THE Original Internist

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CLINT PUBLICATIONS

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1. Sun QQ; Xu SS; Pan JL; Guo HM; Cao WQ (1999). "Huperzine-A capsules enhance memory and learning performance in 34 pairs of matched adolescent students". Zhongguo yao li xue bao = Acta pharmacologica Sinica 20 (7): 601–3
2. Shulgina GI (1986). "On neurotransmitter mechanisms of reinforcement and internal inhibition". Pavlov J Biol Sci 21 (4): 129–40

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News items and/or letters pertaining to natural health care are welcome. The editorial staff reserves the right to edit and/or reject all material received. Letters to the editor may be condensed in order to fit the allotted space. An address and telephone number where the author may be reached during normal business hours should also be included for verification purposes. Deadline for article submission is the 5th of the month preceding publication.

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CALENDAR OF EVENTS

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January 5 - 6, 2013 Session # 7 (Kansas City, MO)
Blood Interpretation Workshop (Old 8)
Instructor: Bill Kleber, DC DABCI

January 26 - 27, 2013 Session # 21 (Chicago, IL)
Peripheral Vascular Disease Workshop
Instructor: Darren Kirchner, DC DABCI

February 2 - 3, 2013 Session # 1 (Las Vegas, NV)
Introduction to Chiropractic Family Practice
Instructor: Darren Kirchner, DC DABCI

February 9 - 10, 2013 Session # 22 (Chicago, IL)
Facts of Neoplastic Process & Examining the Cancer Pt.
Instructor: Ben Bowers, DC DABCI

February 16 - 17, 2013 Session # 8 (Kansas City, MO)
Immune Function and Autoimmune (Old 17-18)
Instructor: Ben Bowers, DC DABCI

February 23 - 24, 2013 DOT (Orlando, FL)
DOT Medical Examiner Seminar 12 Hours CE
Instructor: Christopher Murray, DC DABCI

March 1 - 2- 3, 2013 Session # 9 & 10 (Kansas City, MO)
Endocrinology NEW 24-Hour SESSION
Instructor: Branden Lundell, DC DABCI

March 9 - 10, 2013 Session # 23 (Chicago, IL)
Malignant Diseases, AIDS, Their Management & Treatment
Instructor: Delilah Anderson, DC DABCI

March 15 - 17, 2013 THE GETAWAY (St. Louis, MO)
Marketing Seminar

March 22 - 23, 2013 Session # 1 (Los Angeles, CA)
Introduction to Chiropractic Family Practice
Instructor: Darren Kirchner, DC DABCI

April 6 - 7, 2013 DOT (Los Angeles, CA)
DOT Medical Examiner Seminar 12 Hours CE
Instructor: Chris Murray, DC DABCI

April 13 - 14, 2013 Session # 1 (Boston, MA)
Introduction to Chiropractic Family Practice
Instructor: Cindy Howard, DC DABCI

April 13 - 14, 2013 Session # 1 (Phoenix, CA)
Introduction to Chiropractic Family Practice
Instructor: Darren Kirchner, DC DABCI

April 13 - 14, 2013 Session # 24 (Chicago, IL)
Upper Gastrointestinal Disease
Instructor: Ben Bowers, DC DABCI

April 20 - 21, 2013 Session # 1 (Salt Lake City, UT)
Introduction to Chiropractic Family Practice
Instructor: Darren Kirchner, DC DABCI

April 20 - 21, 2013 Session # 1 (Charlotte, NC)
Introduction to Chiropractic Family Practice
Instructor: Richard Davis, DC DABCI

April 26 - 28, 2013 Session # 11 & 12 (NUHS CAMPUS)
Pelvic Classroom & Workshop (Old 4-5) 18-Hour Session
Instructor: Cindy Howard, DC DABCI

May 4 - 5, 2013 Session # 25 (Chicago, IL)
Lower Gastrointestinal Disease
Instructor: Cindy Howard, DC DABCI

May 4 - 5, 2013 Session # 1 (Albuquerque, NM)
Introduction to Chiropractic Family Practice
Instructor: Darren Kirchner, DC DABCI

May 18 - 19, 2013 Session # 13 (Kansas City, MO)
Cardiovascular Disease - Advanced Mgmt & Prev (Old 9)
Instructor: Bill Kleber, DC DABCI

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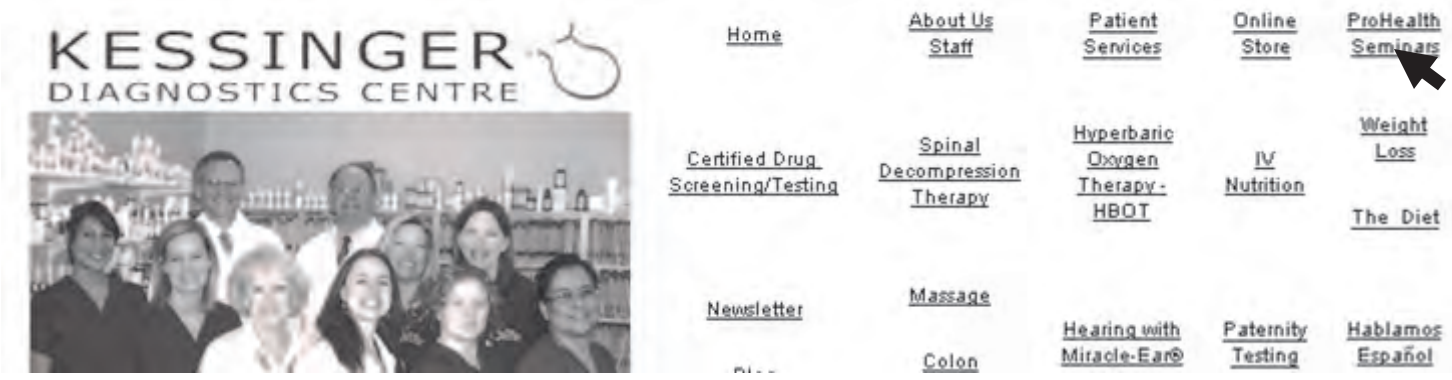
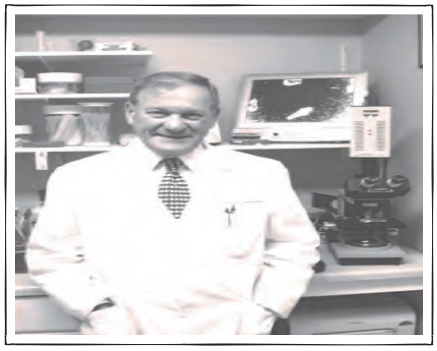


From the Archives of Jack Kessinger DC, ND, DABCI



Editors Note:

Names and titles seem to change in the medical world but the same complications and concerns remain.

It is a little unsettling to me to watch the patterns of medical thinking follow paths which hold danger to patients.

We can expect a large push for influenza vaccines this time of the year. Our local pharmacy has a gigantic banner in front of their business which says, "Flu Shots Here." A few weeks later their new banner reads, "Free Shingles Shots."

For those of you who blog, it is not hard to find the inquiries (and anger) over patients receiving a flu shot one day, being achy the next, followed by a case of shingles!

Coincidence?

Which makes my mind wander to thinking... Should all patients be taught to question procedures and protocols? We are seeing a nation of people who think it is normal to take medicines daily. They do not question why, if one medication is not effective, they are given another on top of the original one. Shouldn't they be coached to ask why new medicines are added, rather than simply changing to another? If the trend for over-medication continues, we will eventually become a nation of zombie drug addicts. The average patient presenting to our clinic for care reports 7-10 medications. This should not be acceptable.

Patients could also be educated to understand the importance of a strong immune system. Couldn't they understand that all people, exposed to every bug, do not get sick? What a concept!

Reprinted from The Original Internist 2010

SWINE FLU REVISITED

by Jack Kessinger, DC, ND, DABCI

Flu season is rapidly approaching, and with it the annual warning, "be sure and get your flu shot." Every year, the medical profession, pharmaceutical companies, and our government agencies, strongly promote that everyone, especially the very young and our senior citizens, be vaccinated against the flu.

However, this year we are being warned of a new flu complication. In addition to the commonly recognized flu strains, this year a new type of flu has been reported, called the swine flu, and commonly referred to as H1N1.

While formulating vaccinations against both types of flu, has created a quagmire, one of the known types, plus this, has caused an intensified concern.

It seems that, closely following the flu vaccinations we annually hear complaints of the many unwanted, and varied, side effects that are commonly associated with the annual flu vaccinations (including headaches, fevers, GI problems, severe malaise, etc) commonly associated with the annual flu vaccinations. In fact, some have said they would prefer the flu itself rather than have to suffer the side effects of the vaccination.

Developing a flu vaccine is not that simple. Before a specific vaccine can be developed, the specific strain must be accurately identified. This is an annual challenge for the pharmaceutical companies. If the correct strain is not guessed, in addition to the formulated vaccine proving ineffective, the vaccine itself is often blamed for providing its own set of health complications.

In addition to attempting anticipating which of the numerous specific flu strains that presents annually, a new complication has presented itself. Flu, swine flu (also known as H1N1), presents those pharmaceutical companies who are attempting to design a specific vaccination with additional complications.

What would be an objection to supporting our patients immune system, to be strong enough to dodge the influenza bug? Proper diet, nutrition and exercise have no unwanted side effects. Large doses of Vitamin C boosts the immune system. Monolauric Acid fights viruses.

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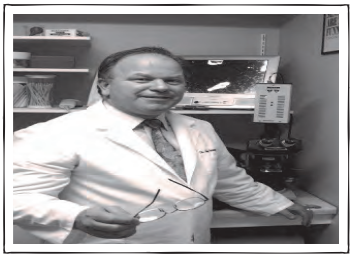
The Legacy



Dr. Jay Kessinger

by: A. Jay Kessinger IV, DC, ND, DABCI
jay@drkessinger.com

As my brother and sister in-law, Drs. Robert and Christina, have relocated their practice to our clinic, the legacy continues. Our family's legacy in chiropractic had its beginning in the roaring 20's, a decade of prosperity and decadence in America. Our great grandfather, Dr. J. H. Butler graduated from National College of Chiropractic while supporting a family of eight and running a successful organic farm. Our grandfather, Dr. A. J. Kessinger (Dr. J. H.'s future son-in-law) presented himself as a teenager, unable to join the hay thrashing crew as planned, because he'd contracted scarlet fever. At that time it reportedly took six weeks to recuperate from this illness, with standard medical care. Dr. Butler treated young A. J. three consecutive days. He restored his health, enabling A. J. to join the hay thrashing crew on the fourth day. I remember my Grandad Kessinger saying that he'd always wanted to be a doctor. After seeing how much more effective chiropractic was compared to the medical approach, he said "I'm going to be a chiropractor"…and he was for over 50 years. My Grandad Kessinger met his future wife, and worked on the hay crew as well.

His diploma hangs in my adjusting room, as his name is the same as mine; however, since he graduated in 1949 from Missouri Chiropractic Institute, I also keep my 1986 Logan College of Chiropractic diploma hanging on an opposing perpendicular wall to avoid confusion.

Our parents, Jack and Virginia Kessinger attended chiropractic college. Dr. Jack Kessinger (Dad), graduated from Cleveland College of Chiropractic in 1963. Virginia Kessinger (Mom) was unable to completely finish her last semester before their departure from Kansas City to set up a practice in an area they would be able to raise three boys, me being the eldest.

In the 70's, chiropractic began to earnestly lose its way in the health care provision arena, when insurance acceptance became vogue. The only caveat in health insurance reimbursement for chiropractic care was chiropractic's premise being "neuromusculoskeletal only" practices. No longer would chiropractic be widely recognized in the treatment of internal human maladies; i.e., diabetes, scarlet fever, heart disease, etc; without the primary lesion being a spinal subluxation. That was okay in the beginning, but it wasn't too long until the spinal subluxation complex and contiguous structures were the only thing being submitted to the insurance companies by chiropractors for reimbursement. This changed the mindset of people seeking chiropractic care, as-well-as those within the chiropractic profession. At the time chiropractic was one of only three recognized diagnostic professions in the United States.

By the 80's, chiropractic had drifted so far from Dad's passion, primary care in chiropractic, that he delved into Dr. Michael R Cessna's ADS (Applied Diagnostic Systems), a precursor to the ACA's CDID (Council on Diagnosis of Internal Disorders), to the extent that he earned the DABCI (Diplomate of American Board of Chiropractic Internists), became a nationally renowned and internationally known practitioner, educator and leader within the modern movement of alternative health care.

Dr. Jack Kessinger's bailiwick was within the chiropractic profession; however, his colleagues and peers ran the gamut of all professional scientific health care disciplines. As his father, and grandfather before him, Dad's legacy encompassed a hunger to understand the cause of, and a thirst to provide solutions for, the maladies of humanity. It is from this prodigy that our legacy continues:

Dr. J.H. Butler	Great Granddad
Dr. A.J. Kessinger	Granddad
Dr. Herschel Butler	Great Uncle
Dr. Jack Kessinger	Dad
Dr. Marilyn Kessinger	Aunt
Dr. H. Jess Kessinger	Uncle
Dr. Robert Kessinger	Brother
Dr. Christina Kessinger	Sister-in-law

Dr. Andrew Jackson Kessinger IV
……..and that's me, Dr. Jay Kessinger.
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SOUND OFF

by: William J. Risley Sr., DC

WHEN WILL THIS INSANITY END?
A COMMENTARY ON POLITICAL MEDICINE'S CHICANERY, OR SHOULD IT BE LABELED CRIMINALITY?

In my practice locality, there is a medical doctor who advertises a "patented surgical technique for relief of carpal tunnel syndrome." Average cost? 7,000 to 10,000 dollars. "Patented" in theory, of course, guarantees he is the only doctor allowed to use this technique, and he will make all of the profit. When you watch television on the weekend, and certainly also on weekdays, various instruments abound for juicing vegetables, weight loss exercise devices, skin conditioners, hair regrowth, better sleep, and on and on. Personally, I counted 19 commercials on a one-half-hour-sitcom, and I missed the last 3 or 4 minutes at the end of the show that is reserved for more commercials. A professor in a university in Atlanta, had his students count prescription drug ads on the cable network in Atlanta in one day; they came up with 1800 commercials.

