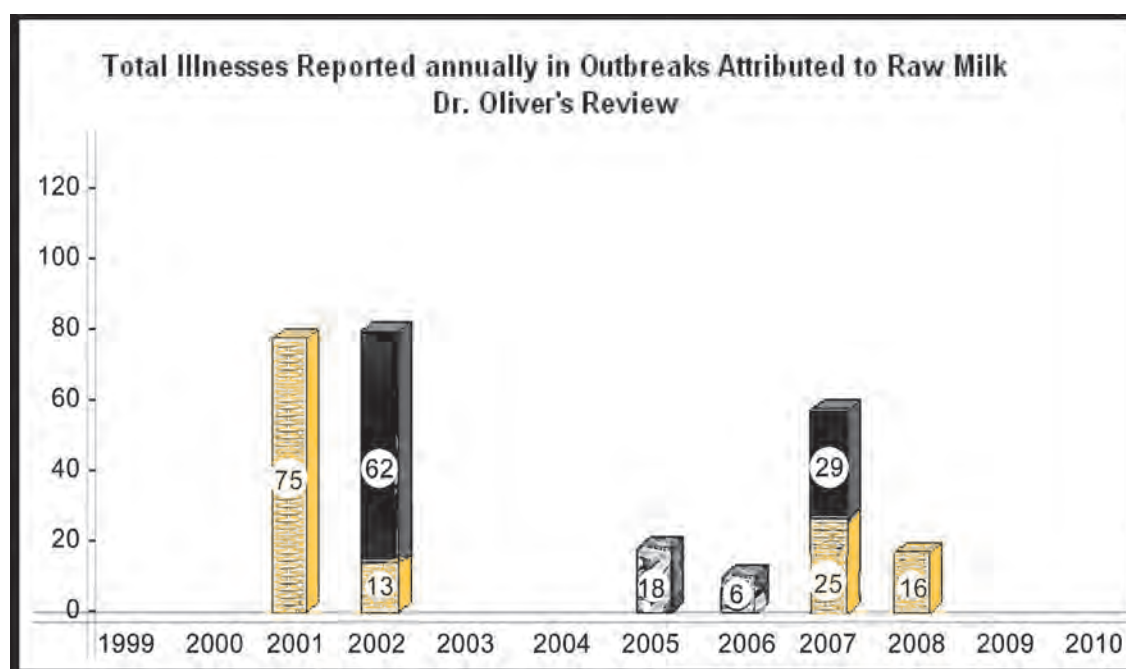


FIGURE 2

The number of illnesses from raw milk is miniscule compared to illnesses from other causes, both for all consumers and for raw milk consumers.

for each of the four pathogens attributed to foodborne illness that might be expected among raw milk drinkers.

The numbers for illness from all food sources is data from a U.S. government report called *Healthy People 2020*.⁴ The report was finalized in December 2010 out of a collaboration of all health and food agencies of the federal government, with private sector input. In the section on food safety of this report, data is given for “baseline” 2010. The baseline in the report is given as a rate per one hundred thousand people in the U.S. In the graphs, the tall bars are totals attributed to “all foods” based on these rates using 2010 census population data. Critics of all data showing low numbers of people ill from drinking raw milk comment that since there are so few people drinking raw milk, the numbers only appear small. To counter this assumption, The numbers used in Figure 4 are also calculated using the 2010 Census and the *Healthy People*

2020 baseline risk of illness from all foods.

To construct Figure 4, we need to know the number of raw milk drinkers in the U.S. Fortunately, this data is available to us, and the number is surprisingly large. According to a very large telephone survey by FoodNet, carried out in 2007, 3.04 percent of the population consumes raw milk or about 9.4 million people based on 2010 census.⁵ This number is certainly larger today as raw milk is gaining in popularity; however, we can be conservative and use the percentage in 2007 from the phone survey of 9.4 million Americans consuming unpasteurized (raw) milk for the year 2010.

While it is true that only a minority drink raw milk, Figure 4 still shows the striking comparison between illness from all foods, and the incredibly small numbers attributed to drinking raw milk. In this graph I made the assumption that the risk of illness from all food sources was the same for people drinking raw milk. I

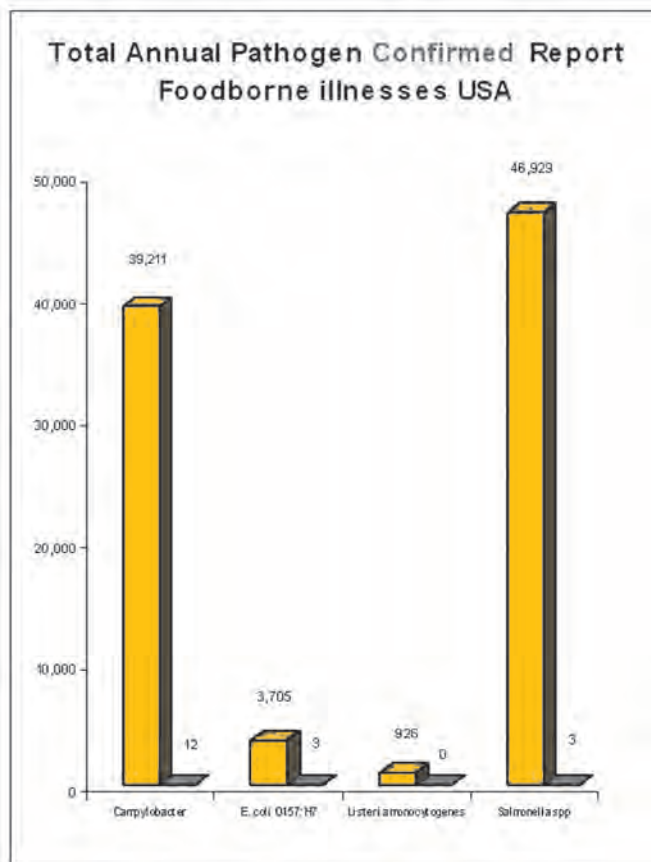


FIGURE 3

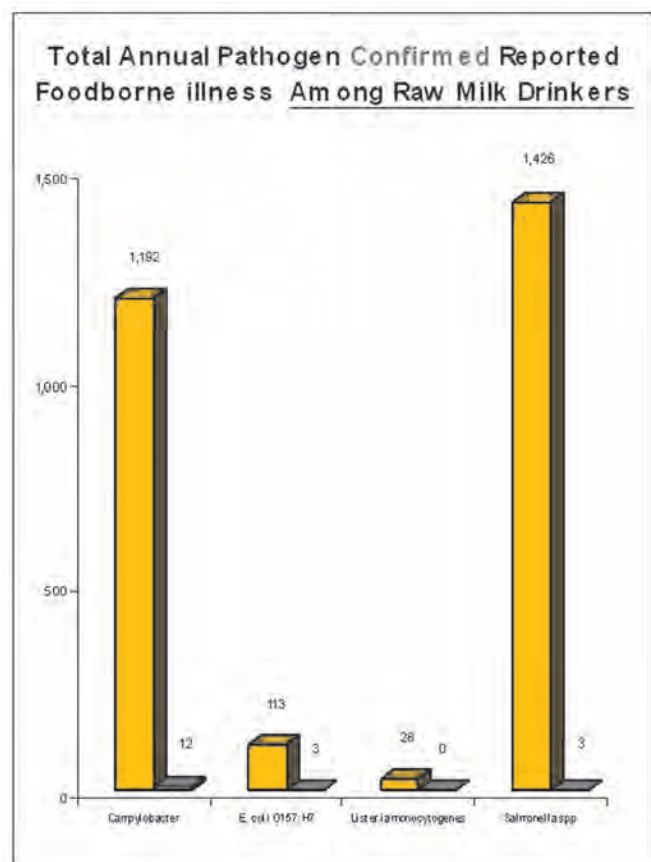


FIGURE 4

personally suspect that raw milk drinkers as a whole are healthier and more immune than the general public, but the *Healthy People 2020* did not actually make a calculation for the subset of the population that drinks raw milk.

