

Brain Health | Mental Health | Neurologic Disease

TOWNSENDLETTER.COM

Townsend Letter

TOC p17

The Examiner of
Alternative Medicine

Issue #411 | October 2017

**Nutrition and the
Autonomic Nervous System**

Neural Therapy for Emotional Trauma

**Multisensory Integration for
Autism, Dementia, and Amnesia**

Dental Hygiene and Alzheimer's

James Greenblatt, MD

ADHD, Memory, and OPC Flavonols

\$8.25



TOWNSEND LETTER

#411

BRAIN HEALTH

MENTAL HEALTH

NEUROLOGIC DISEASE

ALTERNATIVE MEDICINE



250 million years
in the making.

ANCIENT
MINERALS®

From the ancient Zechstein seabed, isolated from the forces of modern pollution, Ancient Minerals is a perfectly preserved snapshot of magnesium and trace nutrients formed over 250 million years.

A new way to get magnesium, it is rapidly absorbed by our largest and most efficient organ — our skin.

Soak it in at enviromedica.com/ancientminerals

enviromedica
Furthering the principles of
evolutionary medicine.

Help their brains keep up

Your patients' brains are juggling a lot. Whether they're tracking work, kids, aging parents or home repairs, their mental energy stores are constantly drained. Recommend the patented brain nutrient that's clinically shown to: support healthy brain structure; boost ATP energy levels by 13.6% and improve memory and focus—Cognizin® Citicoline. This pure, allergen-free and vegetarian ingredient also helps protect aging neurons from free radical damage.* To help your patients stay alert, focused and mentally energized, recommend supplements containing clinically tested Cognizin Citicoline.*

Cognizin®

For the evolution of your mind®

Download our HCP fact sheet in the Science section of our website.
www.cognizin.com


Follow Cognizin®



*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Cognizin® is a registered trademark of KYOWA HAKKO BIO CO., LTD. Copyright ©2017 KYOWA HAKKO U.S.A., INC. All Rights Reserved.

Look for Cognizin® Citicoline in these fine brands.



Introducing CurcumRx™

*A natural turmeric complex with over 200 active constituents
vs. 3 to 4 with other professional brands*



- **5 to 6 times greater bioavailability** vs. other professional brands
- Nutrient-dense complex delivers **50% curcuminoid content** PLUS other naturally occurring compounds (protein, polysaccharides, and fiber)



BIOTICS
RESEARCH
CORPORATION

Utilizing "The Best of Science and Nature"
to Create Superior Nutritional Supplements

800-231-5777 • www.bioticsresearch.com



Visit www.SupplementYourSuccess.com
for more information.

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

NEW!
OUR
MOST ADVANCED
PROBIOTIC



CoreBiotic™ Advanced Soil Based Probiotic

ADVANCED, COMPREHENSIVE MICROBIOME SUPPORT*

- **ADVANCED:** Each strain has undergone rigorous genomic studies, guaranteeing accurate specificity, potency and safety
- **COMPREHENSIVE:** Each strain has published research covering intestinal health and beyond.
- **MICROBIOME SUPPORT:** 11 Billion CFU per dose
- **CONVENIENT:** 1 dose per day, no refrigeration, dairy-free, vegan & competitively priced

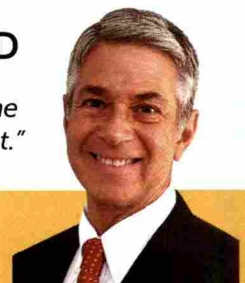


THE IMPORTANCE OF GENOMICALLY SEQUENCED STRAINS

The development of probiotics formulas has moved beyond including general groups of organisms to using specific strains. Older probiotic formulations might list *Bacillus Subtilis* for example without identification of the strain number. Advanced formulations include only those that have been identified by genomic sequencing and have been assigned a specific strain number that is authenticated and registered at an internationally recognized biological materials resource center. Only these strain-specific probiotics have undergone rigorous genomic studies; guaranteeing accurate specificity, potency and safety.

Joseph Burrascano Jr., MD

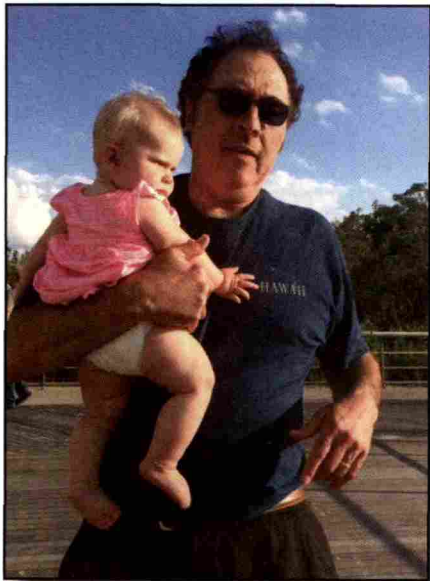
"I am impressed with the formula of CoreBiotic™ - it has all the things I look for when recommending this type of product."



CALL 800.755.3402

Tel: 805.693.1802 • Fax: 805.693.1806 • CustomerService@ResearchedNutritionals.com
www.ResearchedNutritionals.com | Available only through healthcare professionals

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.



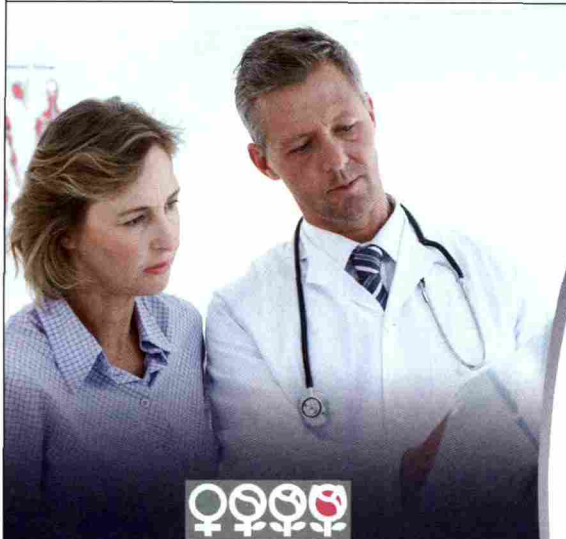
From the Publisher

Homeopathy Controversy

In July, I was asked to give the commencement address at the National University of Natural Medicine. This was its first commencement as NUNM; previously it was the National College of Natural Medicine. Due to time constraints part of the speech was cut out. While a discussion about homeopathy was omitted then, I believe it deserves to see the light of day now:

From an educational perspective, perhaps the most controversial elective offered is a series of courses on homeopathy. Homeopathy is a system of medicine that was named by a German physician, Dr. Samuel Hahnemann, in the early 1800s. The name *homeopathy* literally means "similar suffering." It is based on the Law of Similars, often referred to as "like cures like." What Hahnemann discovered, and what has been essentially known since Hippocrates, is that when a substance – be it plant, mineral, or animal based –

continued on page 8 ►



Women's International Pharmacy

Give us a call

800.279.5708

or fax us at 800.279.8011

Madison, WI • Youngtown, AZ

Custom Compounded Prescriptions for Men and Women

Personalized hormone balance is our speciality and our passion.

- Over 32 years of successful patient outcomes
- Service to all 50 states, D.C., and Puerto Rico
- Peer to Peer consultations with our pharmacists
- Variety of dosage forms offered including capsules, creams, gels, and drops

For more information visit: wip.care/townsend



Advanced NeuroPlus[®]

Brain Nutrition*

90 vegetarian tablets #77010

Six superior brain-boosting nutrients, each with unique benefits*:



NeuroFactor™ coffee fruit extract supports BDNF levels*



Citicoline is a precursor to the key brain nutrient phosphatidylcholine*



Standardized **American ginseng** extract supports memory and alertness*



Neumentix™ spearmint may improve sleep, enhance working memory, and boost cognition*



Lion's mane mushroom strengthens memory and concentration*



NTFactor® phosphoglycolipids support normal membrane potential and ATP energy production*

*This statement has not been evaluated by the U.S. Food and Drug Administration. The product is not intended to diagnose, treat, cure, or prevent any disease.