Now I suppose if you have a better way of treating your skin or exercising and juicing food, it is not inappropriate to patent those devices, and garner a larger share of profit in the marketplace. Patenting a medical or surgical procedure, to secure the major profit, does not seem appropriate, as the patient's life may be at risk. Additionally, in my practice of 50 some years as a chiropractor, I cannot recall ever failing to correct a carpal tunnel problem. Cost to the patient? About $50.00. Chances of error and side effects? Virtually none! Is sometimes surgery an option? I would suppose so, but rarely. Acid reflux, associated with a hiatal hernia responds in a similar manner, and surgery for such a problem has a generally poor outcome. With appropriate manipulation, it is handled quite efficiently.

Here is a story of interest, that is so common in the fraternity of political medicine. A patient of mine developed a liver carcinoma. His physician said that he would die in 6 months. The patient stated that he would like to try Krebiozen-Vitamin B17. This cancer fighter was advertised probably 40 years ago, and vilified by political medicine and the federal government and got no where. Same old story. However, in response to my patient's request, the doctor said: "No! You have liver cancer, and you will die in 6 months, and I do not want you to try anything that we have not done for you!" The patient died of course. The doctor should have been arrested for manslaughter! What gives him the right to withhold any desired treatment of any of his patients. He does not know all there is to healing, although political medicine would certainly like us to feel that way!

A recently released video on the Internet, stated that the federal government (FDA) has spent 60 million dollars to run Dr. Burzynski, of Houston, Texas, out of business for curing cancer. Five (5) convened grand juries have failed to indict this doctor. What gives the government authority to criticize, indict, and otherwise harass this doctor who apparently has been curing significant cancer patients for some time. He is obviously preventing many deaths of our citizens, but any dent in the incomes of chemotherapists and oncologists simply will not be tolerated. Laws against monopolies apparently do not apply to the sacrosanct profession of medicine. God help any doctor that comes up with a cure for cancer. He will be fined, jailed, likely deported and who knows what else, for daring to interfere with medical treatment.

A patient of mine told me his wife thought that M.D. stood for "Magnificent Deity." Continuous propaganda supports that view, and it is seriously in error regarding healing! I had a patient that had all of his male genitals removed, due to a cancer, and he came in with low back pain. I called the M.D., requested any lumbar films, rather than radiating him again, and the doctor said "No, you can't do anything for him that we have not already done." I was young and naive at the time, but should have said, "that's true, you ruined his life, and I surely would not have done that."

Should any doctor be allowed to operate on carpal tunnel patients, without first seeing if another treatment such as manipulation could help? On a chiropractic e-mail list recently, a D.C. reported a patient that had chest discomfort, saw some cardiovascular surgeons, who promptly hospitalized her and put in three cardiac stents. Several weeks afterwards, she went to the D.C.

(Continued on next page)

with the same complaints, and some pressure point techniques solved her complaints. I had a D.C. colleague that said he could predict a day when all patients admitted to the E.R. for care would first have to be seen by a chiropractic doctor. I had trouble believing that at the time, but it is beginning to make more sense today.

Teaching one of my seminars, a chiropractic internist attending stated that she gave a female diabetic patient 1 adjustment, and she was taken to the E.R. that evening in insulin shock. The following week, she was given another adjustment, ended up in the E.R. again, and the doctors in the E.R. took her off of insulin and declared her cured of diabetes!

A neighbor of mine, under my care for a blood pressure of 175/115, psoriasis, over weight, impotence, and diabetes, went for a check-up, after my care. The nurse took his pressure twice, and told him she didn't understand what she had found, and that his pressure was normal, even without drugs. After further examination; his blood sugar- HbA1c was a normal 6, his psoriasis was gone and he was no longer impotent. She said, "We never see this. We just monitor the patient's blood sugar and do amputations as they appear needed." She was flabbergasted, to say the least. In my office, the patient had been placed on a high fat diet, spinal adjustments, nutritional supplements, castor oil packs, and subsequently lost 34 pounds. He previously had three cardiac stents placed at 47 years of age! On a subsequent overseas trip, he walked up a castle staircase of 280 steps without typical breathing difficulties.

In my practice some time ago, my partner dialed 911 when an apparent heart attack patient was brought in by his wife, as they passed by the office. Waiting for the paramedics, he was given an adjustment, and when the medics arrived, he was sitting up drinking coffee and telling jokes! Are their times that medical attention is needed for heart problems? Yes, there are, but I have heard many stories of similar results with adjustments on what is alleged to be a cardiac case. Even confirmed cardiac cases do better with spinal care! In the Doppler seminars that I taught for years, it was common to see a 100% increase in arterial/capillary blood flow to the toes, (Plethysmography) with 1 cervical adjustment. An M.D. of renown, vascular surgeon and author, who has two circulation tests named for him, assisted me in several of my seminars. He said the increase in arterial blood flow in one patient, which had markedly increased post-adjustment, was virtually unbelievable. He said "I would have given him an abdominal aortic bypass, to prevent amputation and or gangrene in his lower extremities!"

Another seminar doctor complained of intermittent claudication. He would walk 100 feet and his legs would cramp. He rested and then walked another 100 feet, with the same symptom result. His API- (Ankle Pressure Index) was 39, which translated, says that his ankle arterial pressure is 39% of the arm pressure, whereas it should be 95 to 100%. I told him to get a hair mineral analysis, and he said, "I did that and it did not work." I convinced him to do it again, and 6 months later, he had an API (Ankle Pressure Index of 89 (Normal 95 to 100). He had no more claudication, and was walking 18 holes of golf effortlessly!

A news media story in New Zealand, recently spread through the Internet. A farmer was on life support with a significant case of H1N1 flu, and the staff voted to let him die in three days. His wife and sons asked them to try IV vitamin C. They refused. In response, one son asked. "My dad is going to die on Friday, correct? Then, what is the harm in trying something else?"

One physician suggested that they humor the family, and agreed to 25 grams of ascorbic acid, IV, twice on Wednesday. By Friday, he was conscious, out of the coma, taking food orally and Vitamin C. Moving to a hospital closer to their home, the next M.D. refused more Vitamin C, until the family had the hospital's lawyer intervene. Shortly thereafter, he agreed to a minuscule 1 G, twice a day, but the patient was taking more orally. He recovered. Later at his home, a neighbor said that the patient owed him $18.00. Asked why, he stated that he had to get his suit cleaned to attend the funeral after his death! And of course, there was no funeral. Those doctors should have been disciplined severely, but the Magnificent Deity concept runs deep! I have recently read that New Zealanders are demanding more use of Vitamin C, but political medicine has blocked such information from reaching this country.

A recent story released in the chiropractic news world, is that the AMA is now trying to prevent the "non-discrimination" clause being enforced in the new national health program. This clause requires insurance companies to pay for care rendered by any physician, including D.C.s, without discrimination, i.e., reducing the pay schedule or banning treatments not "approved by modern medicine." Successful healing techniques now used by many holistic practitioners, would be paid for on equal measure. Currently, chelation and many

(Continued on next page)

other powerful healing aids are not allowed to be used or subsequently paid for, if the medical hierarchy finds them competitive, effective and a threat to their sacrosanct status in this country. This ongoing criminal threat must be stopped!

Does political medicine have the right to ban any kind of care but their own? Should they be arrested and indicted for preventing more effective care for so many conditions we can help? We also had an epileptic patient who was a good example in this commentary. He had 4 seizures per day all of his life. He got adjustments and went 2 ½ years before he had another one. Is that not better than being on Dilantin™ and Phenobarbital™ for life?

A study on blood pressure was done at the Chicago University Medical School involving chiropractic care and high blood pressure. The results? Twenty-five (25) HBP patients received 1 cervical spine adjustment from a D.C., and 35 days later each patient had blood pressure reductions greater than 2 drugs would have accomplished! The statistician could not believe the results, so he rechecked the data. He then certified that the data were correct.

A friend, and previously employed Naturopath in my office, was attending one of my seminars for CEU credits. He told me that he practiced "medicine" since that was what his patient's wanted. I asked him if he cured any:

Migraines
High blood pressure
Epilepsy
Colitis
Arthritis

He answered "no," and elaborated, " I just put them on drugs for the rest of their lives." All of those ailments, if the patient is cooperative, respond quite well to our type of alternative care, consistently. Political medicine, Big Pharma and the FDA, however, prohibit the populace from hearing such good news. Such a diatribe is criminal and illegal. They are committing Crimes Against Humanity and the practice should be stopped!

Another patient of recent date, was on Prilosec™ for 2 years. The bottle clearly states 14 day usage at a maximum. Her M.D. kept her on the drug for 2 years, and she became virtually unable to walk due to a severe case of "ataxic gait," a clear, side-effect of Prilosec™. While out walking with her husband one evening, he had to carry her back home! Her readings on a hair mineral analysis suggested imminent death. Upon my questioning, she mentioned Prilosec™, and remarked "that is not a medication," and then she was advised to stop taking it. Her doctor took her off of the drug, over 1½ months. Her walking returned to normal.

Here is another concern. It is true, it actually happened in my office, but will be hard to believe by many. I was 24 years old, new in practice in 1963, and got the addresses and names of 38 patients with a neurological disease, from the local chapter of the charity that raises money to "find a cure for that ailment." Naively, I admit, I wrote them letters suggesting they try adjustments for their condition. The next day, a representative of that "charity" entered my office and, queried me about soliciting his clientele. I said that I had done so. He then said "If you continue to do so, we will run articles and advertisements in the media, branding you as a "quack." And then he added " My wife goes to a chiropractor, Dr. -------, in Globe, Arizona, and I think that chiropractic care could help these patients. But if you get them well, we would have no reason to raise money!"

Many of these so called non-profit, fund raising "charities" have been exposed, but people naively give them millions of dollars. Evidence seems predominant that most disease fighting charities are in fact, "money making frauds." Using some of the many cures that offer promise in and out of modern medicine, are apparently thwarted for fear of the collapse of the financial windfall of political medicine. God help the physician that finds a cure for cancer. His fate will no doubt be imprisonment, financial ruin and likely becoming a citizen of Mexico, where most of the developers of alternatives to chemotherapy and radiation cancer "cures," end up.

At 24 years of age, already afraid of political medicine, he scared me "half to death." Of course, my charitable contributions, of which there have been many, are never given to MDA, Susan Komen, March of Dimes and the like. I was amused to see a charity for "Ileitis and Colitis" advertising on the television for a short time. Those conditions must not have sold very well even to the gullible public. Next they'll predict a cure for "constipation, if you contribute money."

Every so often, someone mentions that an average of patient deaths by medical mistakes in hospitals, exceeds the crashes of 2, Boeing 747 aircraft, per week. If a patient should die under my care, I would end up in prison in all probability. It was recently determined that there are 14 prescription drugs written in each year, per person, including man, woman and child. Another

(Continued on page 135)

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recent statement stated that each year, there are enough tablets of tranquilizers administered to patients, to provide 1 pill to each American for 30 days! That is 300 million tablets times 30. My calculator just broke trying to multiply those unbelievable figures! How many people get well on Valium™ and Zoloft™. I would tend to believe the answer is none! Sometimes they feel better, but when they get off the drug, the condition returns, often with a vengeance! Then the drug goes into the water supply, and is passed on to anyone who drinks the water!

The birth control pill has the same result. Filling the water supplies with hormones! And then we wonder why there are so many more gay citizens! There are said to be 75,000 gay soldiers in our armed services! A recent report, described a 1 month old baby girl that experienced vaginal bleeding. One (1) month old! The doctor examined the child and stated it was a menstrual period. Young girls, 9 and 10 years of age are developing breasts and having periods at those ages. The only country in the world that has more deaths of children at birth, than this country, is Latvia! What a sterling record of good health, modern medicine has given us!

I have witnessed prescription records of 25 drugs for many patients in nursing homes. This alone would be considered quackery, should another profession do likewise.

I recently suffered with a knee meniscal tear and went for an MRI. The receptionist said that if Medicare did not pay the bill, they would charge me a total of 395.00, inclusive of the radiologist assessment. The bill they submitted to Medicare was 4,200.00! Another patient was sent for an abdominal ultrasound assessment. The receptionist said that if the patient used their insurance coverage, the charge would be 1,100.00. If they billed the insurance company themselves, the bill would be 375.00, **but if they paid cash, it was 117.00!**

A neighbor of mine was an extreme alcoholic, and at 84 years of age, suffering from dementia. He was found on the street, having collapsed, and ended up in a nursing care center. His cognition has improved, but not sufficient to live alone. His care involves a Tylenol™ twice daily, a diet that is typical and virtually nutritionally worthless, and a short walk daily. He is to stay in the center till the end of Medicare's pay period, then be transferred to a nursing home.

The chances of his getting well? Zero. Under alternative care, spinal adjustments, IV chelation, vitamin C IV infusions, nutrition of an organic supplement nature, and other therapies, he would very likely return to a reasonably capable lifestyle. Maybe he would enjoy several more years of cognizance for himself and family, but certainly not with "modern medicine." Vitamin therapy to the typical medical physician is 2 tablets of Centrum per day. What a fraud! A friend of mine was going blind due to macular degeneration. His doctor told him he would get all the vitamins and minerals he needed per day with one Centrum tablet. He thus avoided going for Vitamin C infusion, IV and oral, plus chelation. He is now totally blind. And we are branded as quacks!