As you can see, the number of illnesses from raw milk is very low compared to illnesses from other causes, both for all consumers and for raw milk consumers.

ILLNESSES PER PERSON

Now, let's look at the illnesses per person among the whole population and the population of raw milk drinkers. That data showing illnesses come from a 2011 publication compiled by a team of researchers at the CDC FoodNet Surveillance Center. The paper, by Elaine Scallan and others, is entitled "Foodborne Illness Acquired in the United States—Major Pathogens" and was published in *Emerging Infectious Diseases*.⁶ The model does include a factor for unreported illnesses, but it revised downward the figure of 78 million foodborne illnesses per year that government agencies have been using in the past. Instead the report estimates that 48 million Americans are sickened each year from all agents, including viruses, bacteria and toxins, in all foods. That is one out of every six people. The numbers given in the report are based on their most up-to-date information which was for the year 2008. Their data:

Total diarrheal episodes annually USA	217,973,045
Total Foodborne illnesses annually USA	48,000,000
Annual confirmed foodborne infections from the four "pathogens" (all foods)	1,937,561
Average number of illnesses attributed to consuming raw milk (Dr. Beals, 1999–2011) ²	42
Illnesses number of illnesses attributed to consuming raw milk (Drs. Oliver and others, 2000–2008) ³	27

WHO'S IRRESPONSIBLE?

From the perspective of a national public health professional looking at an estimated total of 48 million foodborne illnesses each year;⁶ or from the perspective of a healthcare professional looking at a total of 90,771 (data from *Healthy People 2020*)³ confirmed bacterial foodborne infections each year (about 0.2 percent), there is no rational justification to focus national attention on raw milk, which may be associated with an average of forty-two illnesses maximum among the more than nine million people (about 0.0005 percent) who have chosen to drink milk in its fresh unprocessed form.

It is irresponsible for a senior national government administrator to testify that because of those forty-two people, raw milk is inherently hazardous, parents should not be allowed to decide which foods they serve their children and milk should be banned across the nation unless it has been pasteurized. ☯☯

Ted Beals, MS, MD, is retired from the University of Michigan Medical School and Veterans Administration Health Administration. A pathologist with personal interest in dairy testing and safety of milk, he has been presenting testimony on dairy safety in North America for the last several years. He and his wife Peggy Beals are members of the Michigan Fresh Unprocessed Whole Milk Workgroup.

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2. Average annual illnesses attributed to drinking raw milk are from a comprehensive database of outbreaks attributed to raw milk started in Jan. 1, 1999. This database includes all incidents that have been included in any publication or review concerning raw milk outbreaks, newspaper reports, press releases, attorney webpages, lists compiled by interested groups and state and federal agencies as well as presentations at conferences or on TV. The numbers listed here are obtained from this dynamic database as of March 25, 2011. Additional incidents and updated information are being added to this database on an ongoing fashion. In this discussion the annual averages for each "pathogen" include all illnesses (confirmed and presumptive) reported in summary or final reports that have been made public. The annual average numbers of illness include only cases that occurred in the USA and were attributed to drinking raw milk that was produced specifically for consumption by people in the fresh unprocessed form. The numbers do not include cases attributed to dairy products other than fluid whole milk. I did not make a personal judgment to determine if the cases were proven to be caused by virulent pathogens in the milk. Attribution used in calculating the annual averages is solely at the determination of the reporting agency that made the final report. It should be noted that since the database is ongoing; the numbers will change at future points in time because new incidents are added as they surface, and information is continuing to be added to incidents already included in the database.
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ANNUAL MEMBERSHIP DRIVE - AUGUST THROUGH OCTOBER, 2011

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HARD LESSONS LEARNED IN TEXAS RAW MILK FIGHT by Judith McGeary, Esq.

The path to changing laws is frequently long and difficult. This year's battle over a raw milk bill in Texas was particularly difficult and took some unexpected twists that have effectively killed the bill this session. Since at least some of these new twists are likely to become common in raw milk fights across the country, it is worth learning from the hard knocks Texans have suffered.

INDUSTRY FLIP FLOP

Big Dairy opposition to raw milk is not new. The industry giants have killed bills in California, Wisconsin and elsewhere. In Texas, though, there was a new twist because the industry initially supported the raw milk reforms. In November 2009, a group of raw milk farmers and consumers presented a proposal to the Advisory Council for the Texas Department of State Health Services (DSHS) to allow licensed farmers to sell raw milk at farmers markets and through delivery. (Current law allows licensed farmers to sell only on-farm.) The Executive Director for the Texas Association of Dairymen (TAD) testified in favor of the proposal.

Over the course of the next year, TAD repeated its support for expanding legal sales of raw milk. But in December of 2010, TAD reversed its position. We have no proof as to what triggered the flip flop, but the association's comments give strong clues. Back in 2009, TAD's comments focused on the needs of family farmers and the potential for raw milk to help them. The Executive Director spoke about the economic plight of the farmers selling milk into the conventional markets and acknowledged that direct-to-consumer sales of raw milk could save family farmers. After the flip flop, the TAD's comments switched to the typical fear mongering promoted by Dairy Farmers of America, which not coincidentally controls a majority of TAD's Board. In essence, the organization appears to have gone from listening to its farmers to listening to the corporate headquarters.

BUDGET CRUNCH

The next twist was the claim by DSHS that the bill would cost the state money. With Texas facing a record budget shortfall, this was enough to stall the bill. The agency began with a simple fact: the costs of all of the state's inspections and tests are greater than the amount of fees generated. But from there, the agency spun a fantasy where dozens of raw milk dairies would be licensed, more outbreaks would occur, the agency would need more employees, and so forth.

Not only did these assumptions lack any basis in fact, but the underlying viewpoint was startling: the agency was effectively claiming that it was in the state's fiscal interest to have a few massive dairies rather than healthy small family farms. Ultimately, when faced with the lack of facts to support the claims, the agency concluded that there would be no "significant" fiscal impact to the state and removed that obstacle to the bill.

ALLEGED OUTBREAK

But just as the bill headed to the long-awaited hearing, yet another twist arose. After ten years with absolutely no illnesses attributed to raw milk in Texas, on the day of the hearing, there was a press release claiming that four illnesses, between December and March, were attributed to a raw milk dairy in the Texas area.