NeuroFactor™ is manufactured under US and foreign patents, and is a trademark of VDF FutureCeuticals, Inc. American Ginseng is manufactured by Naturex.

Neumentix™ is a trademark of Kemin Industries, Inc. Citicoline is manufactured by Ferrer / Interquim. NTFactor® is protected under Patent #8,877,239.

AllergyResearchGroup[®]
Innovative Nutrition

800.545.9960
info@allergyresearchgroup.com
www.allergyresearchgroup.com



natural partners



Claire Farr: Portrait of a natural nutrition pioneer.

According to all who knew her, Claire Farr was a tireless crusader, genuine humanitarian, and dynamic entrepreneur with a “commitment to excellence for the nutritionally aware.”

In 1969, driven by a personal struggle with severe food allergies and environmental sensitivities, Claire Farr set out on a mission to formulate and manufacture the highest quality, hypoallergenic nutritional supplements possible. As many dedicated entrepreneurs do, Claire set up shop in her own home in Carlsbad, California and Klaire Labs was born.

In her quest to develop a line of nutraceuticals that sensitive individuals could reliably tolerate, Claire initially focused on single ingredient formulations. Unlike most nutritional supplement manufacturers at the time, Claire purchased only pharmaceutical grade raw ingredients selected specifically for maximum purity and bioavailability. She avoided the use of fillers and synthetic ingredients, while focusing on natural and synergistic constituents. The medical community began to take notice.

By this time, demand was growing for environmental, nutrition-focused, and integrative medical practitioners. As such, Claire and her unique products gained the attention and respect of a number of prestigious complementary medicine proponents including: Theron Randolph, MD, Abram Hoffer, MD, PhD, Bernard Rimland, PhD, and William Crook, MD.

Word of consistently reliable outcomes spread, allowing Claire’s home-based start-up to grow into a new manufacturing facility, expanding her capabilities to include bottling and custom formulations. It was not until 1983 that Claire introduced her first probiotic, a product category that ultimately became her most successful. Klaire Labs Ther-Biotic formulations remain a leading professional brand to this day.

In 2004, Klaire Labs was sold to ProThera, Inc. ProThera, Inc. was in turn acquired by Soho Flordis International (SFI) in 2013. SFI’s philosophy to empower healthcare providers with better, natural options aligned quite naturally with that of Claire Farr. Having dedicated their lives’ work to similar goals, the SFI founders represented a renewed commitment to, and a tangible investment in, Claire’s founding principles.

In 2017, SFI USA (comprised of the three originating companies: ProThera, Inc., Klaire Labs, and Complementary Prescriptions) christened a new >75,000 square foot, state-of-the-art manufacturing facility, including expanded scientific and support resources, advanced quality tools, and modernized processes.

Although SFI has acquired several exceptionally discriminating, independent nutraceutical manufacturers across the globe in recent years, shared values are the common thread. In the spirit of honoring the past as we embrace the future, all products manufactured at SFI USA in Reno, Nevada will soon be unified under the Klaire Labs brand and guiding philosophy.

We invite you to meet the new face of Klaire.





Rooted in quality. Inspired by results.

Since 1969, Klaire Labs™ has been dedicated to developing clean, efficacious nutritional supplements to ensure optimal outcomes for even the most sensitive individuals. This enduring commitment to quality is at the root of the unification with our sister brands, ProThera and Complementary Prescriptions. Soon you will see an updated look and new packaging for Klaire Labs: outward symbols of our investment in harmonized processes, a robust new product development pipeline, and our new state-of-the-art cGMP manufacturing facility.



VISIT
MeetKlaire.com

From the Publisher

► *continued from page 4*

evokes illness in a previously healthy individual, that same substance is capable of healing a sick individual but only if the substance is administered in very, very dilute concentration. Homeopathic remedies, and there are many, each have very specific physical and emotional characteristics, and the practice of homeopathic medicine requires that the patient's symptoms must match exactly the homeopathic remedy's characteristics.

Since Hahnemann's publication of the *Organon of the Art of Healing* in 1810, homeopathy has flourished as a system of medicine during the past century in Europe and the US. However, in 1910, Flexner published a report in the US establishing new standards for medical education and practice, essentially paving the way for pharmaceutical medicine, and dismissing homeopathy. At that time, homeopathic medical colleges no longer were authorized funding. Homeopathy lost favor in the US, but it continued to be well accepted in the UK, Germany, France, and especially in India. The Royal Family in the UK favored homeopathic medicine, and London maintained several homeopathic hospitals. Physicians in Germany and France never eliminated their use of homeopathy, administering drugs and homeopathic remedies to patients as appropriate. The acceptance of homeopathy in India was so remarkable that there are now 300,000 homeopathic

practitioners in India with 180 homeopathic medical schools, 7500 homeopathic clinics, and 307 homeopathic hospitals. In the US, homeopathy had a renaissance in the 1970s not the least of which was the education offered by naturopathic medical colleges. However, homeopathy was not limited to naturopathic physicians, as MDs including myself recognized its effectiveness and, particularly, its safety.

However, just as the authors of the Flexner report attempted to do, skeptics have persisted in the AMA and elsewhere disputing the effectiveness of homeopathy. The argument boiled down to how could a remedy that is so dilute, more dilute than what chemistry defines as the number of molecules in a mole (6 x 10 to the 23rd power) diluted 6, 12, 30, or 200 times, how could a substance so dilute have the physical, chemical, or biologic ability to do anything? From a logical point of view, it would appear impossible that such a diluted substance would be able to exert any physiological or biochemical activity, but, in fact, for more than two hundred years there have been countless cases, not one, or two, or one hundred, but countless cases of individuals not only responding to homeopathic treatment, but responding in many cases heroically, dramatically, and without harm. Before I venture into any further science, let me provide a few examples of homeopathy at work. I take liberty here as these cases have been previously reported by Drs. Judyth Reichenberg-Ullman, ND, Robert Ullman, ND, and Richard Moskowitz, MD, in the February/March 2017 issue of the *Townsend Letter*.

continued on page 10 ►

KRYPTOPYRROLE QUANTITATIVE URINE

Mauve Factor | Pyroluria Testing | Pyrroles | KPU | Hydroxyhemopyrrolin-2-one(HPL)

FULL SERVICE LABORATORY Contact for Account Set-up



DHA LABORATORY

🌐 www.kryptopyrrole.com

☎ 847.222.9546

✉ Info@Pyroluriatesting.com

FOLLOW US | [f](#) [t](#) [g+](#) [yt](#) [in](#)

Approach advanced nutrient therapy with the essentials!

Jarrow
FORMULAS

THE PROBIOTIC FOR WOMEN

CLINICALLY TESTED **+** PATENTED

Jarro-Dophilus® Women contains four clinically documented, vaginal probiotic *Lactobacilli* strains: *L. crispatus* LbV 88, *L. jensenii* LbV 116, *L. gasseri* LbV 150N and *L. rhamnosus* LbV 96.*

All four strains were originally isolated from the vaginal tracts of pregnant women and are the dominant *lactobacilli* of healthy vaginal microbiota. They have been clinically tested for efficacy in helping maintain protective, healthy vaginal flora and promote urinary tract health.*

When choosing an effective probiotic, documented strains matter.™

Choose science.

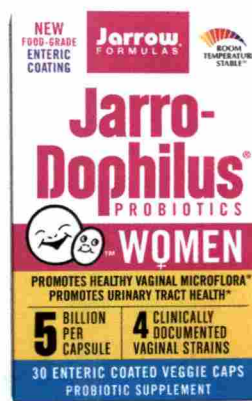
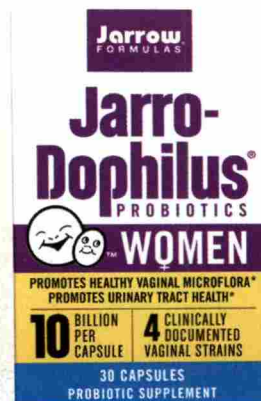
Choose Jarro-Dophilus® Probiotics.