A colleague of mine, who is both a D.C. and an M.D., had his D.C. father come into his office, slurring his words and exhibiting a partial paralysis of his lips. My friend told him he should be admitted to the hospital. The father stated his reluctance to do so, and demanded a cervical spine adjustment. One-half hour later he was normal! Would he have needed more care? Probably. Would he get good care under medicine? Absolutely not! A carotid artery stent might be of temporary value, but nothing would be done to prevent a further stroke, or further stenosing. A low cholesterol diet would not enhance his well being, and that recommendation alone is becoming more and more suspect of medicinal value.

Tell these stories of better ways to treat illness to an M.D. The standard reply is: "Show me the studies that prove your treatments are effective." That has become a joke in itself. Evidence is strong that most studies are rigged to support drug use. They are paid for by vested interests and made to look as though they are potential life savers. Tell the patient that has just recovered from a severe illness through chiropractic adjustments or other alternative treatment that there are no studies to support his getting well! I suspect that he would laugh heartily at such a lame and tainted answer.

Vertigo in most cases, responds well to simple spinal adjustments. Certainly at low cost as well. Go to a standard medical practitioner with this syndrome, and you can expect Doppler of the cervical spine, MRI of the brain, possibly a CT scan, complete blood and urine work-up, drug application -possibly for life- and a bill over $10,000.

Which is better? Simple spinal adjustments, or $10,000 worth of tests, drugs for perhaps a life time, no improvement, and even surgery which may be just a fruitless?

(Continued on next page)

Medical first aid can be effective, for the most part. Certainly there are medical doctors that are honest, and sincerely interested in patient welfare of what ever nature is available. If I have a skull fracture, break a leg, rupture my appendix, or require necessary surgery, I want the best medical man around. We do have the best in some fields, in the entire world. Appropriate medical care is often miraculous. The millions of citizens that are denied care even with impending death, is horrific. Alternative therapy by other practitioners is extremely effective, should be used when indicated, and then in addition, the care "outside the medical fraternity," is frequently not paid for by insurance coverage.

Preventative medicine would appear to be primitive, although the standard that is acceptable is written in stone! It is akin to sitting in ambulances below a cliff, waiting for the next person to jump off. Nothing is done to prevent the jump. "Don't eat high cholesterol foods, eat a balanced diet (which does not work due to serious nutritional deficiencies) and don't take any more than 90mg of Vitamin C per day." Unbelievable advice by some professionals who claim to be experts. It is insane, it is bankrupting our economy, failing in the field of health, and it has to change!

About the Author

William B. Risley, Sr. is one of the founders of the First Chiropractic Network of offices, post-graduate faculty for several chiropractic colleges, an author of 12 textbooks, and a long time lecturer on Doppler, Plethysmography, Hospital Protocol, Nutrition and Hair Mineral Analysis. He has compiled 30 peer review publications, and he is a consultant and educator for Analytical Research Laboratories, in Phoenix, Arizona. Sample sections of his latest textbook of 522 pages, is available at Chirobooks.com.
◆

HOMOCYSTEINE AND LEPTIN AS INDEPENDENT DRIVERS OF INFLAMMATION AND PAIN

An Individual Case Study

by: Robert W. Smith, DC, DABCI

Homocysteine has been determined to have a physiological role in damaging the endothelial lining of arteies, acting as a contributor to coronary arterial diease (CAD) and peripheral arterial disease (PAD).[1,2,3,4,5] Leptin has dual functions in the human body both as a cytokine[6] and a hormone which is produced in significant amounts by both white and brown adipocytes. It has been suggested that Leptin also contributes to coronary arterial disease (CAD), peripheral arterial disease (PAD),[6, 7, 8] is linked to triglyceride[9] levels stored in individual adipocytes and is associated in a concentration-dependent manner with the inflammation induction of IL-6[10, 11] and IL 1β.[12] The changes in food production and delivery have increased the introduction of nutrient depleted foods[13] and connected to caloric augmented foods. These factors have contributed to promoting the inflammatory cytokine pathways[14, 15, 16] which have contributed exponentially to the obesity and inflammatory status of a large segment of the world's population.[17] This has lead to the increase in the drivers of elevated Leptin and Homocysteine.

Chief Complaint:

The patient presented 12/21/11, 2011 with Doc providing assurances that "this was the guy he wanted to see." That finished, Doc left the patient in my care. *Authors Note: My patient was originally introduced at the wedding of his son to Doc's daughter. Doc is a retired chiropractor which I have known for over 30 years. He was in the original group of chiropractors to receive licensure in the state of Louisiana, is a lifelong friend, and extraordinarily gifted at spinal adjustments.*

The patient is a 59 year old Caucasian male who described himself during the initial examination as "a man getting his affairs in order, before using his life insurance policies." He stated "I'm here because Doc gave me some of that monolaurin acid stuff that he had got from you and it had helped me a little with my breathing problem."

The patient was taking a beta blocker for his high blood pressure. He stated that "he had been feeling terrible over the last few months since his doctor had increased his medication for lipids (Lipitor®) to 40 mg per day and 81 mg aspirin per day." The patient reported having mental faculty problems and the inability to remember river water, river bank details and land marks on the Mississippi River like he "used to be able to do in the foggy weather conditions." [His ability to remember and formulate orders is critical to his job performance as the Captain of a high-capacity tugboat on the lower Mississippi River. His job responsibilities include the transport of multiple barges from the New Orleans, LA. area (the location of the only 2 river traffic lights on the Mississippi River from the mouth of the river at the Gulf of Mexico up to St. Louis, MO.) Weather conditions can vary from sunny to battling 60 mph head winds on a river running backwards, due to storm surge, at night, with 6 feet white caps. He describes his job as "a fantastic adrenaline adventure which requires you to be on the top of your game."]

Despite his bilateral lung infection and constant physical pain, he stated he loved his job as a river boat captain, and "wanted to keep working until I'm forced to retire at 70 years of age." He now thought that goal unlikely. He had come to my office because the "stuff" Doc had given him, worked.

The patient medical history:

Approximately 20 years ago he had two lower back surgeries. The first surgery was related to an accident involving falling 20 feet through an open cargo hole in the deck of his boat. This fall resulted in a ruptured disc at the level of L-5, S-1 spine. The second surgery was approximately 6 weeks later, when still convalescing at

*(*See charts next page, *article continued on page 140)*

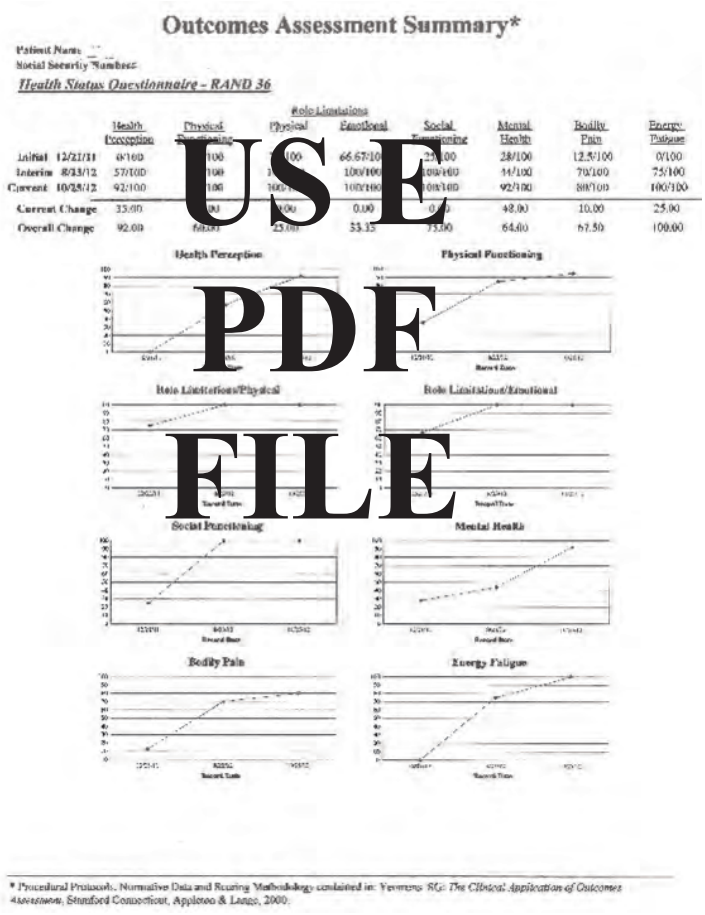
Laboratory Comparisons

	REFERENCE RANGES	FUNCTIONAL RANGE	DATE REPORTED	DATE REPORTED	DATE REPORTED	DATE REPORTED
Gender: MALE			12/21/2011	04/20/2012	9/10/2012	10/25/2012
AGE: 59						
HEIGHT:			69 1/2 in	69 1/2	69 1/2	70 in
WEIGHT:			231 lb.	230	218	215.5
BLOOD PRESSURE:			**R128/106 L136/104**	**R130/96 L126/90**	**R138/88 L136/84**	**R118/88 L110/80**
BMI CHART:			34	34	31.7	31.5
BMI CALCULATED:			33.6	33.6	32.2	30.9
% BODY FAT			32.5	32.5	31.6	31.1
PULSE RATE:			88	98	77	84
WAIST SIZE:		<32 inch	45 1/4 in 115 cm	45.25in.	41	42
F.V.C. (Average of 3 Trials)	< 3Lmale/ <2female	<4male/ <3female	4.4			
LIPID PANEL						
CHOLESTEROL, TOTAL	140-200	<140*150.-180	141		223	180
HDL CHOLESTEROL	> or = 46	55.-120.	60		53	52
TRIGYLERIDES	<150	80.-115.	96		284	95
LDL-CHOLESTEROL	<130	50.-110.	62		113	109
CHOL/HDLC RATIO	< or = 5.0		2.4		4.2	3.5
BILIRUBIN, DIRECT	< or = .2-1.	0.50-0.70	0.1			
GGT	3.-65.	1.0-36.0	31	24		
LD	120-250	120.-160.	183			
MAGNESIUM	1.5-2.5	2.20-2.60	2			
PHOSPHATE (AS PHOSPHORUS)	2.5-4.5	3.40-4.0	3.5	3.4		
URIC ACID	2.5-7.0	4.0-6.0	8	8.7	8.1	
Fe TOTAL Fe BNDING CAP.						
IRON, TOTAL	50-160	85.0-120.0	113	131		
IRON BINDING CAPCITY	250-450		422	403		
% SATURATION	15-50%		27	33		
COMP. METABOLIC PANEL W/ EGFR						
GLUCOSE	65-99	85.0-100.	93	108		
UREA NITROGEN (BUN)	7-25	13.0-18.0	17	20		
CREATININE	0.6-1.18	0.6-1.0	1	1.24		
Egfr NON-AFR. AMERICAN	> or = 60		83	63		
eGFR AFRICIAN AMERICAN	> or = 60		96	73		
BUN/CREATININE RATIO	6-22	13.0-17.0				
SODIUM	135-146	140.0-144.	141	138		
POTASSIUM	3.5-5.3	4.0-4.6	5.4	4.9		
CHLORIDE	96-110	100.0-106.	107	104		
CARBON DIOXIDE	21-33	26.-28.0	25	21		
CALCIUM	8.6-10.2	9.7-10.1	10.1	10.1		
PROTEIN, TOTAL	6.2-8.3	7.1-7.6	7.4	7.8		
ALBUMIN	3.6-5.1	Albumin 3.5< w/ <1500 *4.0-4.5	5	5		
GLOBULIN	2.2-3.7	2.8-3.5	2.4	2.8		
ALBUMIN/GLOBULIN RATION	1.0-2.1	<1.0*1.2-1.6	2.1	1.8		
BILIRUBIN, TOTAL	0.2-1.0	0.5-0.7	0.5	0.7		
ALKALINE PHOSPHATASE	33-130	60.-80.	82	65		
AST(SGOT)	10-35	18.-26.	38	33		
ALT(SGPT)	6-40	18.-26.	45	37		
FRUCTOSAMINE	190-270	200-260	208			
FIBRONOGEN ACTIVITY, CLAUSS	175-425	200-350	267	330	336	
LEPTIN	< or = 30	Age/sex	24.7	13.5		
SED RATE BY MOD. WESTERGREN		0.0-8.0	4			

(Continued on next page)

	REFERENCE RANGES	FUNCTIONAL RANGES	DATE REPORTED	DATE REPORTED	DATE REPORTED	DATE REPORTED
CBC INCLUDING DIFF/PLT						
WHITE BLOOD CELL COUNT	3.8-10.8	5.0-8.0	8.3	6.9	7.7	
RED BLOOD CELL COUNT	3.80-5.10	4.5-5.5	4.95	5.23	5.01	
HEMOGLOBIN	11.7-15.5	14.-15.	16.3	17.1	16.2	
HEMATOCRIT	35.0-45.0%	40.-47.	48.2	50.5	47.8	
MCV	80.0-99.0	85.-97.	97.5	96.1	95.3	
MCH	27.0-32.5	27.-31.0	33	32.6	32.2	
MCHC	32.0-36.0	32.-34.0	33.9	33.9	33.9	
RDW	11.0-15.0%		14.2	14	15	
PLATELET COUNT	150-400	175.-250.0	175	180	192	
ABSOLUTE NEUTROPHILS	1500-7800		5046	3781	4828	
ABSOLUTE LYMPHOCYTES	850-3900	Albumin 3.5< w/ <1500	2590	2374	2318	
ABSOLUTE MONOCYTES	200-950		523	545	424	
ABSOLUTE EOSINOPHILS	15-500		108	179	100	
ABSOLUTE BASOPHILS	0-200		33	21	31	
NEUTROPHILS	50.-70.%	55.-65.%	60.8	54.8	62.7	
LYMPHOCYTES	20.-40.%	25.-40.%	31.2	34.4	30.1	
MONOCYTES	1.0-8.5%	3.0-7.0%	6.3	7.9	5.5	
EOSINOPHILS	1.0-1.0%	0.0-4.0%	1.3	2.6	1.3	
BASOPHILS	0.0-1.0%	0.0-0.0%	0.4	0.3	0.4	
CARDIO CRP	age dependent	<1.9	0.5			1
HOMOCYSTEINIE, CARDIOVASC.	<10.4	<7.4	12.9	9.8	7.9	
FERRITIN	20-288	25.0-225.	347	326		
T3 UPTAKE	22-35%	36.-40.	28	28		
T4 TOTAL						
T4 THYROXINE, TOTAL	5.5-13.0	7.0-9.0	7.1	7.1		
(T7)FREE T4 INDEX	2.10-4.7	2.6-3.6	2	2		
TSH, 3RD GENERATION	0.40-4.5	1.0-1.5	2.18	1.66		
Free T3(PG/DL)	240-420.	230-40				
Free T3(PG/mL)	2.4-4.2	2.3-4.2				
Free T4	0.8-1.8					
VITAMIN D, 25-HYDROXY	0.40-4.50					
VITAMIN D, 25-OH, TOTAL	30-100ng/mL	22		42		
VITAMIN D, 25-OH, D3	11-32					
VITAMIN D, 25-OH, D2	3.4-5.7	4.0-5.4				
HEMOGLOBIN A1c						
URINALYSIS, REFLEX						
COLOR			yellow	dk yellow		
APPEARANCE			clear	clear		
SPECIFIC GRAVITY			1.020	1.025		
PH			6.0	6		
GLUCOSE			n	n		
BILIRUBIN			n	n		
KETONES			n	n		
OCCULT BLOOD			n	n		
PROTEIN			n	n		
NITRITE			n	n		
LEUKOCYTE ESTERASE			n	n		
WBC			n			
RBC			n			
SQUAMOUS EPITH. CELLS			n			
BACTERIA			n			
HYALINE CAST			n			
Yeast			n			
Indican			2+	2+		
ABO GROUP AND RH TYPE						
ABO GROUP			O+			
RH TYPE						