David Gumpert has an excellent blog posting with some of the unanswered questions about these allegations: <http://www.thecompletepatient.com/journal/2011/4/21/health-officials-say-they-have-the-goods-on-texas-raw-dairy.html>

MEDICAL LOBBYING

Despite the last-minute ambush, the proponents of the raw milk bill turned out in strength at the April 20th hearing on the bill. Over one hundred thirty people registered in support of the bill, and a dozen health practitioners, farmers, mothers and students spoke eloquently about the wide range of benefits of raw milk, from health to economic. Unfortunately, while we clearly "won" the hearing on both turnout and substance, the Committee delayed voting on the bill and there is not enough time left to pass it this year in Texas.

One of the key reasons that the bill was delayed yet again, despite the strong facts on our side, was the opposition of the Texas Medical Association. Medical associations have been predictably opposed to raw milk. Generally, that opposition has taken the form of general policies and statements opposing raw milk consumption, which have been quoted by the industry opponents. In Texas, however, the medical associations took a much more active role. The Texas Medical Association and the Texas Pediatrics Society developed so-called fact sheets that they distributed to the legislators. They also distributed "Food Safety Hazards Associated with Consumption of Raw Milk," a deeply flawed study that misrepresents the actual risks involved with raw milk from small-scale dairies producing products that they intend to be consumed raw.

Most importantly, the associations spent time lobbying against the bill and testified at the Committee hearing. These associations carry a great deal of influence at the Legislature, and they have successfully blocked many bills far less controversial than the raw milk bill.

LESSONS LEARNED

While dealing with the painful loss of a promising bill for this year, the effort was far from wasted. We laid important groundwork in Texas for coming back in the next legislative session and getting the bill passed then. And the lessons learned in Texas can serve to help raw milk proponents all over the country in their fights.

We must now anticipate that the medical associations will not sit on the sidelines, but will actively lobby against any expansion of access to raw milk. That means warning bill sponsors to be prepared, and preemptively addressing the mainstream medical establishment's claims. Not only do we need the data about the rarity of illnesses caused by raw milk (which we had in Texas), we also need to develop materials explaining the flaws with the medical establishment's paradigm of sterilizing its way to safety.

In addition, the industry opposition to raw milk has been shown to be fractured. By reaching out at the farmer-to-farmer level, we can try to build alliances with the conventional farmers facing a crisis in their businesses. As is common in conventional agriculture, the industry associations are representing the interests of the large, consolidated companies, not the family farmer. We can create bridges that bypass the industry associations and highlight the shared interests of raw milk farmers and other family dairy producers.

RAW MILK UPDATES

by Pete Kennedy, Esq., President, The Farm-to-Consumer Legal Defense Fund

PENNSYLVANIA

On April 26, the Food and Drug Administration (FDA) issued a press release announcing that the U.S. Department of Justice (DOJ), at the agency's request, had filed a complaint for a permanent injunction against Dan Allgyer, owner of Rainbow Acres Farm, in Kinzers, Pennsylvania for distributing unpasteurized milk for human consumption in interstate commerce. In seeking the injunction, DOJ alleged that Allgyer's sale and distribution of raw milk in Maryland violated the federal ban on raw milk for human consumption in interstate commerce, as well as violating federal law on misbranding since the containers of raw milk the undercover agents purchased did not have any labels. [See *Wise Traditions* Summer 2010 issue for background.]

The complaint disclosed that in late 2009 an investigator in FDA's Baltimore District Office used aliases to join Grassfed On The Hill, a buyers club consisting of members from Maryland and the District of Columbia who were obtaining food from Rainbow Acres. "Between December 2009 and March 2011, an FDA investigator visited the Grassfedonthehill user group website and the Rainbow Acres online ordering website and placed orders for unpasteurized cow milk on 23 occasions." FDA investigators picked up the raw milk orders at private residences of Grassfed On The Hill members in Maryland. An FDA laboratory analyzed twelve of the milk samples obtained by the investigators and confirmed all were unpasteurized.

The public reaction to the FDA press release and complaint for injunction was immediate outrage. There had never been a case of foodborne illness attributed to Rainbow Acres; there had never been an accusation the farm was distributing adulterated food. With the federal budget crunch and unaddressed problems in so many other areas of the food system, why was FDA spending taxpayer dollars on raw milk enforcement when there was no claim that the food Allgyer produced had made anyone sick? The FDA's action only served to focus more of the public's attention on raw milk, a food that has already received widespread media attention and is at the center of the ongoing battle over food rights in this country.

In response to the FDA enforcement, Liz Reitzig and Karine Bouis-Towe, the leaders of Grassfed On The Hill, organized a "Rally for Food and Farm Freedom," which was held in Washington, DC on May 16. The rally, which drew around four hundred people on a Monday morning, was successful in bringing to the public's attention the ongoing denial by FDA of raw milk consumers' freedom of choice and the agency's harassment of raw milk dairies. There was significant media coverage of the event, getting the word out about FDA's contempt for those wanting to obtain the food of their choice from the source of their choice. In the days following the rally, numerous articles in the mainstream media were critical of FDA's actions against Rainbow Acres Farm.

The outrage against FDA's actions extended to Congress as well. On May 11 Representative Ron Paul of Texas introduced H.R. 1830, a bill that would effectively overturn the federal prohibition on raw milk for human consumption in interstate commerce. Paul, who had introduced the same bill in the last session of Congress, remarked, "Hard as it is to believe, the federal government is actually spending time and money prosecuting small businesses for the "crime" of meeting their customer's demand for unpasteurized milk! . . . Americans have the right to consume these products without having the federal government second-guess their judgment about what products best promote health."

While FDA is going after a farmer whose products have done nothing but benefit the health of thousands, more evidence is emerging that the agency's disproportionate use of resources on raw enforcement is for reasons other than protecting the public health. In a talk given at the recent Third Annual International Raw Milk Symposium in Minneapolis, Dr. Ted Beals, a retired pathologist and expert witness in several raw milk court cases, noted that over the past twelve years (1999-2011) there have been seventeen foodborne illness outbreaks that have been attributed to fluid raw milk consumption in this country—the number of people sickened from raw milk consumption averaged out to forty-two per year. CDC data has indicated that as of 2008 there were over nine million raw milk drinkers in this country—a figure that is higher today. In Dr. Beal's words, "From the perspective of a National Public Health professional looking at an estimated total of 48,000,000 foodborne illnesses each year [CDC's current estimate]; or from the perspective of a healthcare professional looking at a total of 90,771 confirmed bacterial foodborne infections each year; there is no rational justification to focus national attention on raw milk which may be associated with an average of forty-two illnesses among the more than nine million people who have chosen to drink milk in its fresh unprocessed form.