FOUR CLINICALLY DOCUMENTED
LACTOBACILLUS STRAINS*

CONTAINS THE PREVALENT AND DOMINANT
SPECIES OF THE HEALTHY VAGINAL MICROBIOTA*

PROMOTES
URINARY TRACT HEALTH*

PROMOTES
HEALTHY VAGINAL MICROFLORA*



AVAILABLE IN EITHER ENTERIC-COATED (SHELF-STABLE, 5 BILLION)
OR NON-COATED (REQUIRES REFRIGERATION, 10 BILLION) OPTIONS

emerson
ECOLOGICS®
delivering to improve health™
www.emersonecologics.com | 800.654.4432

natural
partners®

Jarro-Dophilus® Women provides the clinically tested Astarte® strains which are protected by European Patent 2,509,610 and U.S. Patent 8,846,027. Astarte® is owned by HSO Health Care GmbH, Vienna, Austria, and licensed in the U.S. to Jarrow Formulas, Inc. Other international patents pending.

ASTARTE

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Visit us at www.jarrow.com for more product information.

© 2017 **Jarrow** FORMULAS®

**MOUNTAIN PEAK
NUTRITIONALS®**
CONDITION SPECIFIC FORMULAS®

MEMORY™ FORMULA



S u p p l e m e n t F a c t s

Serving size: 1 capsule
Servings per container: 60

Amount per serving		%DV
Vitamin C (as Poly C Ascorbate)	10 mg	30%
Vitamin B6 (as Pyridoxal-5-Phosphate)	10 mg	453%
Vitamin B12 (as Methylcobalamin)	400 mcg	667%
Folic Acid (as Calcium Folate)	800 mcg	200%
Ginkgo biloba/phosphatidylserine complex (Virtiva®)	150 mg	*
Choline (as Bitartrate)	100 mg	*
n-Acetyl L-Carnitine	100 mg	*
Bacopa monnieri extract (20% bacosides A & B) (whole herb)	50 mg	*
dl-Phenylalanine (free form)	50 mg	*
L-Tyrosine (free form)	50 mg	*
Taurine (free form)	50 mg	*
Ashwagandha extract (Withania somnifera) (4.5% withanolides) (root & berry)	28 mg	*
Rhodiola rosea (4% rosavins)	25 mg	*
Vinpocetine	500 mcg	*
Huperzine A, B, C (as Toothed Clubmoss)	250 mcg	*

Percent Daily Values are based on a 2,000 calorie diet.

* Daily Value not established.

Other ingredients: vegetarian capsules, (cellulose and water), L-Leucine, silica
Virtiva® is a trademark of Indena S.p.A.

Memory™ is a synergistic combination formula that has been shown to enhance memory, improve focus and concentration, and slow down the aging of brain cells.*

**Learn more at www.mpn8.com
To order call toll free (877) 686-7325
info@mpn8.com**

These statements have not been evaluated by the Food and Drug Administration. The contents are not intended to diagnose, treat, cure or prevent any disease.

From the Publisher

► *continued from page 8*

This first case was diagnosed and treated by Drs. Judyth Reichenberg-Ullman and Robert Ullman. A 72-year-old individual was admitted to a university hospital after having his colon removed for unsuccessfully treated ulcerative colitis. The colitis had been treated with pharmaceutical drugs for the past few decades but had become completely unmanageable. Following the removal of the colon, the patient developed severe complications. First, the remaining intestine that was to substitute for the colon failed to function with normal peristalsis (intestinal movement). Second, the patient developed chronic, violent, constant hiccups. And thirdly, the patient acquired severe pneumonia while hospitalized. On top of this, the patient had very severe post-surgery abdominal pain and weakness. The hiccups were incapacitating causing difficulty in breathing, eating, and being able to sleep. Drs. Reichenberg-Ullman and Ullman pieced together the patient's history and discovered that the patient acquired colitis following the administration of vaccinations needed for exotic travel. That information and the patient's current symptoms led to a clear-cut homeopathic diagnosis of needing the homeopathic prescription, *Thuja occidentalis* (also known as Arbor vitae cedar). Yes, a homeopathic prescription of the tree, cedar. The patient's wife was advised to give the patient *Thuja* at the hospital bedside, and the hiccups stopped in five minutes!

Five minutes after going on for more than 24 hours. Does this seem like placebo? Does this sound like shamanism or hypnotism? Yes, the hiccups returned two hours later; but following a second dose of *Thuja*, the hiccups completely resolved never to return. The normal intestinal peristalsis resumed the next day. The pneumonia resolved. The attending doctors were shocked at his improvement and discharged him two days later.

Dr. Richard Moskowitz, MD, had a 34-year-old female patient who was a nurse and who had been severely symptomatic with endometriosis since her teens. Endometriosis is a very disabling condition where the same tissue that lines the inside of the uterus grows outside the uterus, abnormally growing, and profusely bleeding like having a monstrous period. In a word, it is horribly painful. The nurse already had had four surgeries to remove large blood-filled cysts from her bladder and pelvic organs. She had a course of male hormone to suppress the growths. When the patient sought homeopathic care, she only wished to restore her menstrual cycle without having any thoughts about later becoming pregnant. After being given a homeopathic prescription, she first had some scanty periods. With additional homeopathic medicine, the menstruation became regular. Within six months, she became pregnant and eventually delivered a normal baby. When Dr. Horowitz saw her next, eight years later, she reported that she had two pregnancies with uncomplicated births, and her health had been excellent with no further symptoms of endometriosis.

Again, how could this be placebo effect?

Yet, that is the cry of the homeopathic critics: There is no scientific evidence that homeopathy medicine can work – that any case reporting success is the result of placebo effect. If this

continued on page 12 ►

TruEase® Offers Up to 6X More Bioavailable CBD Rich Hemp Oil.

*Douglas Laboratories® is a registered trademark of Atrium Innovations, Inc. and not affiliated with TruGen3®
† This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Personalized
labeling available

- 25mg of CBD & 6mg of Beta-Caryophyllene
- Proprietary SMB Chromatography Extraction: Solvent Free & Undetectable THC/THCa Levels.
- Non GMO Hemp Cultivars
- VESIsorb®: Patented water soluble delivery system for up to 6X enhanced absorption & bioavailability



TruEase®

- Supports normal pain and inflammatory responses associated with aging †
- Promotes cognitive function and healthy sleep †
- Supports optimal skin, heart and neurological health †
- Full Traceability from seed to consumer

From the founding family of Douglas Laboratories* comes a new generation of nutraceuticals, available exclusively through Health Care Professionals: TruGen3®. TruGen3® continues our family legacy of three generations and more than half a century of nutraceutical experience, with products produced under the highest ethical standards.

Contact us today for **FREE SAMPLES** and to find out how you can put our innovative, one-of-a-kind products to work for your patients, and your practice, today.

TruGen3®

Three Generations of Truth in Nutrition

www.trugen3.com 1-844-387-8436

733 Washington Road, Suite 211, Pittsburgh, PA 15228

(3TRUGEN)

From the Publisher

► continued from page 10

were the extent of it – skeptics complaining about homeopathy not working – we would not be too concerned (although we are). The problem, unfortunately, has become as worrisome as when the Flexner report came out in 1910. Late last year the National Health Service in the UK made a policy decision that because there have been evaluations that homeopathy does not work, the National Health Service would no longer reimburse homeopathic prescriptions as they had been doing. Also last year, the news service in Moscow reported that the National Academy of Sciences in Russia deemed homeopathy as ineffective. A similar report was made by the medical board in Australia. In the US, the FTC proposed requiring homeopathic manufacturers to include a statement on OTC remedies that homeopathy is not proven to work scientifically. Also, recently the FDA has demanded that homeopathic manufacturers recall homeopathic teething remedies because of safety worries. Recall that homeopathy is an ultra-dilute remedy – how something that is diluted to essentially zero can pose a safety risk is beyond understanding.

Despite the onslaught of negative reports and policy decisions, homeopathy remains a safe, effective treatment system that is well documented in case reports and clinical trials. Recent scientific reports support the mechanism of action of homeopathy. In 2014, a systematic review and meta-

analysis demonstrated effectiveness in randomized trials of individualized homeopathic treatment. In 2015, the prestigious journal *Nature* reported the effect of homeopathic drugs modifying gene expression in cancer cells. Last November, a paper in *PLOSOne* demonstrated the effect of a well-known homeopathic remedy, *Arnica montana*, stimulating gene expression in white blood cells. Finally, the recognition that nano-particles exert important medical effects is being demonstrated – after all, homeopathy is essentially nano-medicine.