(Continued on next page)



* Procedural Protocols, Normative Data and Scoring Methodology contained in: Ware, JE: *The Clinical Application of Outcomes Assessment*, Stamford Connecticut, Appleton & Lange, 2000.

home from the first surgery. While still on pain medication he walked outside his house and fell backwards onto steps. This fall resulted in paralysis from the waist down. He was air-evacuated to a trauma center, where after heroic efforts to surgically correct his injuries he eventually regained use of his legs. *Significant* atrophy of the muscle mass of both legs continue today. At the same time of the injuries he had fractured the right femur and injured the right knee. Pins and surgical screws had been used to set the fracture sights. His weight has been a constant battle since his lower back and leg injuries.

An automobile accident 18 years ago required surgical correction of the damaged C-5, C-6 disc. He reports residual arm and neck pain from this injury. He also reports that pain has been a consistent component of his life since the accidents.

In October 2009, a liver scan indicated he had early stage non-alcoholic fatty liver disease (NAFLD).

At Christmas 2009, he had a MI, was transported to the hospital and had stents implanted. He was also diagnosed with mixed-hyperlipidemia and started on Plavix® (he did not remember the exact dosage).

He has a chronic history of digestive problems for which he has self-medicated with OTC's.

In October 2011, he was diagnosed with a lung infection, bilaterally. Initially, he was treated with several rounds of antibiotics and prednisone, which proved ineffective in resolving the infection.

Family History:

His father died at age 65 due to a heart attack. His mother died at age 73 due to complication of her diabetes. He has one brother age 58 that has no noted health issues.

History and Review of Systems:

His work cycle is a split-shift with two periods of 6 hours per day off to eat and sleep. He eats two meals a day, with snacks in the wheel house while on duty. He gets between 3-5 hours of sleep twice per day, due to nature of this work schedule. He no longer smokes cigarettes, but is exposed to second-hand smoke in the wheel house. He reports using smokeless tobacco (a little less than one/half can per day) for 35 years.

Meals are prepared by the galley cook and typically include a meat, white rice, canned vegetables and processed foods. Drinking of alcoholic beverages is limited; to only when he is at home, off from his job on the boat. The patient reported frequently having periods of constipation and upset stomach symptoms. He craves salt. Other surgical history included two inguinal hernia 20 years ago and a tonsillectomy as a child.

Since starting the higher doses of Lipitor®, he noticed his memory is not as sharp and he feels more stressed while working. He likes to work out on his Gazelle when home, but does not have the energy to exercise. He stated he can breathe okay but it just does not feel right and his chest hurts. He had been taking the yeast medication his doctor gave him, but it didn't seem to work as well as the stuff Doc had given him.

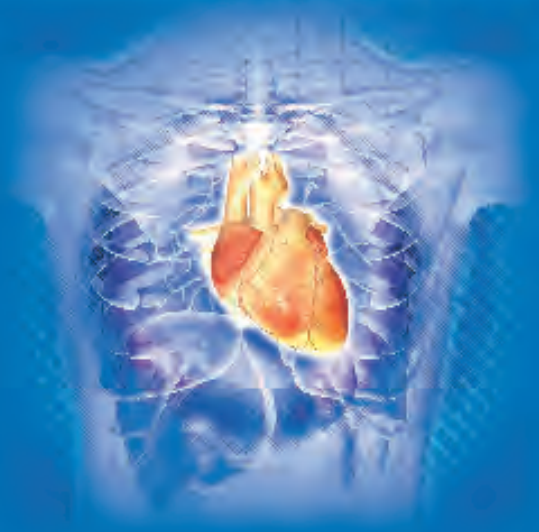
Clinical physical exam and laboratory:

The physical examination findings completed, but not found on the attached table include: Today, his demeanor is that of a very tired, frail 59 year male. Eyes: He wears reading glasses for his farsightedness and stigmatism, EOMI, and PEERLA, ENT no abnormal. Chest inspection and auscultation: Normal adult chest shape, slight wheezing only with expiratory

(Continued on page 142)

COMPREHENSIVE SELECTION OF SUPPLEMENTS TO SUPPORT

CARDIOVASCULAR HEALTH



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- Increase Exercise Tolerance
- Decrease Anxiety
- Promote Relaxation
- Improve Cholesterol Levels
- Benefit Arterial Hypertension
- Aid Mitochondrial Function
- Prevent Oxidation
- Decrease Inflammation

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breathing noted bilaterally and a non-productive cough. He denies any shortness of breath and his FVC is 4.4 liters. The heart sounds were normal, as was the rate and rhythm. No jugular pulse wave or carotid artery pulse was visible on inspection.

His bowel sounds were normal and he had no abdominal tenderness in all 4 quadrants. The nail beds of upper extremities are normal, as is the hair distribution. His lower extremities appeared like bird legs, disproportionate to his upper body torso. This is due to his back injuries from 20 years prior and the residual muscle atrophy. The skin on his legs, below the knee had a tissue-paper appearance and was devoid of any hair. The posterior tibial pulse is palpable bilaterally. His vitals and other pertinent data are in the Table on pages 138-139.

Based on his history and my examination findings, laboratory tests were requisitioned and are outlined on the table, pages 138-39. In addition, the results are arranged on the Table for comparison with the follow-up labs and the date as indicated**.** **(**See Table) His results of the scores on the Rand-36 findings are on the comparison Graph. (See Graph)

Treatment Plan and Goals:

During the initial report on January 12, 2012, he was provided a notebook which included copy of his clinical laboratory results, his physical examination results, my interpretation of his clinical and laboratory results and my written recommendations. This patient specific notebook also included citations and articles related to his specific laboratory results, with what dietary and supplementation factors were being used to alter his abnormal laboratory findings.

The patient was also provided a copy of the citation for Statin Stupid with a reference to certain phenotypes being susceptible to cholesterol levels dropping from glia cell manufacturing of cholesterol and its subsequent impact on memory.

The treatment of this patient included the following nutritional and enzyme supplements, dietary and lifestyle modification.

Nutritional and Dietary Program:

He was instructed on a modified Leptin resistant diet which included carbohydrates limited to those found in vegetables only. No fruits or starches were allowed. He was instructed to avoid all high linoleic oils (corn, soybean, canola and margarine). He was encouraged to use olive oil (omega 9) and a limited amount of butter if need for flavor.

A discussion about food labels was also included. He was instructed to eliminate as many as possible excitotoxins products including MSG and NutraSweet®. Corn syrup sweetened foods and beverages were also discussed with the goal of no consumption.

He was placed on Vitamin D3 20,000 IU per day.

He was placed on Vitamin C, taurine and pancrealipase (Beta TCP®, Biotics Research) with additional source supplementation of Vitamin C, mixed ascorbates powder to bowel tolerance.

Due to his elevated Cardiac Homocysteine levels, he was placed on B-complex (Extress Super® 50's, The Key Company), Choline and Inositol® 350mg each (The Key Company) two each with every meal.

He was placed on Omega 3 lipid and GLA-Omega 6 supplementation, Opti-PUFA™ (Nutrition Pure and Simple) three gel caps with AM and PM meal.

Lifestyle changes:

Elimination of the exposure to environmental toxic burden factors were reviewed with the patient: BPA from canned goods and plastic bottles, second hand smoke from wheel house, Teflon off-gassing from cookware, cadmium-minimize exposure from exhaust fume from diesel engines entering the wheel house, mercury, microwave popcorn (frequent snack on the boat), and all nicotine (including smokeless tobacco use and etc.).

A simple exercise program with the goal of weight reduction and increased cardiovascular output was discussed also. As physiological changes were noted at regular examination points, the exercise frequency and intensity was increased.

The patient completely revised his methods of cooking meals while at home.

Initial Treatment Goal:

The initial treatment goal was to resolve the lung infection and respiratory issues. This goal was achieved

(Continued on page 144)

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by gradually increasing his monolaurin intake from 2 scoops per day to 4 and placed on A-caro-25 (Avoiding Vitamin A directly due to his compromised hepatic history and status) The Key Company 25,000 IU gel caps 4 with AM and PM meal (total 200,000 IU).

After 3 weeks on this protocol, during his initial follow -up visit he reported he was feeling better, breathing easier with his lungs and chest having stopped hurting. His chest films had been clear since November 7, 2011, which was 3 weeks after he had started the monolaurin that Doc had given him. Now with the added supplements the chest pain and wheezing had resolved.

The following supplements have been adjusted as his clinical status has changed: Phosphatidylserine 100mg bid, Glutathione 300mg. Co Q^{10} Ubiquinone 30mg tid, High Gama tocopherol and mixed tocopherols 1000 IU bid, KappArrest® (Biotics Research) 2 tablets with each meal, Acetyl-L-Carnitine 300mg. tid, **Argizyme®** 2 tab. with meal AM and PM.

The following supplements and/or changes were added after the laboratory results of 10/09/2012: Muco-polysaccharides® (The Key Company[18,19,20,21,22]) 500mg bid with meal AM and PM.

Niacinamide 500mg with each meal.

Discussion:

At his initial report we discussed his laboratory results in detail and I explained to him the significance of Homocysteine and Leptin as it relates to inflammation. In addition, we discussed the lifestyle and diet modifications necessary to reduce his physiological response to Homocysteine and Leptin.

He was committed to changing his laboratory values, now that he understood the significance and impact to his health. The patient elected to discontinue his prescription medications; I encouraged him to discuss this with his prescribing physician.

Over the following ten month period his capacity to exercise returned. Subsequently, the circulatory capillary beds were also restored which was evident by the return of hair on the anterior lower legs and the great toes bilaterally. The muscle mass of the triceps surae and anterior tibialis muscles were visibly enlarged.
Encouraged by his progress and improving laboratory results, he wanted a more vigorous exercise program. It evolved, as his stamina has returned, to include the addition of exercise equipment (stationary bicycle and elliptical trainer) in the control room which he employs at any sign of fatigue or mental lethargy.

His commitment to changing his life is inspiring. He indicated that his legs had not been this size since before his fall through the cargo hole over 20 years ago. As of his last visit on October 25, 2012, he is truly shown remarkable progress, not only as evidenced by his physical examination, laboratory findings, but also his resulting self-assessment by Rand-36. The skin on his lower extremities appears normal and he presents as a vibrant, healthy, energetic man.

Comment:

This patient's final laboratory findings indicate that he does not warrant medication. As Dr. Cessna pointed out, "getting the relevant clinical data is necessary, so a patient has a score card to measure the progress beyond I just feel good," it allows them to be in control. It motivates the doctor to see what is really possible with the patient. The patient is empowered to be captain of their own destiny.

About the Author

Dr. Robert W. Smith is a 1984 graduate of Logan (College) University St. Louis MO and has maintained a private practice in Baton Rouge, LA for 28 years. He obtained diplomate of the American Board of Chiropractic Internist in 1991. He is married to Maria and has a nine year old daughter Grace.

Thank you Drs. Cessna, Strehl and Kessinger for your vision of chiropractic and chiropractors as a profession dedicated to HEALTHCARE.

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A NATURAL APPROACH TO THE ATHLETIC PATIENT EXAMINER

by: Robert G. Silverman DC, DACBN, MS, CNS, CCN, CSCS, CIISN, CKTP, CES, DCBCN, HKC

2012 PERFORMANCE RECAP

2012 is coming to a close, and it's been a very busy year so far! We had the Olympics, the Presidential election, etc., but from the wellness and athletic standpoint, many leading sports performance breakthroughs in information as well. Here are some of the recaps, from exercise to movement to nutritional supplements.