The public reaction to the FDA's attempted shutdown of Rainbow Acres should remind FDA that its efforts to ban raw milk sales and distribution are failing more than ever. The agency has continually refused to listen to anyone with a view on raw milk that differs from its own—it needs to respect freedom of choice. FDA's position on raw milk is increasingly losing credibility; it is becoming more clear that the interstate ban is an economic regulation disguised as a public health measure. It is time for FDA to transfer resources from raw milk enforcement to other areas where the agency could actually protect the public health, e.g., the regulation of imported food.

Those supporting H.R. 1830 are encouraged to send a message to their legislators through the online petition at www.farmtoconsumer.org/HR1830.

FEDERAL – FDA LAWSUIT

In an unsurprising response to questions submitted to it by a federal judge, the FDA has asserted that any commercial transaction involving transporting raw milk for human consumption across state lines is subject to the agency's jurisdiction and is illegal. It is now a matter of public record that in FDA's view even individual consumers crossing state lines to purchase raw milk and bringing the milk back to their home state to consume it are violating the law.

On September 17, 2010 Judge Mark W. Bennett stayed judicial proceedings in a lawsuit filed by the Farm-to-Consumer Legal Defense Fund and eight of its individual members challenging the federal regulation prohibiting raw milk for human consumption in interstate commerce. The purpose of the stay was to give FDA six months to answer the following hypothetical questions submitted by the judge: whether 21 C.F.R. §1240.61 [the federal regulation challenged in the suit] applies to and proscribes the conduct of the following persons:

1. Persons who travel from one state, where it is not legal to purchase raw milk, to another state, where it is legal to purchase raw milk, legally purchase raw milk, then return to the original state where they consume the raw milk themselves or give it to their friends or family members; or
2. a principal and agent who agree that the agent will obtain raw milk out-of-state, where it is legal to do so, and deliver it to the principal in the principal's home state, where sales of raw milk are not permitted, where the principal then consumes the raw milk or gives it to the principal's friends or family members; or
3. a producer of raw milk who sells raw milk in a state where it is legal to do so in an intrastate transaction to person that he knows are from out of state?

The individual plaintiffs in the lawsuit include consumers who went across state lines to obtain raw milk, an agent who went on behalf of consumers across state lines to obtain raw milk, and a farmer who knowingly sells raw milk to out-of-state consumers.

The regulation under challenge provides, in part, “no person shall cause to be delivered into interstate commerce or shall sell, otherwise distribute, or hold for sale or other distribution after shipment in interstate commerce any milk or milk product in final package form for direct human consumption unless the product has been pasteurized or is made from dairy ingredients (milk or milk products) that have all been pasteurized....”

In its March 16 response to the judge's questions, FDA took the position that “a person who purchases unpasteurized milk in one state with the intent to take it to another state (either for personal use or to distribute to others) is engaging in interstate commerce.” As for consumers who cross state lines intending to take raw milk back home for personal use, FDA stated that it “has never sought to bring an enforcement action against a person because he or she crossed a state boundary to purchase and return with raw milk solely for his or her own use, and FDA has no present intent to bring an action against such a person in the future. Nevertheless. . . the hypothetical interstate traveler in this example would have ‘caused’ raw milk ‘to be delivered into interstate commerce’ in violation of 21 C.F.R. §1240.61.”

What FDA is trying to accomplish with this answer is to let raw milk consumers know they are violating the law (by carrying raw milk across state lines for their personal consumption) while trying to get the consumer plaintiffs' case against it thrown out for lack of standing because the agency has never sought to bring an enforcement action against a consumer for violating the regulation; and trust them, they have no present intent to do so now even though they might change their mind later. What FDA wants is for consumers to live in fear without being able to challenge the agency's interpretation in court.

Regarding the second question, FDA stated “the hypothetical agent. . . violates 21 C.F.R. §1240.61, first by causing raw milk to be delivered into interstate commerce, and second by ‘distributing’ the raw milk to another after shipment in interstate commerce.” The situation involving the agent plaintiff, Eric Wagoner, is more than a hypothetical scenario. In October 2009, Wagoner and other members of the Athens Locally Grown food co-op in Georgia had been forced to dump over one hundred gallons of raw milk in Georgia, which had been transported in Wagoner’s truck after it had been obtained from a licensed raw milk producer in South Carolina. An FDA official was present at the dumping; the agency was a likely decision maker along with the Georgia Department of Agriculture in ordering the raw milk to be thrown out.

As to the final question, FDA found that the sale of raw milk to a hypothetical customer intending to transport the product across state lines would constitute “delivery into interstate commerce.” The agency went on to state, “Whether or not FDA would consider an enforcement action against the hypothetical seller in this question would turn on many other facts not presented. For instance, to the extent that the producer solicits interstate sales and/or regularly sells raw milk that is ultimately transported across state lines, FDA would review the facts for possible regulatory action.” If the raw milk producer advertises on the internet, is that soliciting interstate sales? If a producer regularly has people traveling in from other states to purchase raw milk, is the producer supposed to stop selling to those consumers in order to be in compliance with federal law?

On May 11 FDA filed a renewed motion to dismiss plaintiff’s complaint along with, in the alternative, a motion for summary judgment. In its brief supporting the motion to dismiss, FDA reiterated its earlier claim that there is no fundamental right to consume the foods of choice, stating, “Even if there were some plausible argument that people have rights guaranteed under the Constitution to eat and drink anything they want (and there is not), such rights would not trump the government’s paramount interest in protecting the public health.” The agency specifically claimed there was no fundamental right to consume raw milk, dismissing the historical fact that there was no mandatory pasteurization requirement from the time Jamestown was founded in 1607 until 1973 with the comment, “In that early era, modern sanitation standards had yet to be invented and microorganisms remained undiscovered.” FDA refuses to recognize that “modern sanitation standards” include vast improvements in sanitation for raw milk production and distribution over the conditions existing when pasteurized laws were first introduced.

The Farm-to-Consumer Legal Defense will be filing its own motion for summary judgment in the case. Judge Bennett could be issuing a ruling on both parties’ motions later this summer.

KENTUCKY – WHOLE LIFE BUYING CLUB

On May 27 an inspector from the Louisville Metro Department of Public Health and Wellness stopped off at a dropsite for the Whole Life Buying Club (WLBC), issuing the coordinator for the site an order to cease and desist distribution of unpasteurized milk from that location due to alleged violations of the state food code and dairy code. The sale of raw milk is prohibited under Kentucky law; WLBC obtains raw milk pursuant to a herd lease agreement it has signed with a farm in the state.

The inspector followed up the cease and desist order with a notice and order of quarantine of “all milk productions [at the site] until such time they are shown to be compliance with FDA and State of Kentucky Food Code.” The quarantine was issued on behalf of the Kentucky Cabinet of Human Resources, Department for Health Services. Both the quarantine and cease-and-desist orders were made out to the Farm-to-Consumer Legal Defense Fund. The drop-site coordinator had been speaking with Gary Cox, General Counsel for the Fund when the inspector was present.

The members of WLBC responded courageously to the government interference with the club’s raw milk distribution. A piece of paper was placed on the cooler containing the milk at the site; the paper stated, “I, the undersigned, hereby declare that I have taken my milk that comes from cows I own via private contract under the protection of the KY constitution (Articles 1, 2, 4, 6, 10, 16, 26), and if the county health department would like to speak with me about this matter, I can be reached at the number given below.” Before the day was over, about forty members of WLBC had signed the statement and taken their raw milk from the site.