Controversy or not, it is vital that homeopathy medicine continue to be accepted and practiced. NUNM and other naturopathic colleges deserve recognition for their role in educating physicians in homeopathy and ensuring its ongoing practice in the US and abroad. We need to remain steadfast in refusing to allow politicians and regulators from dismantling homeopathic medicine and pharmacy.

Have Smartphones Destroyed a Generation?

The byline of this September 2017 *Atlantic* magazine article by Jean Twenge summarizes the effect of smartphones on the iGen generation born after 1994: “More comfortable online than out partying, post-Millennials are safer, physically, than adolescents have ever been. But they’re on the brink of a mental-health crisis.” Twenge is a psychologist at San

continued on page 14 ►

For Pain For Anxiety For Insomnia For Depression

Alpha-Stim®

ALPHA-STIM®
LET NOTHING STOP THEM™

Why Not Treat It All at Once?

Alpha-Stim provides fast, safe and proven effective relief without drugs. Alpha-Stim can be used alone, along with other therapies, or as an adjunct to medication (without the risk of drug interactions). There are no serious adverse effects, no risk of addiction, and more than 100 research studies over 35 years that prove the effectiveness of this low level electrical prescription brain therapy.

HELP FOR YOUR PATIENTS IS HERE.

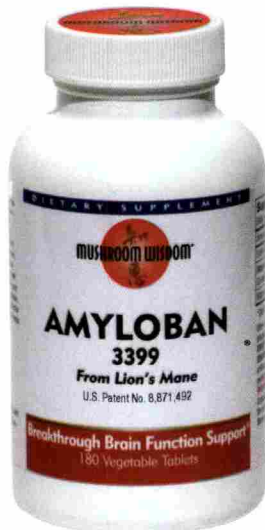
To get started and to see more clinical data, visit www.Alpha-Stim.com/TL or call 1-800-FOR-PAIN (in USA) or +940-328-0788 (Outside USA).

Alpha-Stim and the Alpha-Stim logo are registered trademarks, and LET NOTHING STOP THEM is a trademark of Electromedical Products International, Inc. © 2017 Electromedical Products International, Inc. All rights reserved. Read a full disclosure of the minor and self-limiting risks here: alpha-stim.com/risk.



Keep Playing Those Mind Games

There's never time to slow down. You can indeed "teach an old dog new tricks." Amyloban 3399[®] is a supplement your patients will love as their go-to healthy brain-support supplement.*



Amyloban 3399[®] contains unique, patented phytochemicals from the Lion's Mane mushroom — *hericenones* and *amyloban* — shown through research to support nerve cell health and healthy brain function.* Now you can help your patients enjoy being mentally fit, naturally. Amyloban 3399[®] from Mushroom Wisdom!

- **Manufactured in a cGMP facility in the U.S.**
- **Manufactured by the most trusted source in mushroom nutrition**
- **Intro Discount: Call 800-747-7418 with Code TL1015**

Available at



delivering to improve health™

800-654-4432



THE POWER OF KNOWLEDGE

Available at



(888) 633-7620

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

From the Publisher

► continued from page 12

Diego State University who studies differences between the “generations” who come of age. Generally, generational characteristics of behavior and beliefs change gradually. Millennials are noted to be very individualistic, but baby boomers have also been individualistic, while millennials demonstrated a slightly greater level of individualism. What Twenge has observed is among the adolescents born after 1994, whom she refers to as the iGen generation because they have come of age since the internet has evolved; the degree of change in boys and girls is not a gradual change, but a profound shift in behaviors and beliefs. Twenge’s studies reveal that the change became “seismic” after 2011 when nearly 50% of the US population owned smartphones. Among 8th graders, 10th graders, and 12th graders, the trend is identical for studied characteristics: “Times per week teenagers go out without their parents,” “Percentage of 12th graders who drive,” “Percentage of teenagers who ever go out on dates,” and “Percentage of high-school students who have ever had sex,” all show a sharp decline among adolescents now compared to similar-aged members of the millennial and baby boomer generations. On the other hand, study of “The percentage of 8th, 10th, and 12th graders, who agree with the statement, ‘I often feel left out of things’ or ‘A lot of times I feel lonely,’” sharply increased in the iGen generation. Similarly, they are more likely to have less than seven hours of sleep on most nights compared to millennials.

What could be behind this marked change of behaviors and beliefs in adolescents? Twenge hypothesizes that the extensive amount of time boys and girls spend texting on social media is responsible. It is not unusual for a teen to spend 2-3 hours daily on SnapChat, Facebook, and other sites. Why interact with a friend in person when one could do this comfortably from one’s bedroom with no interference from parents? There is no need for being chauffeured to another location, no

money is required, and if a friend is not responsive or boring, there is always another friend to text. Moreover, when the teen is obliged to go with parents to events or visits, one can hang back and text without engaging in the activity or sharing directly in conversation.

Without work, teens don’t experience the responsibility of doing productive activity nor do they earn money for their shopping needs. True, most teens don’t seek to drink alcohol; and without dating, they don’t engage in physical sex. (However, Twenge’s work does not address the rampant problem of drug addiction nationwide.) Still, despite the excess amount of time on social media, most teens complain of loneliness, feeling depressed, and not getting sufficient sleep. The incidence of suicide is nearly triple among girls and double among boys in 2015 compared to 2005. Not unexpectedly, because so many stay at home the homicide rate among teens has sharply declined.

Antidepressant use has dramatically increased in the US population as a whole. Drugs are considered an easy solution for anxiety and depression. The increased time spent on social media makes teens more anxious and depressed. When their social media posting is ignored, the teen becomes anxious. Worse, bullying which previously meant physical violence, is now carried out by mean-spirited trolling on the internet frequented by classmates. Twenge’s work found a direct correlation between greater time spent on texting or social media and psychiatric disorders; contrarily, more time spent engaged in physical activities and interacting directly with others socially, reduced the risk of depression and anxiety.

Twenge’s message is discussed more fully in her book, *iGen – Why Today’s Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy – and Completely Unprepared for Adulthood – and What that Means for the Rest of Us*.

Upcoming in our November Issue

Is there any connection between Fibromyalgia and imbalance on standing?

Jacob Teitelbaum, MD, ponders such a connection.

How do we manage sleep difficulties in the Fibromyalgia patient?

Michael Gerber, MD, and David Brady, ND, share different perspectives.

Are Unresolved Urinary Tract Infections Linked to Dementia?

In the August 2017 issue of *Alternatives: For the Health Conscious Individual* by Dr. David Williams, the author writes about the surprising connection of elderly individuals with dementia and unresolved cystitis. Williams worries that too many of them are institutionalized and treated with anti-psychotic medication when the primary problem is an unresolved urinary tract infection. He hypothesizes that the recurrent urinary tract infection negatively impacts the body’s microbiome, and that, in turn, has an adverse effect on thinking and brain functioning. Williams’ report explains that the urinary tract infection in the elderly does not necessarily present as pain on urination. Instead, the individual may

continued on page 18 ►

DNA CONNE^XIONS

DNA Connexions is a sophisticated laboratory specializing in the detection of microbial DNA. Polymerase chain reaction technology (PCR), with its high specificity and sensitivity, is the cornerstone of our testing methodology.

The Lyme Panel tests for four unique gene sequences found in *Borrelia burgdorferi*, in addition to 10 common tickborne co-infectors.