Omega-3 oxidizes easily outside the body; leads to myth that fish oil generates free radicals in the body. German study proved the opposite, dietary omega-3s iodize the body's antioxidant status via genetic effects. *Prior Dutch study proved omega-3 also exert anti-inflammatory effects on human genes.*

Vitamin D:
Fat soluble vitamin
Higher body fat requires more vitamin D
Helps lower C-reactive protein
Raises testosterone
Improves body composition
Better overall health

- The fascial system is the largest system in the body and is the only system that touches every other system. Fascial is the saran-wrap of the body and intertwined within all muscles.
- Rule of thumb – the earlier a musculoskeletal injury is treated, the sooner healing can begin. An untreated injury can easily slide from "acute" into "sub-acute," and even into "chronic."
- Spine Magazine, June 2012 concluded that "immediate pain reduction can be achieved by altering muscle activation and movement patterns." This confirms that sports training should emphasize muscle pattern movement and not muscle isolation exercises.
- Kettlebell swings may improve back health, strengthen glute muscles, stretch hip flexors, develop back extension endurance and reinforces the idea of "bracing" the core.
- HIT is it. High Intensity Training (HIT) is the form of exercise that produces the best performance results to date. CrossFit is the best form of HIT. It's defined as a constantly varied, high intensity functional movement with the stated goal of improving fitness.
- For those experiencing plantar fasciitis, avoid wearing flip-flops.
- The Journal of International Society of Sports Nutrition in September concluded that coconut water was no more effective for hydration than a normal sports drink or water.
- Whey protein preserves muscle mass in older adults.
- Weight training reduces abdominal fat and inflammation. Abdominal fat typically increases by 300 percent between ages 25 and 65, while muscle mass decreases by 20 percent between the ages of 40 and 60.
- Kettlebell exercises may help improve your balance and reaction time. The training helps your muscles contract rapidly, which is an essential part of maintaining balance.
- Low-level laser therapy is the sports modality of the 21st century. It allows for the increase of range of motion and decrease pain in the cervical and shoulder regions.
- New literature confirms that the iliotibial band is extremely rigid and resistant to stretch. Therefore, stretch the glute max and TFL.
- Traditional medicine considers turmeric to be one of the most healing herbs on earth.
- What enhances performance prevents injury.
- Dynamic warm-up stimulates fast twitch fibers.
- Slow stretches inhibits fast twitch.
- Finally, musculoskeletal system is the primary force of life.

DETOXIFICATION FOR ATHLETES: THE KEY TO WINNING PERFORMANCE

Want to give your athletes that possible 4th quarter winning edge, that extra ingredient that makes the difference between winning and losing the game? Or just possibly give them the edge in life's health.

One of the most dangerous culprits that affect an athlete's ability to perform at an optimum level also happens to be the most elusive. Environmental toxins are elusive given their almost intrinsic nature; for instance, we don't often think too much about the packaging where the foods come from, or the air that we breathe in, or the shampoo that we wash our hair

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with. "70% to 90% of disease risks are probably due to the differences in the environments," *Science 22 October 2010: Vol. 330 no. 6003 pp. 460-461.*

Environmental toxins come in two categories; chemicals and metals. They are accumulated from taking medications, food preservatives, exposure to pesticides, air pollutants and other harmful, hostile toxic environments and are trapped in the fatty tissue of the human body. These toxins come from a variety of sources but the initial exposure actually begins while a baby is still in the womb!

What are these toxins affecting the athletes?

CDC's Fourth National Report on Human Exposure to Environmental Chemicals has reported that over 212 chemicals have been found present in the blood and urine of most Americans. The six most widespread chemicals found in particular are: 1) polybrominated diphenyl ethers (PDE's) that is used as a flame retardant; 2) Bisphenol A (BPA) that is found in plastic products (e.g. bottled water); 3) PFOA, which is in non -stick cookwares; 4) acrylamide in items cooked at high temperatures e.g. French fries, fried chicken, and coffee; 5) mercury - found in seafood; and 6) MTBE – exposure from second-hand smoke.

Research data has shown that there is a strong relationship between urine concentrations of Bisphenol A, type-2 diabetes and reduced testosterone levels.

So how toxic are we?

Our liver serves as our body's natural detoxification process. It supports the body's ability to excrete toxins once they have been neutralized, thus reducing the chance that they will re-circulate and be stored in the body. In a toxic body, as athletes start to exercise and sweat, these accumulated toxins get released back into the blood stream. Both health and performance are impaired as these toxins reactivate in the body.

Symptoms and Conditions/Diseases of Excessive Toxic Burden

The common symptoms experienced indicating excessive toxins are: Fatigue, Lethargy, Weakness, Depression, Headaches, Irritability, Cognitive Problem (e.g. brain fog, memory problems), Difficulty Concentrating, Generalized Muscle Aches and Decreased athletic performance.

All these symptoms affect an athletes' ability to train and focus, not to mention play at game day.

The body's detoxification pathways in a healthy liver…

- **Step 1:** Toxins, which are fat soluble, are transported from the intestine to the liver. These include metabolic end products, chemical pollutants and contaminants, micro-organisms, food additives, drugs/medications, and alcohol.
- **Step 2:** In the liver, toxins undergo Phase 1 detoxification to neutralize certain toxins.
- **Step 3:** The remainder of the unneutralized toxins move into Phase 2 detoxification, which then transforms the remainder into water soluble compounds.
- **Step 4:** Newly transformed toxins are then transported to either the kidneys where they are excreted in the urine or to the gall bladder where they are excreted via the feces.

vs. the body's detoxification pathways in an unhealthy liver

In an unhealthy liver, toxins are unable to be detoxified at the speed that they are brought to the liver. In these cases, toxins build up and re-circulate in the blood, contributing to long-term poor health. These unneutralized, fat-soluble toxins can be stored in the body tissues such as fat, brain and nervous system causing systemic symptoms and decreased athletic performance.

FEED A CONCUSSION: SPEEDY NUTRIENTS OFFER HOPES OF BETTER HEALING

A concussion is a traumatic brain injury that may result in a bad headache, altered levels of alertness, or unconsciousness. It temporarily interferes with the way your brain works. Concussions are on the rise in high school sports, and it can occur in any sport or reaction activities. So, all coaches and parents need to have an athlete evaluated when they have any kinds of blows to the head.

The first priority nutritionally would be to help heal the current injury – in this case, the part of the brain injured by the concussion. By speeding the healing process, the overall pain and the duration of pain is reduced, thereby lessening the amount of substance P (associated with inflammatory process and pain) released within the thalamus of the brain. And also to decrease the activation of the brain's immune cells, which are the source of inflammatory cytokines.

Reviewed studies reveals that the speedy intake of the below macro and micro nutrients should be made common practice "almost immediately" – both right

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after a concussion and for two weeks following the concussion.

Initially after Injury

- Protein: Helps heel the injury. Take 1g/kg of body weight, starting within a day of the injury.
- Creatine: Helps give the brain an intense and immediate hit of energy needed to help cells heal right after an injury.
- Reducing inflammatory damage to the brain:
  a) DHA: an omega 3 fish oil, which is an essential brain lipid that is critical for maximal brain health and protection.
  b) Grape seed extract, bromelain, quercetin, ginger.
  c) Poly phenols – turmeric, resveratrol.
- Antioxidants – alpha lipoic acid: Protects both the fatty and water soluble part of the cells.
- Choline: Critical for brain development.
- Vitamin D: All the known benefits, and now considered neuro-protective as well.
- Zinc: Enzyme for central nervous system (CNS) health. The brain is a part of the CNS.
- Magnesium: One of the best weapons against delayed brain injury. Magnesium is one of these incredible elements that play a role in a number of biological processes. It is a co-factor in over 300 metabolic reactions, reduces inflammation, elevates glutathione in cells (cell's major antioxidant). Low magnesium in the brain has also been shown to greatly increase the vulnerability of the brain to injury.

If symptoms persist past a reasonable amount of healing time, then it is likely the brain (thalamus) is struggling. This means the ratio of substance P to BDNF (Brain Derived Neurotrophic Factor). Substance P is in excess and there is not enough BBNF.

Nutrients to Decrease Substance P

- Continue with natural anti-inflammatory
- Continue with magnesium
- Acetyl-1-carnitine: helps with brain function

Build Up BDNF - DHA, Zinc, Turmeric
Using these nutrition and nutritional supplements during healing is going to enhance the healing response and attempt to prevent adverse changes in the brain.

A New York state concussion bill was signed on September 2011. The legislation will prevent students from returning to play until they have been without symptoms for at least one day and have been cleared by a physician.

VITAMIN D: THE "D" STANDS FOR *DEFINITELY IMPORTANT*

2012 News on vitamin D (The European Male Ageing Study, Jan. 2012):

- Helps lower c-reactive protein
- Raises testosterone
- Improves body composition
- Decreases VAT
- Enhances better overall health

Nearly 3 out 4 adults and teens may be deficient in vitamin D. Deficiency risk increases with age, skin pigment, and limited sun exposure. Current daily intake recommendations (400 IU to 600 IU) are primarily based on bone health, and it has been suggested that higher levels may be necessary to maintain optimum physical functions, muscle strength, and other health functions.

Vitamin D could be called "hormone D" due to its powerful effects. It regulates more than 2,000 of the 30,000 genes in the human body. We know that the major and most well-known function of vitamin D is to maintain the calcium and phosphorous balance, and to promote bone mineralization. However, its role has expanded to cover medical and health conditions such as muscle function, falls, immunity, glucose balance, and cardiovascular diseases.

Vitamin D is sometimes referred to as the "sunshine" vitamin because it is created in the skin. However, when you live on the East coast, and remain indoors all day, fifteen minutes of sunshine is real hard to come by; in fact, we need sunlight when the UV index is greater than 3. This occurs daily within the tropics, during the spring and summer seasons within the temperate regions, and almost never within the arctic circles. Therefore, supplementation is the answer.

Vitamin D's influence on key biological functions is vital to one's health and well-being and is essential to bone and cartilage health. A deficiency in vitamin D can increase the risk of osteoporosis, inflammatory bowel disease, type-I and type-II diabetes, metabolic syndrome, and hypertension.

Studies have also shown that the use of vitamin D has shown positive effects on osteoarthritis (OA), such as helping prevent the breakdown of cartilage. Low intake of vitamin D may be linked to greater risk of hip osteoarthritis in older women and OA-related joint changes in both men and women.

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Vitamin D may also protect against heart attack. Men classified as deficient in vitamin D are about 2 ½ times more likely to have a heart attack than those with higher levels of the vitamin. Researchers compared those deficient in vitamin D (no more than 15 ng/mL of blood) to men in the lower-end of the normal range (at least 30 ng/mL of the blood). Higher levels of the vitamin reduce the risk of CVD and could help protect against Crohn's disease and other inflammatory bowel disease. More importantly, a substantial study presented at the annual meeting of Pediatric Academic Societies in Vancouver, BC in early 2010 concluded that raising the amount of vitamin D intake daily is not only safe for pregnant women, but may reduce risk of complications and made women less likely to go into labor early, give birth prematurely or develop infections. However, as with all supplements and medications, pregnant women should not change their intake without consulting their physicians. In another study that was published in Spine magazine in 2003, vitamin D (subjects were given either 5000 IU or 10,000 IU daily) was credited with relieving chronic low-back pain. Yet another study from the University of Minnesota concluded that when combined with a reduced-calorie diet, supplementation with vitamin D helps promote increased weight loss.

Vitamin D is not only helpful in obtaining optimum health, It can also benefit the active individual as well. A recent study in adolescent females found that vitamin D was significantly associated with muscle power and force in adolescent girls and is, therefore, important for promoting muscle and strength. In May, 2009, a publication in *Medical Science Sports Exercise* concluded that "vitamin D may improve athletic performance in vitamin D deficient athletes. The Chicago Black Hawks have become the first modern sports team to supplement with vitamin D.

Unfortunately, good sources of vitamin D may be hard to find. Our bodies manufacture vitamin D_3 when skin is exposed to the sun's ultraviolet-B rays—which can be blocked by both windows and sunscreen. Furthermore, vitamin D is only found naturally in a few foods (e.g., fish, eggs, mushrooms), which is why products like milk are vitamin D-fortified, sometimes with the less absorbable vitamin D_2 form. Dietary supplements are often recommended, but they vary in quality and may be made from vitamin D_2 or D_3. D_3 supplements may be 3 times more effective than D_2 at increasing vitamin D levels in the body. The supplement delivery form and manufacture may also influence absorption potential, so it's just as important with this "basic" vitamin to seek higher quality for maximum benefits.

To ensure these benefits, I recommend the combination of vitamin D with soy isoflavones. This combination is designed to support optimal metabolism of vitamin D to its most active form. My recommendation is for 2000 IU per day.

Finally, it is essential that individuals assess their vitamin D levels via a blood test. What is considered normal range is 32 – 100 ng/mL. My recommendation is that optimum levels should be 50 – 60 ng/mL, and high-functioning athletes should be between 60 – 80 ng/mL. Please follow my recommendation of 2000 IU per day and evaluate your vitamin D levels.

About the Author

Dr. Robert G. Silverman graduated Magna cum Laude from the University of Bridgeport, College of Chiropractic. He is a Certified Nutrition Specialist, Certified Clinical Nutritionist, has a Masters of Science in Human Nutrition, is a Certified Strength and Conditioning Specialist, and is a Diplomate with the American Clinical Board of Nutrition. Dr. Silverman is also a Certified Sports Nutritionist from The International Society of Sports Nutrition, and is a Certified Kinesio Taping Practitioner, a NASM-certified Corrective Exercise Specialist and has a Diplomate with the Chiropractic Board of Clinical Nutrition. Dr. Silverman is also a HardStyle Kettlebell Certified (HKC) instructor, and also a certified provider for Functional Movement Screen. He specializes in the diagnosis of joint pain and soft-tissue management and its treatments with an innovative, established and well-researched approach to non-surgical care, while incorporating proper nutrition protocols. He is board certified in Active Release Technique® (ART® - Upper Extremity, Lower Extremity, Spine, Nerve Entrapment, Biomechanics, Ironman® Provider, Masters Certified), Graston Technique®, and cold-laser therapy. Dr. Silverman is a nationally known speaker, and has published numerous articles on treating and preventing sports injury, joint pain, and on nutrition, in addition to giving seminars on injury-related preventions, treatments and nutrition for various organizations and Fortune 500 corporations. He is a post-graduate instructor at the University of Bridgeport, College of Chiropractic. Dr. Silverman also serves as a chiropractor and sports injury consultant for basketball players, professional wrestling organizations, local, collegiate, and professional sports teams, professional tri-athletes, body-builders, martial artists and acted as the team doctor for the Amino Vital pro-cycling team. He serves as a member of the medical team of New York City's Triathlons and Marathons, Westchester Triathlon, multiple international Iron Man events, and local sports venues. Dr. Silverman appears on Westchester's channel 76 – Beyond the Game, as a sports injury consultant, and as a pain-management and nutrition consultant on radio 1460 AM, and as a health expert on 1230 AM "Ask the Expert". He has his own syndicated talk show on Westchester's channel 75 called "Get Healthy w/ Dr. Rob". In addition, Dr. Silverman was also a featured guest on Westchester's Channel 12 as their Nutritional Weight Loss expert and was also chosen as the national spokesperson for the Vitamin Ester-C.