In the days following the defiance of the quarantine, the WLBC members’ actions received considerable support in the media and among other like-minded groups in Kentucky. Pressure was put on the Louisville and state departments of health by state legislators as well. On June 3 an official from the department delivered a letter rescinding the cease and desist and quarantine orders to John Moody, co-administrator for WLBC. The actions of the WLBC members show the

importance of a united consumer front in moving government officials to acknowledge, whether they want to or not, the right of individuals to obtain the food of their choice from the source of their choice.

STATE RAW MILK LEGISLATION

It has been a rough legislative session for raw milk bills in the state houses. (See *Wise Traditions* Spring 2011 issue for background on the state raw milk bills introduced this legislative session.) The only bill to make it out of committee that is still alive is Senate bill 2702 (S-2702) in New Jersey; a companion bill, AB 743, passed out of the General Assembly on March 14 by a 71-6 vote. S-2702 has been assigned to the Senate Economic Growth Committee. The current version of the bill would allow the on-farm sale of raw milk and raw milk products by a licensed dairy. The bill also states that if a farmer and the consumer enter into a contract for share ownership of a cow, no raw milk permit shall be required.

One trend in the current legislative session has been increased opposition from FDA and the dairy industry. FDA has no jurisdiction over the sale of raw milk in intrastate commerce but has continued to put pressure on states to restrict or ban the sale of raw milk. This session, FDA submitted written testimony from Dairy and Plant Food Safety Division Director John Sheehan opposing raw milk legislation in Tennessee and Maine even though the bills in both states were primarily introduced just to clarify existing law; the sale of raw milk is already legal in Maine as is the distribution of raw milk through herdshares in Tennessee.

In New Jersey, major opposition to the raw milk bill there came from the National Milk Producer Federation (NMPF). According to the organization's website, NMPF "develops and carries out policies that advance the wellbeing of dairy producers and the cooperatives. . . the policy positions expressed by NMPF are the only nationwide expression of dairy producers and their cooperatives on national public policy." It has been under NMPF's watch that the number of dairies in this country has declined by over ninety percent since 1970. NMPF along with the International Dairy Foods Association sent a letter on April 4 to New Jersey Governor Chris Christie and State Senate Majority leader Steve Sweeney urging them to oppose S-2702. New Jersey has eighty-seven Grade A dairies left in the state. The NMPF would do better by its members supporting legislation that could actually keep them in business rather than continuing to pursue policies that will only shut down more of the dairy farms still remaining.

MINNESOTA – FREEDOM FARMS COOP RAID; HARTMANN CONTEMPT HEARING

On March 9, Alvin Schlangen, a poultry farmer and manager of the Freedom Farms Coop, was stopped by the St. Paul police and a Minnesota Department of Agriculture compliance officer, Jim Rutger, while making a food delivery to buyers club members near the campus of Macalester College. Schlangen's truck was towed to MDA headquarters, and almost all the food in the truck was embargoed by the department. Later that day, MDA officers went to the Traditional Foods Warehouse in Minneapolis, seizing and embargoing all food Schlangen stored in space that he had rented at that location. MDA offered to release some of the embargoed food that day if Schlangen purchased a mobile food retail license; the farmer refused, claiming that his distribution of food to buyers club members was not subject to MDA jurisdiction. The department seized over five thousand dollars worth of food. Schlangen has requested an administrative hearing to contest the legality of the seizure, which is yet to be held.

The day after the raid, MDA's main target, Gibbon farmer, Mike Hartmann, won a round against the department when Sibley County Judge Rex Stacey ruled that Hartmann was not in contempt of court for disposing of food on his farm that had been embargoed by the department in 2010. (See *Wise Traditions* Spring 2011 issue for background.) With the department's consent, the Hartmanns had been allowed to remove the embargoed food for family use. MDA was seeking to collect over eleven thousand dollars in fines from Hartmann for being in contempt.

In their fight with the state, both Schlangen and Hartmann have received considerable support from consumers in the Twin Cities area. In recognition of the work these consumers have done to support their farmers and protect access to nutrient-dense food, Bloomington was chosen as the site for the Third Annual International Raw Milk Symposium, which was held on May 7. Over two hundred people attended the event sponsored by the Farm-to-Consumer Foundation and the Foundation for Consumer Free Choice. The symposium focused on the partnership between consumers and food producers to ensure a choice in obtaining raw milk and other foods that people want and require for their health.

Those who have not joined the Farm-to-Consumer Legal Defense Fund are encouraged to do so. Membership applications are available online at www.farmtoconsumer.org or by calling (703) 208-FARM (3276); the mailing address is 8116 Arlington Blvd, Suite 263, Falls Church, VA 22042.

Healthy Baby Gallery



Sherry Elton, chapter leader in Invercargill, New Zealand, proudly shares this photo of her first grandchild, Isla Louise Sommerville. Sherry, her 'Narni', makes baby food for her with homemade bone stocks and homegrown meat and vegetables. She is also starting a raw milk delivery, with milk from her own Jersey cows.



Born at home on September 2, 2010, Avril Harman is the fourth child of Luana and Glenn Harman. Her parents have been practicing a WAPF lifestyle now since 2000! "We changed our diet when my first child was about one year old," says Luana, who is a chapter leader in Iowa. "Back then we drove ninety minutes to get raw milk from a farm. Now we milk our own cows." While pregnant, mom ate plenty of milk, kefir, butter, cream and cheese, all from their own cows. She also ate lots of eggs from our pastured chickens. She consumed fermented cod liver oil daily and lots of grass-fed beef and chickens. Luana also ate fermented veggies, drank kombucha and homemade ginger beer. At seven months, Avril is still breastfeeding and doing great! Says mom: "She is such a smiley baby."



Rebekah Jubilee Knowles, born on December 9, 2010, to WAPF members Robert and Amy Knowles, smiles for the camera. Amy was forty-three years old when Rebekah was born naturally at forty-one weeks. Throughout her pregnancy, and for years prior, Amy ate as traditional a diet as possible including raw milk, fermented cod liver oil and butter oil, pastured eggs, grass-fed beef and chicken, lots of chicken and beef stock, and more. Rebekah is Amy's fourth baby; the first two were born while she was still eating the Standard American Diet, but Rebekah and her older sister came along after the family's diet changes. Amy's pregnancies while eating traditional foods were much healthier than her S.A.D. pregnancies. Rebekah weighed over eight pounds and is very happy eating nothing but mommy's rich milk. She sleeps twelve hours at night and is very alert, content, and happy.

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NANP CONFERENCE

About two hundred attendees enjoyed the colorful WAPF booth at the annual conference of the National Association of Nutrition Professionals, held in Burlingame, California, May 1, 2011.

Cathe' Fish and Shan Kendall, Grass Valley/Nevada City WAPF Chapter Leaders, talk with Katie Carter, Hawthorn University student from Nevada City, who looks over our new Healthy 4 Life guidelines and recipe booklet.