Visit link below to receive a free Patient Information brochure.
www.DNAConnexions.com/Townsend

#LymeDiseaseDetection

R_x Integrative Solutions

- ☑ Mitochondrial Support
- ☑ Cytokine Support
- ☑ Antioxidant—Nrf-2 Support
- ☑ Detox Support

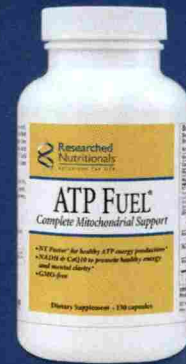


Researched Nutritionals
solutions for life

CALL 800.755.3402

Tel: 805.693.1802 • Fax: 805.693.1806 • CustomerService@ResearchedNutritionals.com
www.ResearchedNutritionals.com | Available only through healthcare professionals

MITOCHONDRIA



- ✓ Phospholipid membrane repair*
- ✓ Krebs cycle support*
- ✓ Clinically researched

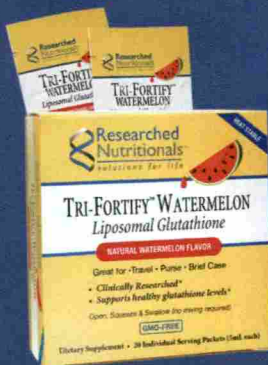
CYTOKINE SUPPORT



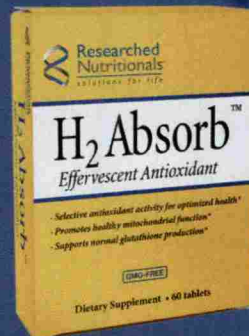
- ✓ Promotes healthy cytokine activity*
- ✓ Highly absorbable polyphenol blend*
- ✓ Nrf-2 support*

ANTIOXIDANT

DETOX



- ✓ Clinically researched
- ✓ Supports detox pathways*
- ✓ Promotes healthy mitochondrial function & NK cell function*



- ✓ Targets hydroxyl radical group*
- ✓ Crosses blood-brain barrier & cell membrane*
- ✓ Nrf-2 support, which promotes healthy glutathione level*



Joseph Burrascano Jr., MD

"Due to the research basis of these formulations, I think these products would be an important part of a practitioner's arsenal."

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

IN THIS ISSUE

October 2017 | #411

Letter from the Publisher | Jonathan Collin, MD | 4

Clinical Update from Sophia Health Institute | 20

by Dietrich Klinghardt, MD, PhD, and Christine Schaffner, ND
The Ruggiero Klinghardt protocol uses autonomic response testing, ultrasound or massage provocation, and urine testing to identify pathogens and toxins underlying chronic conditions, including Lyme disease.

Mycotoxins: The Hidden Threat of Mold to Our Bodies and Brains | 24

by Matthew Pratt-Hyatt, PhD
Great Plains Lab has developed a highly specific urine test that identifies exposure to mold toxins that contribute to common symptoms and disease.

FCT and Brain: "Doctor, My Brain Feels Rewired!"** | 29

by Savely Yurkovsky, MD
Field Control Therapy, developed by Yurkovsky, uses bio-resonance to identify underlying environmental and inherited disease-causing factors and homeopathy to treat a range of psychiatric conditions in these case studies.

News | 34

Brazil "Nuts" Gather to Fight Inflammation | John Parks Trowbridge, MD, FACAM
The 5th International Biobran Workshop – New Modern Ways to Treat Cancer
Prof. Serge Jurasunas

Pathways to Healing | Elaine Zablocki | 38

Breathe to Stay Alive

Shorts | Jule Klotter | 40

Literature Review & Commentary | Alan R. Gaby, MD | 43

Optimizing Attention Deficit Hyperactivity Disorder (ADHD) Treatment with Oligomeric Proanthocyanidins (OPCs) | 46

by James Greenblatt, MD, and Winnie T. Lee, RN
Medication is not the only treatment for ADHD. Neurofeedback and OPCs like pycnogenol improve attention, alertness, memory, and executive functioning.

Innovative Approach to Psychiatry: Treating Incurable Psychiatric Patients with Neural Therapy | by Michael I. Gurevich, MD | 51

Neural therapy can facilitate healing of emotional trauma and scars as well as physical scars, making it useful for psychiatric conditions.

High Tech Ingenuity Produces a Breakthrough Program to Help with the Symptoms of Autism, ADHD, Dementia, and Amnesia | 56

by Mary Ann Block, DO, PA
The SAVE Program for multisensory integration helps children and adults with cognitive dysfunctions increase language processes, coordination, body awareness, and memory.

Pharmaceutical Companies Behind the Eight Ball in Treatment of Mitochondrial Dysfunction | by Debby Hamilton, MD, MPH | 60

Mitochondrial dysfunction, exacerbated by oxidative stress, is becoming a targeted factor underlying many chronic illnesses. While FDA-approved drug treatments are not available, natural alternatives are.

Innovative Integrative Addiction Treatment = Unparalleled Growth Opportunity | by Dalal Akoury, MD | 62

The author explains the role of neurotransmitters in addiction and the great need for individualized integrative medical care to address this multi-faceted disease.

Cannabinoid Deficiency and Its Impact on Human Health and Disease, Part 2 | 65

by Jonn Desnoes, OMD, MD, PhD, and Sandra Kischuk, MSMIS, MCPM
The US government's search to substantiate marijuana's harmful effects unexpectedly revealed the endocannabinoid system, its vital role in human health, and why the botanical has so many therapeutic effects.

Personality Development via the Elimination of Emotional Conflicts | 66

by Dr. Andreas Müller
Psychosomatic Energetics, developed by Reimar Banis, MD, is a complementary therapy that removes energy blockages caused by unresolved emotional conflicts and, by doing so, aids personality development.

Book Reviews | 70

The Alzheimer's Antidote: Using a Low-Carb, High-Fat Diet to Fight Alzheimer's Disease, Memory Loss, and Cognitive Decline by Amy Berger, MS, CNS, NTP
review by Katherine Duff

Unsafe at Any Meal: What the FDA Does Not Want You to Know About the Foods You Eat by Dr. Renee Joy Dufault
review by Dr. Earl Mindell, RPh, MH, PhD

Nutritional Medicine (Second Edition) by Alan Gaby, MD
review by Jacob Schor, ND, FABNO

Book Excerpt | 76

Foreword to
Nutrition and the Autonomic Nervous System by Nicholas J. Gonzalez, MD
by Linda L. Isaacs, MD

Guest Editorial | 78

Calling all MDs! How To Help Naturopathic Colleagues Gain Licensure in All 50 States | by Amy Rothenberg, ND

Current Controversies | Ira L. Goodman, MD, FACS, ABIHM, FAARM | 79
Politics in Medicine

In Memoriam | 80

Paul Jaconello, MD
Warren Levin, MD

Healing with Homeopathy | 81

Judith Reichenberg-Ullman, ND, DHANP, LCSW, and Robert Ullman, ND
A Mom with Meniere's Disease and A Daughter with ADHD:
When All You Need Is Homeopathy

Functional Gastroenterology Bolus | Steven Sandberg-Lewis, ND, DHANP | 84
An Expanded View of Transaminases and New ACG Normal Values

Ask Dr. J | Jim Cross, ND | 86
Brain Fog: National Security Risk

Curmudgeon's Corner | Jacob Schor, ND, FABNO | 88
Dental Hygiene Slows Alzheimer's Decline

Monthly Miracles | Michael Gerber, MD, HMD | 90
Crown of Thorns

Women's Health Update | Tori Hudson, ND | 92
Enhancing Libido; Improving Depression

Townsend Calendar | 94

Editorial | Alan Gaby, MD | 95

Intravenous Vitamin C, Hydrocortisone, and Thiamine: A Major Advance in the Treatment of Severe Sepsis and Septic Shock

ON THE COVER: James Greenblatt, MD (pg. 46); Nutrition and the Autonomic Nervous System (pg. 76); Dental Hygiene and Alzheimer's (pg. 88); Neural Therapy for Emotional Trauma (pg. 51); Multisensory Integrative for Autism, Dementia, and Amnesia (pg. 56)

From the Publisher

► continued from page 14

develop an abrupt change in behavior and thinking, becoming confused, unable to perform their normal tasks. In extreme cases there may be hallucinations, emotional outbursts, paranoid ideation, and inability to express oneself logically. Of course, the UTI may still present with hematuria, and there can be generalized malaise, nausea, fatigue, anorexia, and incidents of falling.

Could this be a major problem in a patient with dementia?

Williams writes about the failure of antibiotics in recurrent cystitis; bacterial resistance has become ubiquitous. Instead he recommends the use of cranberry extract and d-mannose. He suggests a cocktail of 1/4 teaspoon (400 mg) of cranberry extract, 1 teaspoon (2,000 mg) of d-mannose powder, and 1/2 teaspoon of sodium bicarbonate to be taken twice daily. Restoring the microbiome with effective prebiotics and probiotics is also critical.