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4	**October 6-7, 2012**	**Session 4** - GI Upper & Lower (Previously Sessions 24-25)	Dr. Delilah Anderson
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6	**December 1-2, 2012**	**Session 6** - Additional Blood Tests/Tumor Markers (Previously Session 7)	Dr. Bill Kleber
7	**January 5-6, 2013**	**Session 7** - Blood Interpretation Workshop (Previously Session 8)	Dr. Bill Kleber
8	**February 16-17, 2013**	**Session 8** - Immune Function and Autoimmune Disease (Previously 17-18)	Dr Ben Bowers
9	**March 1, 2, 3, 2013**	**Session 9 & 10** - Endocrinology ***New Session 24-Hour***	Dr. James Blumenthal
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15	**October 12-13, 2013**	**Session 17** - Diagnostic Training for Cardio-Respiratory Disorders (Previously Session 21)	Dr. Delilah Anderson
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17	**December 7-8, 2013**	**Session 19** - Pharmacognosy (Previously Session 11)	Dr. Dan Richardson
18	**January 4-5, 2014**	**Session 20** - Pharma Reactions ***New Session* -**	Dr. Dan Richardson
19	**February 8-9, 2014**	**Session 21** - Infectious Disease, Emergency Disorders & Advanced Diagnostics ***New Session***	Dr. Ben Bowers
20	**March 8-9, 2014**	**Session 22** - Geriatrics & Mental Health (Previously Session 15)	Dr. Rick Davis
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EDTA CHELATION SAFELY REDUCES LEAD BURDEN IN THE FAMILY PRACTICE SETTING

by: Robert Kessinger, DC

INTRODUCTION:

In this case study, four lead miners sought care in our clinic for the purpose of lowering their blood lead levels. In each of the four cases their blood lead levels were above the acceptable threshold according to the lead mining company adhering to the Missouri Department of Health's established standards. There was a significant reduction of the blood lead levels following a short course of intravenous EDTA chelation.

The blood lead level examination is the gold standard for determining toxic lead overload.[1] It is a useful and affordable examination to determine short term lead exposure. Other measures like the provocative urine challenge test using chelation as the provoking agent and X-ray fluoroscopy are used to assess chronic lead exposure and total body lead burden. X-ray fluoroscopy measures the hard tissue accumulation fairly accurately but is not practical for the clinical setting.[2,3] The chelation provocative challenge is the preferred method in the clinic setting due to its ease of utility. It is more directly related to soft tissue accumulation, but used to surmise total body lead burden.

Lead exposure occurs primarily through inhalation and ingestion. Occupational exposure generally is through inhalation. Between 30 and 40 percent of inhaled lead is absorbed into the bloodstream.[2,4] GI absorption is dependent on nutritional status and age. Infants have the greatest level of absorption and can be up to 50% while adults can be 10-15%. Iron has a blocking effect on gut absorption of lead and iron deficiency is consistent with higher levels of lead absorption. Calcium supplementation shows some protection from GI absorption of lead. Magnesium, phosphate, alcohol, and dietary fat have also been shown to decrease GI absorption of lead. Inorganic lead which includes things like food, water, paint, toys, vinyl products, etc. is minimally absorbed through the skin while tetraethyl - or alkyl-lead found in leaded gas absorbs readily through the skin.[2] Inorganic lead does not readily absorb through the skin, however occupationally exposed workers should be diligent to wash hands before eating or consuming smokeless tobacco.

Once lead hits the body it is not altered into another form for elimination. Upon initial exposure 99% is bound to Red Blood Cells. Lead has a short half-life in the blood. Within 30 to 35 days it is then dispersed into the soft tissues, including; liver, kidneys, aorta, brain, lungs, and spleen. After several weeks lead moves into the bones and teeth. Due to the slow turn-over of bone, the half-life can be decades. Over time, low level exposures accumulate in the bones. In adults, approximately 94% of the lead is found in the bones while in children 73% of the lead is found in the bone.[5] Children with lead toxicity can be more severe in presentation than adults partially because of more storage in soft tissues and because developing tissues can have more pronounced presentations in developmental problems. Adults can have low level lead burden causing a wide variety of symptoms relating to chronic health issues. According to a 2007 report on "Toxicological Profile for Lead" from the U.S. Department of Health and Human Services about 99% of the lead exposure will leave the body within a number of weeks through waste in adults. In the case of repeated exposure adults will accumulate more lead in the body. Only 32% of the lead will leave children's bodies over that same time period.

Our bone lead burden on average is between 500-1000 times higher than pre-industrial measurements made from pre-industrial skeletal remains.[6] According to a report in the New England Journal of Medicine pre-industrial blood lead levels of Native Americans living inside what we now know as the U.S. borders 700-1000 years ago had blood lead levels estimated at 0.016 ug/Dl.[7] Individuals living in remote regions of the Himalayas, with no known lead exposures average between 50-200 times higher blood lead levels.
Lead exposures come from occupational, lead paint,

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leaded gas and lead gas residue, some vinyl blinds, candies and toys from countries outside the U.S., Ayurvedic remedies, industrial atmosphere and the water supply among other sources. Water supplies are a major source of lead exposure. According to the EPA,[8] "Lead is rarely found in source water, but enters tap water through corrosion of plumbing materials. Homes built before 1986 are more likely to have lead pipes, fixtures and solder. However, new homes are also at risk: even legally "lead-free" plumbing may contain up to 8 percent lead. The most common problem is with brass or chrome -plated brass faucets and fixtures which can leach significant amounts of lead into the water, especially hot water."

There are a wide variety of symptoms, disorders and diseases that can be related to an elevated total body lead burden. People with occupational risk for lead exposure should be tested frequently for blood lead levels and appropriate strategies for removal be employed as soon as possible to reduce short term as well as long term total body lead burdens. In this case we discuss four patients working in the lead mining industry who had successful outcomes of lowering blood lead levels following the administration of Disodium EDTA chelation intravenously, consisting of 12 cc's disodium EDTA in a 250 cc bag.

CASE REPORT:

Case 1

Case 1 is a 36 year old male lead miner who entered our clinic on December 12, 2012, with blood lead levels of 28 mcg/dL. He as well complained of minor multiple joint pain. Following 1 chelation session and 2 days, the patient's blood lead levels dropped to 21 mcg/dL and he reported feeling overall better, including no joint pain. Following the fourth chelation and 10 days, his blood lead level was 17 mcg/dL.

Case 2

Case 2 is a 61 year old male lead miner who entered our clinic on January 18, 2012, with blood lead levels of 29 mcg/dL. The patient received three chelation sessions using the same protocol as with case 1. After one week the blood lead levels dropped to 19 mcg/DL. The patient had another acute exposure to occupational lead dust right after the first series of chelation treatments were administered and returned to the clinic for more EDTA chelation. His initial blood lead level on February 17, 2012, was 25 mcg/dL. Following one week and two chelation sessions following the same protocol, this patient's blood lead levels dropped once again to 19 mcg/dL.

Case 3

Case 3 is a 43 year old male lead miner who entered our clinic on November 8, 2010, with blood lead levels of 41 mcg/dL. He, as-well, complained of moderate to severe shoulder pain. Following 4 chelation sessions and 11 days using the same protocols as described above the patient's blood lead levels dropped to 23 mcg/dL and he reported much improved shoulder pain.

Case 3 had received a letter from his employer in regards to his initial blood lead levels, which prompted his visit in our office, "your results meets or exceeds the 25 mcg/dL reporting level as required by the Missouri Department of Health." He, along with the other 3 cases, initially exceeded the allowable limits set by the Missouri Department of Health and the standard accepted by this company.

Case 4

Case 4 is a 27 year old male lead miner who entered our clinic on July 18, 2012, with blood lead levels of 27 mcg/dL. The patient received three sessions of chelation dripped for an average of 1 ½ hours in one week. The blood lead levels were checked one week later on July 25, 2012, and had dropped to 22 mcg/dL.

DISCUSSION:

Total Body Lead Burden

Both allopathic and alternative health care practitioners use chelation although the purpose of application can differ. EDTA chelation is approved by the Food and Drug Administration (FDA) for treatment of lead and heavy metal poisoning. The CDC, EPA and the Agency for Toxic Substances and Disease Registry agree there is no toxic threshold for lead. Therefore there is no level of detectable lead in the body which does no harm. Alternative practitioners have found a much broader application of EDTA chelation going after lead and other toxic heavy metals more aggressively. The literature is full of examples pointing to the deleterious effects on the body even at lower lead levels. Over the past 30 years what has been considered safe continues to lower. What is considered a "safe level" today will likely lower in the future as more information on the ill total body effects of heavy metal toxicity become more widespread. Anything that can lower total body lead burden is desirable. Alternative practitioners are not merely trying to combat acute lead toxicity but recognize the importance of reducing even low level total body lead burden through various chelation strategies including EDTA.

The effects of an acute toxic exposure of lead have been

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well documented. Severe toxicity can produce frank paralysis, severe lethargy, abdominal colic, and coma. Earliest symptoms of lead toxicity can be diffuse muscle weakness, general fatigue/lethargy, muscle pain, joint pain, unusual taste in mouth, headache, insomnia, irritability, diminished libido, tremulousness, weight loss of 10 pounds or more without known cause and personality changes. Symptoms of chronic exposure can be depression, incoordination, numbness and tingling in the extremities, constipation, sleep difficulty, inability to concentrate, impotence, abdominal pain/cramping and nausea/vomiting.[2]

In children, the signs of lead toxicity can be growth failure, language delay, behavioral changes, hyperactivity, increased intracranial pressure, abdominal pain and aminoaciduria. For adults and children, the signs of lead toxicity are blood lead over 10 mcg/dL, hypertension, decreased nerve conduction velocity, hyper-reflexia, tremors, upper extremity weakness, forearm extensor weakness (wrist drop), gingival lead lines (purple-blue lines within gingival tissue), buccal lead staining, papilledema, increased intracranial pressure and macular gray stains.

Total body lead burden can affect the nervous system,[2,9,10] kidneys,[11-15] cardiovascular system,[16-18] as well as vitamin D production.[19,20] Workers who are exposed through various industries related to lead inhalation demonstrate an increased frequency of still births, miscarriages, and spontaneous abortions, reduced sperm counts and motility, decreased fertility, hypospermia, increased rates of teratospermia, and decreased libido.[2,21-23] Women with lead-exposed male partners have higher rates of miscarriage and children of lead-exposed workers have increased rates of congenital epilepsy and cardiovascular disease.

Furthermore, lead has been recently upgraded from the status of possible human carcinogen to a probably carcinogen by the International Agency for Research on Cancer (IARC).

Risk for cataracts is increased over 2 ½ times in men with the highest tibia bone lead levels compared to those with the lowest levels of tibia lead. Significant levels of lead and lower zinc levels are found in the ocular lens in individuals with cataracts. An increased ratio of lead to zinc in the lens was related to decreased lens transparency.[24,25] Occult lead intoxication is related to hypertension and renal failure[26] and the disappearance of immune deposits in a patient with renal impairment due to low-level lead toxicity has now been demonstrated by renal biopsy before and after EDTA chelation.[27] 4 out of 6 patients treated for renal failure who developed gout *de novo* has underlying plumbism.[28]

Lead lowers brain energy levels and lower levels of lead can speed up brain aging.[29,30] The immune system is perhaps more vulnerable than the other body systems to low levels of lead and can lead to increased incidence of infectious disease and neoplasia.[31]

The effects of low levels of total body lead burden are multiple and have not been fully explored or recognized.

Intravenous EDTA Chelation

EDTA was introduced in the U.S. in 1948 as a means of treatment for industrial workers suffering from lead poisoning in a battery factory. Just after this successful application, the U.S. Navy supported chelation therapy for sailors who had lead overload due to lead based paint applied to ships and docks (and anything that didn't move). Chelation therapy has remained the treatment-of-choice for lead poisoning, even in children with toxic accumulations of lead in their bodies.[32,33]

Chelation has many and wide ranging positive clinical applications and has shown itself to be safe. A proper history and examination with basic blood and urine labs is sufficient for the experienced physician to insure safety and monitor progress. Contrary to the critics chelation actually improves kidney function.[34-36] Research consisting of kidney function tests performed on hundreds of consecutive patients indicates kidney function improvements. Properly monitoring patients with kidney damage is important. In some cases chelation performed slower and less frequently may be warranted. It has been reported that patients with severe kidney damage have either come off of dialysis, delayed the need for dialysis or completely averted the need due to kidney function improvements. Even so, there are some severe kidney problems that should not receive chelation.[32]

The most commonly used form of chelation by alternative health providers is EDTA (ethylene diamine tetraacetic acid), an amino acid, administered intravenously. EDTA bonds with unbalanced metals in the body and quickly redistributes them in a healthy way, or carries them away in the urine. Abnormally situated nutritional metals, such as iron, along with toxic elements such as lead, mercury and aluminum are easily removed by EDTA chelation therapy. Normally present minerals and trace elements which are essential

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for health are more tightly bound within the body and can be maintained with a properly balanced nutritional supplement.