Cathe' and Shan signed up twenty-two new members at the conference! Good work ladies, memberships are the life-blood of the Weston A. Price Foundation!

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CHAPTER MEETING DEMO

Over thirty people were in attendance for a raw cheese yogurt and kefir demonstration by Sam Yieter, aka FarmerSam, and Joan Zacharias. Participants then snacked on the good food that Sam and Joan had made. The meeting was held in the Wauconda Citizens Center.

The monthly chapter meeting is hosted by Linda DeFever, Lake County/Northwest Suburbs, Illinois chapter leader. Linda has been hosting meetings faithfully for six years!



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CHAPTER RESOURCES

Resources for chapter leaders can be accessed at www.westonaprice.org/local-chapters-list, including our trifold brochures in Word format and PowerPoint presentations.

LOCAL CHAPTER LIST SERVE

Thank you to Suze Fisher, a chapter leader in Maine, for setting up a local chapter chat group. New chapter leaders can sign up at <http://groups.yahoo.com/group/wapfchapterleaders/>

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MICHIGAN WOMEN'S HEALTH EXPO

Janice Scharich, one of nine volunteer exhibit staffers at the Michigan Women's Expo in March 2011.

Janice is a member of the Grand Rapids, Michigan chapter of the Weston A. Price Foundation.

The conference boasted over seventeen thousand attendees, many hearing the WAPF message for the first time. There was great interest in the dangers of soy (many shocked to learn that soy is not healthy) and nutrient-dense diets for their autistic children.



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WAPF REPRESENTED AT LA LECHE LEAGUE CONFERENCE

Elanor Sodergren, Lincoln, Nebraska chapter leader staffs the WAPF booth at the La Leche League of Nebraska's Breastfeeding and Parenting Conference on May 7, 2011.

Elanor also gave a presentation on digestion called, "Do you have the GUTS for good health?" It was well received, and several attendees took home journals, brochures, and renewed hope that they could begin to heal their families. All in all a good day!

The conference organizer liked the talk so much that she invited Elanor to give it again to her friends and family. She also asked to see the Nourishing Our Children DVD presentation, and another presentation that Elanor has developed called "Traditional Wisdom for Today's Women: Flourishing Fertility with Help from the Past." Good work, Elanor, in answering Dr. Price's call to Teach, Teach, Teach!

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FIRST SMALL FARM SUMMIT ON LONG ISLAND

The State University of Old Westbury was host to the unprecedented Small Farm Summit on Long Island on April 15, 2011. The conference was a project of the Long Island Small Farm Initiative, and it marks the beginning of an on-going effort to cultivate active community support for sustainable local agriculture. It was a full day featuring twenty different workshops sponsored by Long Island agencies such as Slow Food Huntington, Sustainable Long Island and the Long Island Chapter of the Northeast Organic Farming Association of New York (NOFA-NY). These groups, along with others, have united to launch a grassroots campaign to raise awareness of local food on Long Island.

Nearly six hundred people attended, including organic and conventional vegetable farmers, chicken farmers, gardeners, teachers, students, and other people who were interested in the issues facing the Long Island community in regard to the food supply and its impact across socioeconomic lines.

The keynote speaker was our beloved Joel Salatin. He debunked ten myths about farms, ranging from "farming hurts ecology" to "who cares about earthworms" to "farming is dirty" to "local food is expensive and elitist." Joel Salatin demystified these urban perceptions about farming with style and humor.

In a later session Salatin presented a PowerPoint about his methods of polyculture sustainable farming. On his farm everything gets recycled back into the soil. For example the cows are on pasture and the chickens follow the cows and pick

through the cow pies, allowing the manure to degrade into the soil. The cows need to stand on straw for healthy hooves, so the stalls are padded with a lot of straw peppered with corn kernels. When the straw starts to smell, the pigs are taken into the stalls to burrow for the corn and thus they "aerate" the straw and this alleviates the smell. He calls them "pigaerators!"

In the exhibit area, the Weston Price Foundation was well represented by three chapter leaders from Long Island; Caroline Barringer (left), Juliana Mazzeo (right) and Tara Gidaly, who generously donated their time for the entire day. As you might imagine, the table was hopping and many people received vital information. It was exhilarating to see how many people were involved in some aspect of support for a local agrarian economy, food self sufficiency and improving the farm to consumer relationship on Long Island.

Report by Dr. Jill Tieman: Great South Bay WAPF
www.RealFoodForager.com



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LOCAL CHAPTER BASIC REQUIREMENTS

1. Provide information on sources of organic or biodynamic produce, milk products from pasture-fed livestock (preferably raw), pasture-fed eggs and livestock and properly produced whole foods in your area.
2. Provide a contact phone number to be listed on the website and in our quarterly magazine.
3. Provide Weston A. Price Foundation materials to inquirers, and make available as appropriate in local health food stores, libraries and service organizations and to health care practitioners.
4. Provide a yearly report of your local chapter activities.
5. Be a member in good standing of the Weston A. Price Foundation.
6. Sign a contract on the use of the Weston A. Price Foundation name and trademark.

OPTIONAL ACTIVITIES

1. Maintain a list of local health care practitioners who support the Foundation's teachings regarding diet and health.
2. Represent the Foundation at local conferences and fairs.
3. Organize social gatherings, such as support groups and pot luck dinners, to present the Weston A. Price Foundation philosophy and materials.
4. Present seminars, workshops and/or cooking classes featuring speakers from the Weston A. Price Foundation, or local speakers who support the Foundation's goals and philosophy.
5. Represent the Weston A. Price Foundation philosophy and goals to local media, governments and lawmakers.
6. Lobby for the elimination of laws that restrict access to locally produced and processed food (such as pasteurization laws) or that limit health freedoms in any way.
7. Publish a simple newsletter containing information and announcements for local chapter members.
8. Work with schools to provide curriculum materials and training for classes in physical education, human development and home economics.
9. Help the Foundation find outlets for the sale of its quarterly magazine.

Local Chapters

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 A big welcome to our new chapter leader from Denmark!

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VIDEO SERIES ON TRADITIONAL DIETS AND FOOD PREPARATION

By Sarah Pope, Tampa, Florida Chapter Leader

Sponsored by the Weston A. Price Foundation, Tampa, Florida chapter leader Sarah Pope, author of The Healthy Home Economist blog, is preparing a series of thirteen short videos that focus on putting nourishing traditional diet principles into practice. Topics include stocking a healthy kitchen, sacred foods, stock preparation, grain preparation and lacto-fermented foods. Most importantly, Sarah has recorded a detailed video on the preparation of homemade baby formula.

We are posting these at westonaprice.org as soon as each one is released. You can watch our progress at <http://westonaprice.org/action-alerts/134/2212-videos-by-sarah-pope-fl-chapter-leader>. The videos are also posted on the Weston A. Price Foundation youtube page.

A big thank you to Sarah for this professional video collection, produced by David and Anthony of David Hurd Productions, located in Tampa, Florida. David has made sixty TV shows and is now looking for video projects that help people live a better life. These new, professionally produced videos will certainly help the WAPF message reach thousands of people searching for the truth about diet and health.