One thing that Williams did not discuss but was reviewed in the August/September 2017 issue of the *Townsend Letter* by Dr. Michael Gerber is the problem of infected teeth and dental roots. Chronically infected teeth and roots will prevent satisfactory resolution of recurrent urinary tract infections (and other chronic disorders) and need to be addressed as well.

James Greenblatt, MD

Our cover story features Dr. James Greenblatt, Chief Medical Officer and Vice-President of Medical Services of Walden Behavioral Care. Dr. Greenblatt serves as an assistant clinical professor of psychiatry at Tufts University School of Medicine and Dartmouth Geisel School of Medicine. An acknowledged expert in integrative medicine, Dr. Greenblatt has lectured throughout the US on the scientific evidence for nutritional interventions in psychiatry and mental illness. He has authored many books that integrate psychiatric practice with nutritional medicine.

In 2011, he authored *Answers to Anorexia* and *The Breakthrough Depression Solution*. Based on his experience with eating disorders, Dr. Greenblatt wrote a paper in the Oct. 2011 issue of the *Townsend Letter* entitled "Malorexia: Anorexia Nervosa Redefined." Dr. Greenblatt's review of the psychiatric literature attests to the medical profession's view that anorexia nervosa was a nervous disorder, once considered a form of hysteria, more recently seen as a dysfunctional child upbringing. Psychiatrists particularly blame our culture's fixation on thin women who are considered paragons of beauty. Greenblatt asserts that it is not our preoccupation with slimness that brings on anorexia; instead, the caloric restriction itself damages the brain and perpetuates the brain's cessation of appetite.

How does Greenblatt propose to treat the adolescent's or young adult's anorexia? Not by scheduling psychological therapy. First, he redefines the condition as malorexia or bad eating: "It is a complicated illness of restrictive eating and self-starvation initiated by diverse factors leading to severe malnutrition and consequent biochemical disturbances in the brain." Treatment for malorexia requires feeding the starving brain essential nutrients to quiet the chronic thoughts of fear. Greenblatt states that patients with malorexia suffer from chronic fear.

Greenblatt's approach to anorexia includes testing for zinc status; testing for elevated levels of urinary peptides, screening for celiac disease, doing EEGs to determine if psychiatric medication is required; and testing for and treating macro- and micro-nutrient status. With appropriate psychiatric medication (as needed) as well as adhering to nutritional dietary changes, the anorexic patient is expected to recover a normal appetite and no longer be dealing with anorexia.

In this issue, Dr. Greenblatt and Winnie Lee, RN, write about optimizing attention-deficit hyperactivity disorder (ADHD) treatment with oligomeric proanthocyanidins (OPCs). Greenblatt and Lee review that ADHD has become the prevalent childhood disorder in the US. The most common treatments for ADHD has been the prescription of Ritalin, Adderall, or dexamphetamine. While these treatments have been shown to provide partial effectiveness, they fail to provide complete relief on a long-term basis in 70% of patients.

Recent studies have demonstrated the effectiveness of neurofeedback in comparison to drug therapy. However, neurofeedback is costly and time consuming, leading to poor patient compliance. Greenblatt and Lee are impressed with treatment results using plant-based oligomeric proanthocyanidins (OPCs) as "adjuvant therapy" in treating ADHD. OPCs are available in plants that are strongly pigmented such as blueberries, cranberries, and grapes but are also available in grapeseed, ginkgo biloba, and pine bark. Treating patients with OPC supplements, such as pycnogenol derived from pine bark, has proven to be an effective approach in managing ADHD.

Greenblatt's work with ADHD is more extensively examined in his recently published book, *Finally Focused: The Breakthrough Natural Treatment Plan for ADHD that Restores Attention, Minimizes Hyperactivity, and Helps Eliminate Drug Side Effects*, coauthored with Bill Gottlieb, Harmony Books, 2017. Greenblatt and Lee have coauthored *Breakthrough Depression Solution: Mastering Your Mood with Nutrition, Diet and Supplementation* available through Sunrise River Press, 2016.

Jonathan Collin, MD

Albion® builds a better chelated mineral

Our unique scientific process turns elemental mineral forms into easily digested and absorbed nutrients

Start with high quality raw materials

We use only the best food grade minerals

We carefully control reaction conditions to ensure each mineral form is fully chelated

Employ proven manufacturing processes

Select quality organic ligands

Our organic glycine ligands have the ideal molecular structure and size

We use FT-IR spectroscopy to guarantee each batch has our signature chelate ring structure

Validate structure using FT-IR

Use patented chelation and bonding technology

Our minerals are fully reacted to form the most bioavailable and stable ring structure

We dedicate extensive resources to ongoing research and educational efforts

Continue research and development



Albion® minerals support heart health:

Our Magnesium Bisglycinate Chelate and Potassium Glycinate Complex support healthy cardiovascular function, proper muscle contraction, and nervous system communications. Our Ferrochel® (iron bisglycinate chelate) increases hemoglobin, which allows more oxygen to be delivered to body tissues per heart contraction, decreasing the heart's work load. These superior minerals chelated with glycine provide essential support for healthy heart function.


ALBION
MINERALS

Human Nutrition

Building a Better Mineral™

www.AlbionMinerals.com
1-800-453-2406

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

Look for Albion's Gold Medallion to find companies that use Albion chelated minerals in their formulations:



Clinical Update from Sophia Health Institute

by Dietrich Klinghardt, MD, PhD, and Christine Schaffner, ND

In the 2016 Lyme edition of the *Townsend Letter*, we introduced the Provoked Lyme Urine PCR test. The goal of this article is to share current practices and new findings using the Provoked Lyme Urine PCR test.

As clinicians, we realize the limitations of laboratory testing for Lyme disease and often rely on clinical history and physical exam to make a diagnosis. The limitations of current laboratory methods for Lyme are multifactorial. One potential constraint is that we attempt to diagnose Lyme by identifying antibodies (ELISA, Western blot, and LTT) in patients who have weakened and compromised immune systems. A white blood cell cannot produce antibodies if it is invaded by spirochetes or Bartonella-like organisms and struggles for its own survival. In the past, in clinical practice, many patients improve with antimicrobial Lyme-directed treatment – in spite of a negative Western blot, ELISA, or lymphocyte transformation test (LTT-ELISPOT).

Another limitation of lab testing is that we look for evidence of Lyme in body fluids or tissues where spirochetes do not reside. For example, dark-field microscopy, conventional PCR tests, or the new “Borrelia culture” look for microbes or their DNA in the blood. Once infected with Lyme, Lyme has a brief blood-borne phase and concentrates in the connective tissue, inside neurons or ganglia, inside lymph nodes, in the fascia, and in other tissues or organs. Even more questionable is the attempt to search for Lyme spirochetes in the cerebrospinal fluid after doing a spinal tap.

As far back as 1998, a study already showed that spirochetes immediately give up their spirochete-form and shift into the “round body” shape when they get in contact with spinal fluid (Brorson, & Brorson, 1998). The round body is not detectable with the typical tests the lab applies when searching for living spirochetes.

The provoked urine PCR test was conceived and innovated by us out of the necessity to give patients more objective information to understand why they are sick – and to help them find appropriate treatment. With an objective DNA-based test, we have attempted to support our current clinical knowledge and answer the big questions: Is this patient infected with Lyme or one of the co-infections? If so, where in the body is the infection? Has the treatment worked; are the remaining symptoms a mysterious post-Lyme illness, or is the infection still active?

Currently we use the PCR test performed by DNA Connexions, Colorado Springs, Colorado. The Lyme panel tests for four different genes of *Borrelia burgdorferi* and several common Lyme disease co-infections: *Babesia microti*, *Babesia divergens*, *Babesia duncani*, *Bartonella bacilliformis*, *Bartonella henselae*, *Bartonella quintanta*, *Borrelia miyamotoi*, *Borrelia recurrentis*, *Ehrlichia chaffensis* and *Anaplasma phagocytophilum*. According to the company and consistent with common knowledge, a positive PCR-based Lyme test indicates the presence of DNA from *Borrelia burgdorferi* and/or other co-infections. The PCR test has high specificity (this means, if the test says, “you have *Babesia microti*,” you have

Babesia microti), but is *falsely* known to have low sensitivity: if you look in the blood for a microbe that doesn’t live there anymore, you won’t find it there with this test. You have to actually look for the microbes where they currently live!