EDTA enters the body and leaves the body in the same form. Along the way, it will attract various heavy metals and bind them for excretion, primarily through the urine. The most common known toxic heavy metals that lead to fatigue and illness are iron, lead, cadmium, and mercury. Some evidence illustrates another mechanism for the positive effects of EDTA. EDTA has an affinity for trace metals in higher concentrations in specific areas of the body and will transfer trace metals to areas of the body with less concentration. Unhealthy or diseased tissue accumulates more trace metals and any trace metal in an excess amount is toxic. A series of chelation sessions is important to rid the body of excess trace metals and even toxic heavy metals that have been transferred in the body but not yet excreted.

In the early 1950's, clinical evidence pointed to the benefits of chelation for cardiovascular health. Studies were performed and many conditions improved that were related to poor circulation, such as; angina, memory loss, hearing, increased vigor, eye sight, increased energy, intermittent claudication, etc. Consistent improvements were reported for most patients and the central key appeared to be circulation.

The first published articles, to this author's knowledge, demonstrating positive effects of chelation with circulation began in 1955.[37] Several articles have been published since including a retrospective study with 470 patients demonstrates overwhelming improvements in myocardial ischemia and intermittent claudication. This Hancke & Flytlie study also detailed improvements in other measures, such as, general well-being, work capacity, energy/initiative, vertigo, memory, hearing, visual sense and their need for medication dropped.[38] Improving circulation affords the ability to help a wide range of health issues.

There are debates as to the exact mechanism of why chelation is effective for cardiovascular health and circulation within the group of doctors practicing intravenous chelation, but there is little debate of its effectiveness with those physicians. Originally it was thought that EDTA pulled calcium out of the plaques and somehow melted the plaques as a result. That has been an incorrect assumption leading to misconnection of the importance and utility of EDTA.[32,39]

Olwin was one of the first to postulate that improved circulation through EDTA chelation was likely do to removal of lead.[40] A commonly held theory today has to do with reduction of free radical and oxidative stress.[41,42] There are likely other issues that have not yet been discovered and even issues that have such as reducing lead amounts improves the production of nitric oxide, an important factor in endothelial health. Lead blocks zinc from a key enzymatic reaction that converts arginine to nitric oxide.

After spending nearly 30 million dollars on TACT (Trial to Assess Chelation Therapy) the National Heart, Lung, and Blood Institute from the National Institutes of Health made the following statement, November 4, 2012, after results of TACT:

> Between 2002 and 2007, use of chelation therapy grew by nearly 68 percent to 111,000 people – despite there being no evidence as to its safety or efficacy. Given that so many people are trying chelation therapy, it was imperative that a large-scale and very rigorous study by undertaken. The NHLBI is proud to have helped fund such a project
>
> Preliminary results, which will be released during the American Heart Association's 2012 Scientific Sessions, found that a chelation regimen is safe in the context of a clinical trial and suggest that there may be benefits in some patients with coronary heart disease. However, further research is needed, including replication of the results and research to determine whether the intervention can be safely and reliably delivered in a general practice setting, before chelation can be considered as a potential mainstream treatment option.

The authors of the TACT Study reported that when the measures of effectiveness (endpoints written into the study's design) were combined the recipients of chelation in the study had slightly (statistically significant) better outcomes. What is compelling is those study participants who had diabetes and received the chelation versus placebo constituted the vast majority of positive responders. The findings suggest chelation as being more effective in patient with diabetes and cardiovascular issues.

Critics of the study complain that although chelation was deemed safe, the results were not strong enough to abandon traditional care and that it could falsely give people hope and steer them away from drugs and surgery.
The TACT study is an example of how EDTA

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chelation for vascular health alone can be a detour from understanding its full impact. Over the past 10 to 15 years, the role of inflammation in cardiovascular disease[43-47] highlights the mechanism for EDTA benefits possibly being related to reducing free radicals and oxidative stress. It further illustrates EDTA should not be used solely as a magic bullet, but as a part of an overall strategy for reducing inflammation when dealing with cardiovascular health.

Looking narrowly at vascular health and circulation issues surrounding EDTA chelation can prevent us from seeing a much broader application and a more full understanding of the importance of chelation. The function of EDTA chelation is centrally to remove toxic heavy metals, including lead even at low levels, from the human body. Dr. Gordon effectively argues that when we narrowly focus on the circulation issue, albeit it is very significant, we can miss the big picture of the importance of reducing total body heavy metal burden and its impact on the entire physiology.[39] Especially in light of understanding there is no safe level established for these toxic heavy metals, including lead.

Dr. Gordon further states, "Unfortunately, today's excessive focus on the potential benefits to patients suffering symptomatic cardiovascular disease has significantly, stifled the utilization of EDTA and other chelators in other conditions where I believe it should be routinely utilized, at least as an adjunct to other therapies. These indications include many common and difficult to treat conditions from acute rheumatoid arthritis and psoriasis, to cirrhosis of the liver and cancer, where clinical benefits have been described. I hope to refocus attention to the metal binding activity of chelating agents in general, so that this treatment may soon achieve its proper recognition as an adjunctive therapy in the management of many common health conditions."[39]

There are numerous conditions that have shown positive effects from EDTA chelation[32] including brain health,[48] renal function diseases,[49] macular degeneration,[50] arthritis[51] and arteriosclerosis[52,53] to name a few. Blood lead and cadmium, at levels well below current safety standards, were associated with an increased prevalence of peripheral arterial disease in the general U.S. population.[54] Other benefits of chelation from the removal of toxic heavy metals is seen in improved enzymatic reactions including, but not limited to, enzymes important for the conversion of arginine into nitric oxide as well as important enzymatic reaction in brain chemistry for the production of neurotransmitters. Lead can impair the maturation of erythrocytes by blocking pyrimidine 5'-nucleotase resulting in decreased red blood cell counts and eventually anemia. EDTA is well known as an anti-coagulant which is desirable for circulation and may inhibit the activation of NF Kappa B. Any organ or tissue the lead settles in can have an adverse reaction on receptors and enzymatic reactions. There is a theory that heavy metals collect around the outer membrane level of the mitochondria and can significantly impede the ability to produce ATP and therefore cause mitochondrial dysfunction.[55,56] This can be a factor in improved energy levels reported through chelation.

The potential for EDTA chelation and other strategies that reduce the total body heavy metal burden is great and needs further study.

CONCLUSION:

This is a small sample study that agrees with many other studies that have shown EDTA chelation to be effective in the short term reduction of blood lead levels. Lead moves from the blood to the soft tissues in 30 to 35 days and from the soft tissues to the bones in several weeks. Lead exposure accumulates in the body even though we no longer see it in the blood. It does not lay dormant in the bone, but is released at various times and can create a low level lead burden in the blood and soft tissues throughout life.

In the usual practice of EDTA chelation a mineral supplementation is necessary to safeguard from losing important minerals. We have found clinically that a proper diet, lifestyle, specific examinations including targeted laboratory investigation is essential when dealing with various health conditions and employing IV EDTA chelation as a strategy.

In regards to lead, there is not an established safe level. It is important for workers with occupations that include chronic exposure to lead to be monitored frequently with blood lead levels and appropriate amounts of EDTA chelation be administered to reduce the short term as well as the long term effects of total body lead burden.

Due to the short half-life of lead in the blood it is imperative to not rely solely on blood lead levels to determine total body burden. According to this report it is suggested to have a strategy for continual monitoring and reducing of lead burden including EDTA chelation.

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About The Author

Robert Kessinger, DC graduated Logan College of Chiropractic in 1988. He is the founder and director of the Knee Chest Upper Cervical Specific (KCUCS) Chiropractic technique as well as KCUCS World Missions. He is currently president of the Missouri State Chiropractors Association District IV. Dr. Kessinger has been in practice over 20 years in Cape Girardeau, Mo. Dr. Kessinger recently joined the family practice at Kessinger Health & Wellness Diagnostic Centre in Rolla, MO., and co-produces a weekly radio show named "A Healthy Concept" with his fellow chiropractic internist and brother, Andrew "Jay" Kessinger IV, DC, DABCI. Recordings of this show may be downloaded from the website www.drkessinger.com. Email: rkessinger7@gmail.com.

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ARE YOU A GLUTEN-A-HOLIC

An interview with
Michael Wald. MD, DC, DACBN, CDNB, CNS, CCN

A HIDDEN CAUSE OF YOUR HEALTH PROBLEMS

Are your patients Gluten-A-Holics? According to Dr. Michael Wald the answer is an astounding "*yes*" if your patients answer yes to three or more of the questions below. Dr. Wald says, "Addiction to gluten is more common than caffeine addiction – the most commonly consumed addictive substance known to men and women! "You will be hard-pressed to find another food in your diet, except perhaps for sugar, that can so dramatically and horrifically cause loss of quality and length of life."

In fact, Dr. Wald believes that upwards of 90% of Americans are addicted to gluten. "Only recently has gluten gained the attention it deserves as a cause and contributor to fatigue, weight gain, erection issues, loss of libido, hair loss, arthritis, acne, heart disease, diabetes, immune deficiency and even cancer." Dr. Wald says, "The science has been accumulating for years that regular gluten consumption can cause dozens and dozens of different health problems, many of which can go unrecognized by mainstream doctors. Unless we wake up to the gluten problem we may not wake up at all!"

Dr. Wald has been educating doctors and the lay-public for years that gluten is perhaps the most common food-cause of ALL DISEASE! How could this be? "Simple." says Dr. Wald. "Gluten is absolutely everywhere in our food chain. When you eat gluten often your immune system thinks that it is a foreign substance causing an aggressive immune-inflammatory reaction against any number of cells, tissues and organs in your body. Whatever organ is affected by gluten determines the symptoms that a person will experience. Gluten can masquerade, or disguise itself, as virtually any symptom or disease." According to Dr. Wald some specific serious diseases caused by gluten include: lymphoma (cancer), brain shrinkage, heart disease, diabetes, Celiac Disease, obesity, hypothyroidism, migraines, chronic fatigue, arthritis and persistent infections just to name a few. Dr. Wald says, "Your immune system attacks the gluten that you eat by sending the immune system after it, but gets side-tracked attacking the body itself."

Here is what Dr. Wald says you MUST know about gluten, avoiding disease and getting and staying healthy:

"First, know what foods are the major sources of gluten and know which foods have hidden gluten. Second, if you have a persistent, chronic (long-term) health problem(s) consider that gluten could be the hidden cause of it and visit a health care provider familiar with gluten and what it can do and get tested. Third, testing for gluten sensitivity or an incurable form of gluten allergy called Celiac Disease are essentially the same and include HLA-DQ, and HLA-DQ4 genetic testing, transglutaminase, reticulin and gliadin IgA/IgG antibodies. The gastroenterologists, the doctors most people first think of going to, often miss all of the nutritional details and even some of the most important tests.

The main reason gastroenterologist miss many of the problems associated with gluten is because, The GI doctors, although well-intentioned, often don't even recognize when a gluten problem exists because they learned in medical school three basic things about gluten in its obvious form called Celiac disease. People with Celiac Disease often suffer from gas, bloating, diarrhea and a skin condition known as dermatitis herpetiformis. Many patients that I have seen, in fact the vast majority, do not have outright Celiac Disease, or do have Celiac Disease but do not have the commonly expected symptoms, or, have no intestinal problems at all. If you have any health problem at all that no doctor or health care provider has provided you with adequate answers to, then consider gluten as the cause! I have said, and I will say it again that gluten is the masquerader of many varied symptoms and diseases.

Fourth, it's important to include during your testing dozens and dozens vitamin and nutrition tests and screen for many hidden immune problems that gluten often causes.

(Continued on next page)

Here are a few examples of nutritional deficiencies symptoms that can be caused by nutritional problems caused by gluten-caused malabsorption:

Loss of hair -	protein and deficiency
Dry skin -	essential fatty acids, vitamin A, vitamin D deficiency
Eczema -	zinc, vitamin A, essential fatty acid and protein deficiency
High cholesterol-	essential fatty acids, vitamin D and vitamin E deficiency

Fifth, gluten problems cause malabsorption of many nutrients. Removing gluten is just the first step in fixing the problems that gluten may have caused, but may not become obvious for weeks, months or even years after gluten dietary exposure. "That's right! By eating gluten your entire life you are essentially hurting your immune system and becoming addicted to gluten itself."

Here are the most common gluten foods and foods that often contain smaller amounts of gluten:

Most common gluten containing foods:

Durum Wheat	Graham Flour
Kamut	Semolina
Spelt	Triticale
Wheat Bran	Wheat Germ
White Flour	

Below is Dr. Michael Wald Gluten-A-Holic Questionnaire.

1) Do you commonly and frequently experience bloating, oily stools, constipation, diarrhea or flatulence?

2) Muscle and joint pain that is not associated with physical activity?

3) Enlarged neck with or without chronic fatigue?

4) Have you ever had an inflamed or enlarged tongue, duodenal or gastric ulcers or GERD (gastroesophageal reflux disease)?

5) Hormonal problems including infertility, menstrual irregularities and thyroid issues?

6) Do you ever experience depression, anxiety or chronic fatigue?

As you can see, gluten is a pervasive program that has been underappreciated by mainstream medicine for decades…until now.

Go to: www.intmedny.com or www.blooddetective.com for more information on gluten under the Articles and Q & A section of Dr. Wald's website.

About the Author

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NUTRITIONAL INTERVENTIONS FOR NEUROLOGICAL DISORDERS

by: Rachel Olivier, MS, ND, PhD

Deficiencies in both macro and micronutrients are well recognized contributors in both neurological disorders and cognitive dysfunction. By negatively impacting cognition, behavior, achievement, and mitochondrial function, these deficiencies can compound the disorder. Consequently, a number of neurological conditions, including Parkinson's disease, Alzheimer's disease (AD), multiple sclerosis (MS), dementia, attention deficit hyperactivity disorder (ADHD), insomnia, anxiety, and depression can benefit by the correction of these nutritional deficiencies. Although the symptomatology of these disorders varies, all are noted to respond favorably to nutritional intervention, specifically that of antioxidants, including CoQ_{10}, alpha lipoic acid, acetyl-l-carnitine and N-acetylcysteine (NAC). In addition to these, Nootropic compounds, defined as those compounds that aide in improving cognition, memory, intelligence, motivation, attention and concentration,[1] can also be of benefit. Nootropics are thought to function by one of three mechanisms; by altering the availability of the neurochemicals in the brain, by improving the brain's oxygen supply, or via the stimulation of nerve growth.