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MANCHESTER WAPF MEETS GREAT SOUTH BAY WAPF

The common passion of Real Food is so strong it connects people all over the globe. When I had to make a short business trip to the UK, I wondered whether there was a WAPF chapter in the city where I was headed. Sure enough, there was a chapter in Manchester! I reached out to the chapter leaders there and one of them, Elizabeth Wells, was available to meet me and show me around for an afternoon.



Amazingly, we had so much in common. We are both nutritionists. Elizabeth has a PhD in English literature and I have a masters degree in English literature. Elizabeth is a nutrition counselor as well as a health writer. I am a nutritionist, chiropractor and a Real Food blogger.

Elizabeth graciously took me around to a local farmers market and other local shopping areas, and we spent the afternoon talking and sharing information. We discussed chapter issues and how to grow the chapter, real food supply issues and many other topics. It was as if we had known each other for years. Food can do that to you—real food, that is. Many thanks to Elizabeth for making my afternoon the best part of my trip!

Written by Dr. Jill Tieman, Great South Bay Chapter WAPF
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Come to our farm! Healthy, FAT, beef & pork, born and raised certified organic, no nitrates. Sides or cuts (as available) plus many other healthy foods. Chapter Leaders Dale Kelsey—sustainable producer receiving no government funds, no grants, no subsidies—and Eileen Kelsey, CHom. incorporating WAPF Nutrition with Classical Homeopathy (815) 239-1466.

IN

Pastured chicken available June to October, dressed or live. Please order 3 months in advance of when you want the chicken J. M. Schwartz, 7560 S 200 E, Berne IN 46711.

Raw milk cheeses, grass-fed beef, veal, whey-fed pork. Also, a variety of fresh raw dairy products available as pet food. 100% pasture fed cows. NO hormones, pesticides, antibiotics used. **Will ship.** Available from the Yegerleher's The Swiss Connection. (812) 939-2813, www.swissconnectioncheese.com, Clay City,.

MD

Windmill Meadows Farm, Washington County. Grass-based sustainable family farm. Our focus: healthy, well-balanced soil produces healthy livestock on healthy grass for healthy, good-tasting food products. Grass-fed dairy, beef, goats, pasture-based poultry (broilers & layers). Availability to Washington DC markets (301) 739-5258.

We encourage our readers to obtain as much of their food as possible from small farms and independent businesses.

MI

Creswick Farms. Dedicated to raising healthy, happy animals—lovingly cared for as Mother Nature intended—which provide high-energy, nutritious and delicious food sources for health-conscious individuals. No antibiotics, steroids or GMOs ever fed to our animals! (616) 837-9226, www.CreswickFarms.com.

MN

Farm on Wheels offers animals raised on green grass & certified organic by MOSA. Nutrient-dense cuts of beef, lamb, chicken, turkey, goose, duck, pork, lard, butter & eggs. No corn or soy. Farmers Market year round in St. Paul, Prior Lake, Northfield, Linda (507) 789-6679, www.farmonwheels.net.

Pork & Plants Heritage Farm located in SE MN.. Heritage red wattle pigs, chickens, ducks, turkeys and eggs. All grain from our organic farm to insure quality soy-free feed. Pasture based with exceptional taste. Contact eric@porkandplants.com or (507) 689-4032 www.porkandplants.com.

NJ

Fresh food from fertile soil. River Birch Micro Farm. Member: Farm-to-Consumer Legal Defense Fund. Eggs from chickens on grass pasture. Fruits, nuts and vegetables. Farmer/Soil Scientist Joseph Heckman, Ph.D. 19 For-man Ave, Monroe Township, New Jersey 08831 (732) 605-0444.

FARM PRODUCTS BY STATE

Full food farm ecosystem in NorthWest NJ seeks member/partners to build community for third growing season. We provide free-choice weekly pickups year-round of pastured animal products, seasonal and stored vegetables, with future plans for beans, grains, fermented foods. howlingwolffarm@embarqmail.com.

NY

Raw milk from dutch belted cows organic certified farm, grass-fed. Call us for other products. Ana Lups, Pleroma Farm, Hudson, NY (518) 828-1966.

New York Buyers Club. Certified organic grass-fed dairy products from Jersey cows. Eggs from pastured chickens. Grass-fed beef, pork and chicken. Fermented foods, Green Pasture Products, soaked and dried nuts and raw honey. **Will ship.** (717) 768-3437. Pleasant Pastures.

PA

All Natural Chicken, no medication, raised with organic feed, pastured on the farm. Fresh whole chicken \$2.95/lb; eggs \$3.00/dozen. The Miniature Farm, Larry and Rachel Halteman, Newville, PA (717) 776-7157

Bareville Creamery.:100% Grass-fed. We offer raw cultured butter from our grass-fed cows. We **will ship** to you. \$8.00/lb plus shipping, or visit our farm to pickup. Daniel & Katie Zook, Leola, PA, (717) 656-4422.

Certified organic grass-fed, raw milk dairy, beef and poultry products near Reading, PA. Cows not fed any grain; new pasture every 12 hours. Eggs are soy free. King of Prussia Farmers Market. www.springcreekstrickerfarms.com or call Spring Creek Farms (610) 678-7629, Forrest Stricker."

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FARM PRODUCTS BY STATE

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If you are looking for milk & golden cheeses from totally grass-fed cows, veal raised at momma's sides, romping on the green, soy-free turkeys, free-range pastured poultry, & eggs, and if you have a desire for beef and lamb raised on fresh green grass without grain, vaccinations, or wormers, rabbits hopping in the grass...you are welcome to stop in or to give us a call! Mark & Maryann Nolt & family Newville, PA, (717) 776-3417.

Grass-fed and soy-free dairy, beef, chicken, and pork for our family and friends, specializing in cheese, butter and eggs. **Will Ship,** Family Cow Farm, 1090 Kirkwood Pike, Quarryville, PA, 17566.

Miller's Biodiversity Farm is looking to supply small and starting co-ops with milk, meat and eggs. For more information please call Aaron (717) 806-0392 **Will Ship.**

Owens Farm, Sunbury, PA, grass-fed lamb, pastured Tamworth pork (fed soy-free grain), pastured meat chickens, soy-free heritage chickens, raw honey, sheep camp, farm tour, Adopt-A-Sheep & more. Visit Owens Farm www.owensfarm.com (570) 286-5309. info@owensfarm.com.

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FARM PRODUCTS BY STATE

Raw dairy products from our 100% grass-fed cows - whole milk, heavy cream, cream cheese, sour cream, cottage cheese, butter. All made here on our 13-acre Chester County Farm. Free from hormones and synthetics. Samuel and Esther Fisher, (610) 273-2076.

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Raw milk cheese from our grass-fed Jerseys, made on our family farm with Celtic sea salt. No-grain feed. Also grass-fed beef and lamb and pastured chickens, turkeys and eggs. No hormones or synthetics. On-farm sales. Wil-Ar Farm, Newville, PA. (717) 776-6552.