Antibody tests (Western blot, IgG, IgM, LTT) are far less specific but more forgiving. If the cells of the immune system migrate through the tissues where the microbes hide and get in contact with them without being hurt, and then get back into the blood, you may find evidence of the contact with the pathogen in the blood – if the white cell is alive and still healthy enough to create and secrete related antibodies into the blood, where they are then looked for.

At our Sophia Health Institute, we use and further developed ART (autonomic response testing), an extension of the standard physical exam and a non-invasive technique that uses muscle-biofeedback. This allows us to use cultures of Lyme, Babesia, EBV, etc. and the “Resonance Phenomenon between Identical Substances” (first described and published by Y. Omura MD in 1986 in the *International Journal of Acupuncture and Electro-Therapeutics Research*) to find the body tissues and compartments that have become the sanctuary cities of the pathogens.

Our results have shown that ART in the hands of an experienced practitioner has 94% sensitivity. This means, in 94% of patients where we, for example, find *Bartonella henselae*, the PCR test – if it is applied as discussed below – will also show the presence of the identical microbial species. ART has a specificity of 88%. That means

if we find, with non-invasive ART, the pathogen *Babesia microti*, there is an 88% chance it really is exactly that, but a 12% chance it might be *Babesia duncani* or *Babesia divergens* – a difference that might clinically be irrelevant.

To perfect the existing provoked PCR testing procedure, we first evaluated patients with chronic myofascial pain who tested negative or “indeterminate” with the Western blot test. We used manual ART testing with diluted microbial cultures to detect if (and where) in the body we can find resonance or evidence of the presence of specific pathogens. We then applied deep tissue bodywork to these areas, collected the urine afterwards for six hours, and sent the urine for PCR testing. Out of the first 150 samples, only two were negative. Most showed the presence of several species of Lyme and co-infections, proving three points:

1. To detect and diagnose pathogens in the blood or urine, they have to be displaced from their sanctuary into the blood first, using an appropriate technique.
2. Tissues that are injured or chronically strained become the preferred sanctuaries for pathogens, perpetuating the original pain or symptom.
3. Most pathogens are tissue specific; they do not live randomly dispersed in the body and body fluids. They have firmly established domiciles, which determine the patient’s symptoms. If *Babesia* protozoae live in the amygdala, the patient might be depressed. If they live in the endothelium of the brain’s vascular system, the client may have chronic migraines. If they live in the vagus nerve, the patient may have all the symptoms of a leaky gut or SIBO. If they live in the myelin of the brain or spinal cord, the patient may have all the symptoms of MS.

However well we succeeded in tracking the true causes of myofascial pain, we struggled to find appropriate methods to tease pathogens out of the brain and spinal cord. Deep tissue massage is obviously not possible when

the tissues are protected by the skull or spinal vertebrae.

Through our personal friendship with the radiologist and world-renowned ultrasound expert Prof. Dr. Marco Ruggiero (who has over 200 peer-reviewed publications), we found that ultrasound was the perfect tool to reach inside the brain and spinal cord to displace significant numbers of pathogens from their sanctuaries, so we could detect them in the blood, or later in the urine. Since the kidneys do the work for us to concentrate unwanted microbial, toxic, or allergenic elements in the urine, the urine is the ideal body fluid for our work. Doing the PCR test on a six-hour urine collection remains our principal tool to evaluate patients with chronic illness.

In the March 2017 issue of the *Journal of Immunology*, Dietrich Klinghardt MD, PhD, and Prof. Marco Ruggiero published the landmark article “The Ruggiero Klinghardt (RK) Protocol for the Diagnosis and Treatment of Chronic Conditions with Particular Focus on Lyme Disease.” It discusses the need to make pathogens “visible” to the immune system and detectable in laboratory testing, using provocation techniques such as ultrasound. The article also shows the importance of including manual ART testing in the physical exam of any patient with chronic illness, since it can predict where the pathogen’s sanctuaries are and where the ultrasound – or bodywork – should be applied. It shows ultrasonography pictures that consistently reveal and confirm the specific pathology in the tissues that were first determined only with ART.

At Sophia Health Institute, we use the following RK/ultrasound protocol for provocation. The instrument used is a standard therapeutic ultrasound device (cost: less than 900 USD). The patient is treated in a supine position. If needed for diagnostic precision, a six-hour urine collection is done before the ultrasound treatment. The following settings, treatment, locations, and times are used:

- Bladder – 50% pulsed 1Mhz 0.5W/cm² for 2 minutes

- Spleen – 50% pulsed 1Mhz 0.5W/cm² for 2 minutes
- Vagus – 20% pulsed 3.3Mhz 0.5W/cm² for 1 minute each side with a mild neck extension
- Temple – 10% pulsed 3.3Mhz 0.5W/cm² for 1 minute each side
- Submandibular/Salivary glands – 20% pulsed 3.3Mhz 0.5W/cm² for 1 minute each side.

After the procedure, the urine is collected for six hours and an aliquot sent in for PCR testing (ideally along with the pre-provocation urine test).

In addition, we like to include all areas that tested with ART for the presence of Lyme-related pathogens, using the same parameters as above. We may include the symptomatic knee joint, the ailing heart, or the area where the client has fascial pain. If pain or symptoms are in organs or tissues that can be manually compressed (intestines, liver, muscles, fascia, peripheral nerves), we also include simple repeated manual compressions of those body areas or compartments or Yoga-type stretches of the area. Examples of the manual techniques – liver compression, cranial compression, self-lymphatic message, etc. – are demonstrated on our website. They can be viewed at www.sophiahi.com/videos. We also offer an evening introduction of the RK protocol in order to teach it to NDs, DOs, MDs, etc.

The provoked PCR test can also be used for very specific issues. If a client has localized symptoms (prostate cancer, discogenic low back pain, Achilles tendon rupture, and so on), ultrasound or body work can be applied just to that area with a pre- and post-urine collection. Whatever shows up in the post-provocation test that did not show up in the pre-test has to be from the area that was provoked! Beyond the RK protocol, we also use testing for heavy metals (aluminum, mercury, etc.), cancer cells, and other issues in the same manner. The results are revolutionary and go beyond what we can discuss here.

The choice of organs and regions of the body in the standardized RK protocol are not only based on our experience with ART but also on our



Clinical Update from Sophia Health Institute

current knowledge of Lyme. Lyme spirochetes are found in the lining of the bladder wall. Patients with Lyme often have bladder symptoms ranging from interstitial cystitis to chronic urinary tract infections to neurogenic bladder and so on. In a mouse study, spirochetes were most commonly found in the bladder wall (Schwan, Burgdorfer, Schrupf, & Karstens, 1988). This same article demonstrated spirochetes in the spleen. Lyme patients often have autonomic dysfunction with the vagus nerve most commonly being affected. The vagus nerve innervates the lungs, thymus, heart, liver, kidneys, and intestines.

Dr. Ruggiero and Dr. Bradstreet (2014) utilized transcranial ultrasonography to view cortical abnormalities and increased extra-axial fluid in patients with autism. By placing ultrasound on the thin bone of the temples, we can activate the brain's lymphatic system to drain its gluey contents downstream. Ultrasound not only offers diagnostic efficacy but also therapeutic effects. Dr. Ruggiero and Dr. Bradstreet's article describes the therapeutic effect of ultrasound on the glymphatic system (glia-dependent lymphatic system of the brain).

We also included the submandibular lymph glands, in order to provoke the lymphatic fluid to drain its viscous content into the venous system of the neck. Co-infections such as Bartonella often cause cervical lymphadenopathy

and become diagnosable and visible in the following urine collection. For example, we performed the RK protocol on this chronically ill patient and did pre- and post-provocation urine PCR tests (only with ultrasound). The pre-urine test was negative, while the post-provocation demonstrated *Borrelia* and Bartonella.