First coined in 1972 by Dr Corneliu E. Giurgea,[2,3] the word "nootropic" is derived from the Greek words *nous*, meaning "mind," and *trepein*, meaning "to bend." Nootropic compounds are supportive in neurological conditions, including memory and learning.

Giurgea[4] defined these compounds by the following characteristic criteria; 1) ability to enhance cognition, learning and memory, 2) ability to promote the resistance of learned behaviors to conditions which are known to disrupt them (i.e.: hypoxia, electroconvulsive shock), 3) to protect the brain from physical and/or chemical injury, 4) to increase the efficacy of the tonic cortical/subcortical control mechanisms, and 5) that they exhibit extremely low toxicity and have few side effects, i.e. lack the pharmacology of typical psychotropic drugs (motor stimulation, sedation, etc).[5,6]

Phenibut (beta-Phenyl-gamma-aminobutyric acid), originally termed phenigamma, is a naturally occurring GABA derivative, which has both nootropic characteristics and anxiolytic properties. It functions as a GABA-mimetic, primarily at $GABA_B$, and to a lesser extent at $GABA_A$ receptors. It is also noted to stimulate dopamine receptors, and to antagonize β-phenethylamine (PEA).[7] When taken orally it has demonstrated both calming effects and stress reduction. It is typically utilized for increasing sleepiness, and to reduce anxiety or stress, and it does have the capability to cross the blood/brain barrier. In Russia it is widely used for both neurological and psychiatric disorders, as well as to improve sleep, and to relieve tension, anxiety, and fear. It is also used in the therapy of disorders characterized by asthenia (lack or loss of strength and energy), and depression, as well as in post-traumatic stress, stuttering and vestibular disorders.[7] It should not be used in conjunction with alcohol, sedatives, or prescription medication, unless under the strict consultation and guidance of a health-care professional.

In addition to Phenibut, comprehensive antioxidant support, including lipoic acid, NAC, taurine, and L-methionine, in conjunction with, vitamins A, C, and E can serve to offset the biochemical effects of both of neurodegenerative diseases and aging.

Lipoic acid, also known as alpha lipoic acid, may be synthesized de novo (by the body), and is found in various foods, including red meat, spinach, broccoli, potatoes, yams, carrots, beets, and yeast, however absorption from food has not yet been found to result in detectable increases of free lipoic acid in human plasma or cells.[8,9] In contrast, oral administration (≥ 50 mg) has been demonstrated to result in significant, although transient increases in free lipoic acid in plasma and cells.

Alpha-lipoic acid (ALA) is an essential cofactor in the production of energy. It acts as a potent antioxidant and functions as a cofactor in various multienzyme systems involved in the decarboxylation of alpha-keto acids. It also exerts apoptotic effects on tumor cell lines, improves vascular function, and has been demonstrated to improve insulin sensitivity, vasodilation, and polyneuropathy in patients with diabetes mellitus.[10,11] With use, a significant reduction

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in neuropathic symptoms in diabetic patients has been demonstrated.[12] As an added benefit, it has also been demonstrated to significantly decrease the levels of Hemoglobin A1C ($p<0.05$).[13] Additionally, both lipoic acid and dihydrolipoic acid (DHLA), the reduced form of lipoic acid, have metal chelating capabilities.[14] ALA also acts as a lipophilic free radical scavenger, while DHLA has more potent antioxidant effects, including its role in the repair of oxidative damage and regeneration of endogenous antioxidants such as vitamin C, vitamin E, and glutathione.

ALA is an important central nervous system antioxidant because it readily crosses the blood-brain barrier. Its ability to provide activity in both fat- and water-soluble environments allows it to quench free radicals within the cell membrane as well as in the cytosol. In addition to its own potent antioxidant effects, ALA is capable of regenerating glutathione. It is also a cofactor for two key mitochondrial enzymes essential to energy production, the conversion of pyruvate to acetylcoenzyme A (CoA), and the alpha-ketoglutarate dehydrogenase complex, which catalyzes the conversion of alpha-ketoglutarate to succinyl CoA, both important reactions in the citric acid (Kreb's) cycle. In addition, ALA enhances insulin sensitivity and provides important neurological protection from the effects of high blood glucose. Following oral administration, high levels of free lipoic acid can be detected in the serum, and it is this form of lipoic acid that is thought to be most therapeutically important. Free lipoic acid is widely distributed throughout the body, and can be detected in body tissues. The mean plasma half-life is approximately 30 minutes, and dependant upon the isomer and the formula administered, the estimated absolute bioavailability value is in the order of 20% to 38%.

N-acetylcysteine (NAC) is a precursor to glutathione, and is considered the most important cellular antioxidant in the body. Glutathione function diminishes with age, and it is particularly reduced in neurodegenerative states. Oxidative stress and damage induced by free radicals is proposed to be an important mechanism for the cognitive decline associated with both neurodegenerative diseases and normal aging. NAC has been shown to reduce toxin induced TNF-α mRNA expression and associated apoptosis in mice treated with 1-methyl-4-phenyl-1,2,3,6-tetrahydro-pyridine (MPTP),[15] a popular compound used for inducing a model of Parkinson's disease in animals.[16] Other studies in Alzheimer's disease models indicate improvement in cognitive scores given NAC at 50 mg/kg/day for 6 months.[17] In one animal study NAC was demonstrated to completely ameliorate the cytotoxic effect of 4-hydroxynonenal (HNE), a major biologically active product of arachidonic acid peroxidation, which was correlated to a 40% elevation in the level of total glutathoine.[18] In a separate study oral supplementation with NAC was demonstrated to decrease the level of α-synuclein (SNCA) in the brain, and partially protected against loss of dopaminergic terminals associated with overexpression of SNCA.[19] SNCA is a protein thought to be involved in the regulation of dopamine release and transport. Finally, when combined with Alpha Lipoic acid, NAC may also play a functional role in neurological disorders, as this combination has been demonstrated to reverse oxidant stress and prevent cognitive decline.[20]

Taurine is a nonessential amino acid that is biosynthesized from methionine or cysteine.[21] It has numerous functions in the body, including maintenance of the structural integrity of the membrane,[22] and in regulating calcium binding and transport.[23,24] It also acts as an osmolyte[25,26] (a solute used by cells and tissues to maintain cell volume), a neuro-modulator,[27] a neurotransmitter,[28,29,30,31,32,33,34] and a neuroprotector against L-glutamate (L-Glu)-induced neurotoxicity.[35,36] Elevated levels of homocysteine can have a negative effect on the central nervous system. Taurine's role in neurological deficiencies is in part due to its role in the breakdown of homocysteine. Additionally, elevated homocysteine is correlated to cognitive dysfunction in the elderly,[37] including Alzheimer's disease and vascular dementia.[38] According to Wu and Prentice[39] the neuroprotective effects of taurine are summarized by the following series of events: "1) Taurine reduces glutamate-induced elevation of intracellular free calcium ($[Ca2+]_I$) by inhibiting calcium influx from various calcium channels; 2) Taurine inhibits phosphorylation of voltage-gated calcium channels (VGCC) resulting in decrease of calcium influx; 3) Taurine also reduces the release of calcium from the internal storage pools presumably due to inhibition of phospholipase C; and 4) Taurine inhibits glutamate-induced activation …resulting in inhibition of release of cytochrome C and the apoptosis cascade." Consequently, via its prevention of the glutamate-induced activation of calcium, taurine can effectively inhibit apoptosis, and in turn prevent neuronal injury. Additionally, in cell cultures taurine was demonstrated to protect against H_2O_2-induced cell injury by reducing H_2O_2-induced endoplasmic reticulum (ER) stress.[40]

L-Methionine. L-methionine is a sulfur containing essential amino acid. The mineral sulfur functions in

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protecting cells from various forms of pollution, including exhaust fumes and industrial smoke, and it has been demonstrated to decelerate the rate of the cellular aging. In the body L-methionine is converted into the amino acid cysteine, which functions as a precursor to glutathione. Glutathione, as one of the key neutralizers of liver toxins, functions in protecting the liver from the damaging effects of these toxic compounds. Low levels of glutathione, combined with a high level of excitatory amino acids have been associated with a number of neurodegenerative disorders. In addition to these actions, glutathione also functions as a powerful antioxidant, and is essential for both the phase I and phase II liver detoxification systems. Methionine functions to prevent glutathione depletion, and is an excellent metal chelator, which is particularly important with a high toxic burden. Toxin exposure, resulting from various sources, including pollution, preservatives, medication, drugs, and heavy metals, is prevalent in day to day life. Sulfoxidation defects, along with defects in both Phase II glucuronidation and glutathione conjugation have all been identified as risks to neuro-degenerative disease.[41] In Parkinson's disease a profound decrease in brain glutathione has been observed.[42] Additionally, in an assessment of post-mortem prefrontal cortexes of patients with psychiatric conditions, significantly reduced levels of reduced, oxidized, and total GSH levels have been observed, compared to control.[43]

Vitamins A, C and E. Vitamins A, C and E all have antioxidant benefits, both singly and in combination. In those with dementia, and apparently normal nutritional status, a significant deficiency in antioxidants has been recognized.[44,45] Both vitamins A and C function as H^+/electron donors and acceptors in suppressing the formation of free radicals.[46] High intakes of vitamins E and C have been associated with both a lower risk of Alzheimer's disease and less cognitive decline with aging.[47,48,49]

Vitamin C is highly concentrated in the brain, estimated to be in the range of 100-500μmol/L.[50] In patients with dementia, higher plasma vitamin C concentrations were significantly associated with enhanced memory performance.[51,52,53] A significant association between elevated levels of plasma vitamin C and enhanced memory performance in patients with dementia has also been observed.[55] In the Honolulu-Asia Aging Study[54] the combined use of vitamin C and E was demonstrated to result in an 88% reduction in the frequency of subsequent vascular dementia. Protective effects utilizing this combination of vitamins were also demonstrated in the mixed/other dementia group. Since the correlation of increased stress with an increased susceptibility to cellular oxidation is a well recognized factor in the functional decline of the central nervous system, antioxidants such as vitamins C and E may serve to prevent or improve this age-correlated decline.[55,56,57] Vitamin C is also beneficial in elevating glutathione levels, by increasing the rate of glutathione synthesis.[58]

Vitamin C and E are both instrumental in maintaining the immune system via their various actions. These actions include: 1) their ability to enhance lymphocyte proliferation, 2) their ability to diminish the production of the immunosuppressive prostaglandin E2, 3) their inhibition of platelet adhesion, 4) their positive influence on the formation and repair of collagen and muscle, and 5) their ability to support brain function.[59] Subsequently, an increased intake of these vitamins has been positively correlated with a decrease in the development of pathologic disorders.[59] Joseph, et al. demonstrated that daily supplementation with vitamin E (300IU) and vitamin C (1000mg) for 12 consecutive months improved short-term memory, psycho-motor performance, and overall mood.[60] Additionally, as noted above, high tissue Vitamin E levels may be crucial for proper brain function, as early-onset ataxia has been reported with vitamin E deficiency.[61]

In addition to the compounds discussed above, all of the above noted conditions can benefit by maintaining therapeutic blood levels of **vitamin D**. The association between low vitamin D levels and neurological dysfunction, including dementia,[62] AD, cognitive decline[63] and memory impairment[64] is well documented. Additionally, a correlation between vitamin D deficiency and cognitive impairment has been observed in vitamin D deficient elders, with a four -fold greater severity of cognitive impairment in elders severely deficient in vitamin D (25(OH)D <25 nmol/ L), as compared to individuals with adequate levels of vitamin D (≥75 nmol/L).[65]

Like vitamin D, **essential fatty acids** (EFAs), particularly the omega-3 polyunsaturated fatty acids, are positively correlated with a reduced incident of AD and slower cognitive decline with aging.[66,67] It is well documented that the concentration of long-chain polyunsaturated fatty acids are reduced with increasing age.[68] In animals maintained on a low EFA diet for one or more generations, specifically a low-DHA diet, there was a clear correlation to deficits in cognitive function.[69,70,71] Additionally, a high concentration of EFAs, specifically monounsaturated fatty acids, has

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been associated with the maintenance of cognitive function.[72] However, the data is conflicting as a review by the Cochrane Dementia and Cognitive Improvement Group found no association between omega-3 fatty acid intake and the prevention of cognitive decline or dementia among cognitively healthy older people, indicating that "participants in both the intervention and control groups experienced either small or no cognitive declines during the studies."[73] Regardless of this conclusion the consensus among scientists is that omega-3 fatty acids, specifically DHA is protective against Alzheimer's disease and dementia.[74] Additionally, it is a well known fact that EFAs, specifically omega-3 fatty acids, are beneficial in downregulating the inflammatory cascade, thus may have a protective benefit via this mechanism.

The various nutritional components discussed above provide an array of benefits, primarily in the form of antioxidant protection, and in turn offer support for micronutrient deficiencies, specific to neurological diseases. As antioxidant protection can also protect against oxidative stress, this may be another mechanism in which these nutrients positively impact neurological health. Consequently, any one or a combination of these compounds may provide valuable protection against neurodegenerative diseases, and in turn aide in improving the quality of life.

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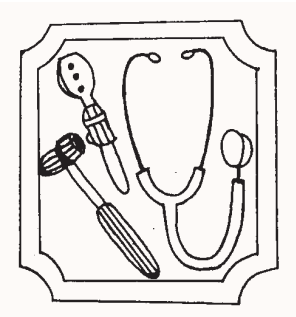

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