Raw milk cheeses from organically managed, 100% grass-fed Jersey cows. Retail and wholesale. Prices start at 4.75/pound, **we do mail order** cheese. Raw milk and organic eggs available. Eastern PA, 15 minutes N of I78, 153 Martins Rd. Pine Grove, PA 17963 (570) 345-3305.

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VA
Belle Meade in Sperryville. Pastured livestock, no hormones/antibiotics: chickens, other poultry, pork, grass finished beef, eggs; organic vegetables. Contact 540-987-9748 or tanya@bellemeadeschool.org. Join e-mail list to receive availability updates. Pickup at farm; nearby locations; Fairfax County Government Center. www.bellemeade.net

FARM PRODUCTS BY STATE

Cow/Herd shares available, with Member in Local Kine (M.I.L.K.) Project in Fauquier County at Western View Farm, 2028 Laws Ford Rd., Catlett, VA 20119. For information call Martha Bender (540) 788-9663.

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Mount Vernon Farm raises 100% grass-fed beef & lamb and pastured pork. We have an on-farm store and buyers clubs throughout Northern and Central Virginia. Contact us at (540) 987-9559 or mtvfarm@gmail.com. www.mountvernonfarm.net.

Salatin family's Polyface Farm has salad bar beef, pigator pork, pastured chickens, turkeys and eggs, and forage-based rabbits. Near Staunton. Some delivery available. Call (540) 885-3590 or (540) 887-8194.

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Thomas Jefferson

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or GAniC FAr MEr /blacksmith, 35, wants friends and a wife. interests: Biblical Christianity; high-brix farming; metalworking; horse farming and logging; alternative energy; rural life skills; and healthy, sustainable lifestyle. not enamored with the electronic age. Timothy Martin 331 County route 47, Potsdam nY 13676

SinGLE SEnior wAPF Group, Maria Atwood, retired and a Colorado Chapter leader would like to form a single seniors group of men & women 55 and up. if anyone in that age group is interested please contact her at: easternplainswapf@yahoo.com (719) 573-2053, Colorado Springs, Co.

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DVD "nourishing our Children" recently launched a DVD that may be used for one's self-education or to present to an audience. You will learn how to nourish rather than merely feed your family nourishingourchildren.org/DVD-wise.html **Free Shipping!**

DVD "raw Milk: The whole Truth" (AKA: The raw Milk Controversy: Fact & Fiction) Explains the whole truth about raw Milk! reviewed by wAPF: <http://www.westonaprice.org/dvdmedia-reviews/thumbs-up/1433-raw-milk-controversy.html>. See 4 video clips on YouTube! (ChefJem33) order by check or through PayPal. email chef@thesetruths.com \$20.00 per DVD (incl. S&H & PayPal fees)

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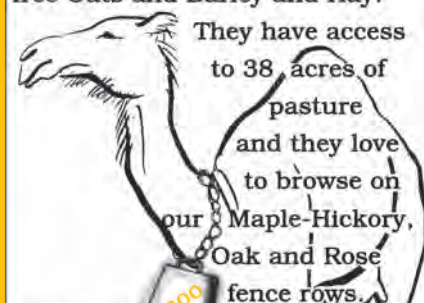
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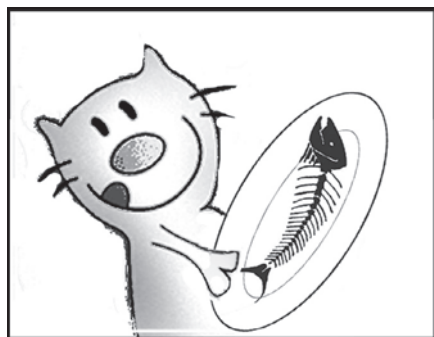
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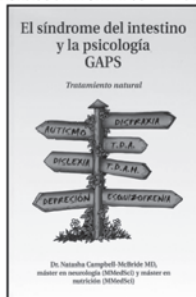
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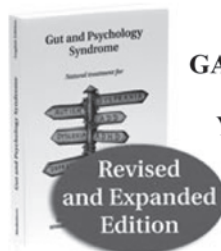
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The second manual, *Iqaluich Niginaqtuat, Fish That We Eat*, provides information regarding the traditional use of fish, their processing, recipes and eating enjoyment. It was compiled from the local traditional fish knowledge of northwest Alaska and was partially funded and placed on the web by the U.S. Fish and Wildlife Service.

The third manual in this series will similarly detail the traditional Inupiat processing techniques and recipes for sea mammals.

Presently there is no funding to support this work. Any suggestions would be welcome. The web link to *Iqaluich Niginaqtuat, Fish That We Eat*, is below. The report is located under the U.S.F.W. Northwest AK section. From here you can read it and/or download and print it. It should be printed double-sided due to the length (341 pages), including 100+color photos, sketches.

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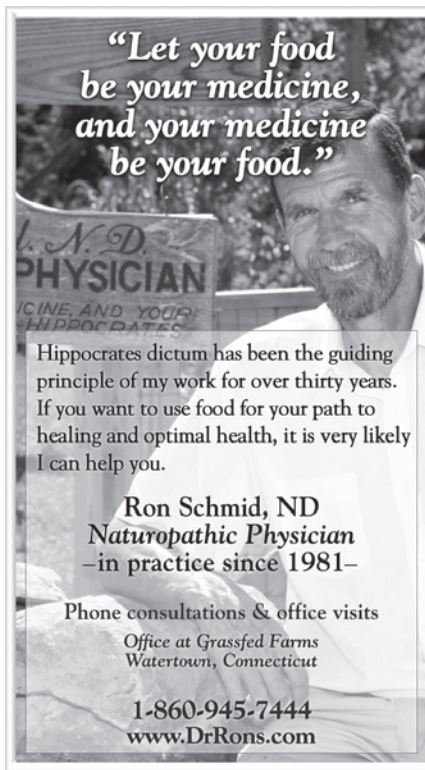
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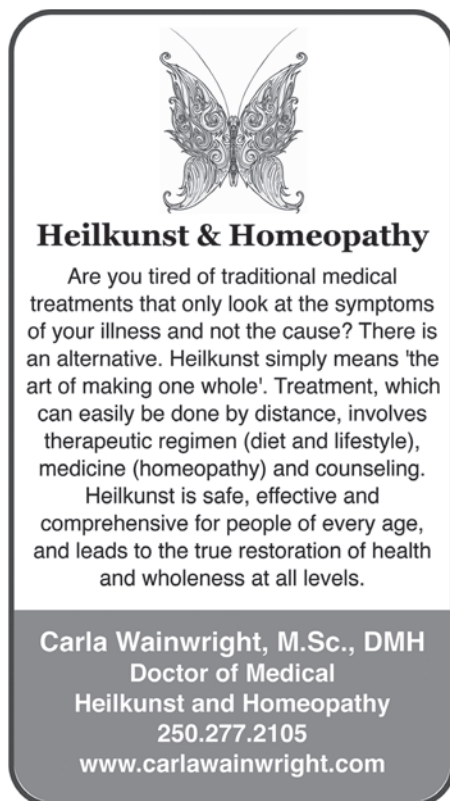


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