In conclusion, the provoked Lyme urine PCR test used with the RK protocol is currently by far the most sensitive and – when applied properly – also the most tissue-specific test for *Borrelia burgdorferi* and the multitude of relevant co-infections and opportunistic infections. It's also easy to learn, uses only FDA-approved, affordable equipment, and is more cost-effective than other current test methods. The provoked PCR test and the RK protocol have proven what our Lyme-literate mentors and the ILADS organization have predicted 30 years ago: Lyme is truly the plague of the 21st century, and patients should no longer be denied a proper work-up, diagnosis, and treatment.

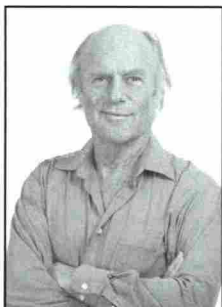
The provocation technique can not only be applied for Lyme and co-infections, but also should be considered for other pathogens and toxins such as heavy metals and glyphosate, for certain brain peptides, and for cancer markers and cells. Every medical condition, every symptom we know should be given another look. Is the lymphoma or osteoporosis really,

deep down, caused by Bartonella? Is the discogenic low back pain an outcome of Lyme spirochetes having slowly eaten away at the disc? Is your child's autism not improving with the biomedical approach because the spirochete or Babesia infection in the brain has been missed? Is your mental decline caused by attacks of the immune system directed at the aluminum deposits in your endothelial lining of the brains vasculature? Can we diagnose breast or prostate cancer without needle biopsy, simply by applying ultrasound and looking for cancer cells, glyphosate, or aluminum in the blood afterwards?

A thousand questions will rise to the surface soon, but this time with logical, affordable, and beautifully simple treatment solutions. The RK protocol allows us to diagnose the causes of illness pre-mortem, not post-mortem, and offers a new avenue to early diagnosis and monitoring of treatment efficacy and outcome. The diagnostic procedure rarely takes more than 15 minutes and can be done in the office of any ND, DO, or MD. The ART-part of the procedure deepens the diagnostic capability and effectiveness of the method and also allows us to find the most effective and best tolerated treatment modality, though it takes a bit longer to learn. We invite you to learn from us, communicate with us, criticize us – or join us on this exciting journey.

References

- Bradstreet J, et al. A New Methodology of Viewing Extra-Axial Fluid and Cortical Abnormalities in Children with Autism via Transcranial Ultrasonography. *Front Hum Neurosci.* 2013; 7: 934.
- Brorson O, Brorson, S. (1998). In vitro conversion of *Borrelia burgdorferi* to cystic forms in spinal fluid, and transformation to mobile spirochetes by incubation in BSK-H medium. *Infection.* 1998; 26(3), 144-150.
- Klinghardt, D, Ruggiero M. (2017). The Ruggiero-Klinghardt (RK) Protocol for the Diagnosis and Treatment of Chronic Conditions with Particular Focus on Lyme Disease. *American Journal of Immunology.* 2017; 13(2): 114-126.
- Omura Y. Electro-Magnetic Resonance Phenomenon as a possible mechanism related to Bi-Digital O-Ring Test Molecular Identification and Localization Method. *Acupuncture & Electro-Therapeutics Research.* 1986; 11(2), 127-145.



Dietrich Klinghardt, MD, PhD, was born, raised and educated in West Germany, where he graduated from Freiburg Medical School/Albert Ludwigs University in 1975. He also studied psychology and completed a 3-year research project/ PhD in angiology. He is internationally known for his successful treatment of chronic pain and illness. Dr. Klinghardt combines nonsurgical orthopedic medicine with immunology, endocrinology, toxicology, neural therapy, hypnotherapy, and energy psychology. He has been in practice for over 40 years and has been a pioneer in the diagnosis and treatment of Lyme disease, applying his 5 Levels of Healing model. Dr. Klinghardt founded Sophia Health Institute in Woodinville, Washington, where he sees patients.



Dr. Christine Schaffner is a board-certified naturopathic physician who graduated from Bastyr University. She completed her undergraduate studies in pre-medicine and psychology at the University of Virginia in Charlottesville, Virginia. Dr. Schaffner specializes in the treatment of chronic illness and is the clinic director of Sophia Health Institute in Woodinville, Washington.



SUPPORTING the HEALTH,

immune system and detoxification
of people living with essential
nutrient deficiency

Dr. Christine Schaffner uses BioPure CockTail to support the immune system as a part of the Klinghardt Lyme Protocol at Sophia Health Institute.

"BioPure CockTail is a liposomal herbal formula that is very effective, well tolerated, and easy to use. The Klinghardt Lyme Protocol at Sophia also includes hyaluronic acid to bring pathogens out of the connective tissue so they are more susceptible and Cistus tincture and tea to address biofilm. It is essential to use binders such as chlorella, ZeoBind, Metal Sweep, and supportive detoxification strategies in any Lyme Protocol."

—Dr. Christine Schaffner, Clinic Director,
Sophia Health Institute



Visit us online at: www.biopureus.com



Follow us at:
www.facebook.com/biopureus

FREE GROUND SHIPPING
on all orders with coupon code
OCT17TL

Expires 10/31/17

Mycotoxins: The Hidden Threat of Mold to Our Bodies and Brains

by **Matthew Pratt-Hyatt, PhD**
Associate Director of The Great Plains Laboratory, Inc.

Mycotoxins are some of the most prevalent toxins in the environment. These molecules are secondary metabolites of fungi.¹ Most humans are exposed to mycotoxins through mold, which can be found growing in buildings, vehicles, and foodstuffs. Mold can grow on almost any surface, especially if the environment is warm and wet. Inner wall materials of buildings, wall paper, fiber glass insulation, ceiling tiles, and gypsum support are all good surfaces for mold to colonize. The mold can then release mycotoxins into the environment causing symptoms of many different chronic diseases. Diseases and symptoms linked to mycotoxin exposure include immune-suppression, fever, pneumonia-like symptoms, heart disease, rheumatic disease, asthma, sinusitis, cancer, memory loss, vision loss, chronic fatigue, skin rashes, depression, ADHD, anxiety, and liver damage.^{2,3}

Mycotoxins are absorbed in the mucosal epithelia in the airways and the gut and can affect many immune-related organs and cell types.⁴ These interactions suppress immune functions. Multiple types of mycotoxins can cause a decrease in B cells, white blood cells, and hematopoietic stem cells.^{5,6} Exposure to mycotoxins decreases the amount of mature CD4+ cells and splenic T lymphocytes.⁷ This exposure will also affect different groups of cytokines. IL-2 production and IL-2

receptors are decreased, but IL-17, IL-10, TGF- α , and MIP-1 β are all elevated. These changes in cytokine expression can lead to enhanced tissue damage to multiple different tissues and organs.⁸

Mycotoxins and the Brain

One of the main organs affected by mycotoxins is the brain.⁹ Mycotoxin inhibition of protein synthesis, damage to DNA, and increased production of inflammatory cytokines lead to damage of the central nervous system (CNS).¹⁰ Mycotoxins also affect the proliferation and migration of neurons.¹¹ Neurotoxicity is most pronounced in the ventral mesencephalon, hippocampus, and striatum.¹² The blood brain barrier, which is a selective permeable barrier protecting the brain, can be damaged by mycotoxins. Trichothecenes can cause cytotoxic effects at the blood brain barrier, which will allow other harmful chemicals and pathogens to affect the brain.¹³ In the brain, proinflammatory cytokine interleukin 1 β is produced during mycotoxin exposure.¹⁴ Damage caused by mycotoxin exposure can lead to depression, poor memory recall, Alzheimer's-like symptoms, and headaches.¹⁵

Introducing the GPL-MycoTOX Profile

At The Great Plains Laboratory, Inc., we have a primary focus on helping patients with chronic illnesses, including mental health disorders.

We have developed tests that look at hundreds of different analytes and have worked with doctors to help them interpret how these data can be used to personalize treatment for patients. Our newest test, the GPL-MycoTOX Profile (a urine test), was developed to combat the pervasive problem of mold exposure. We have heard from our clients that the marketplace lacked an accurate and affordable test to measure mycotoxins. We decided to use our expertise in liquid chromatography mass spectrometry (LC/MS) to meet this need. Using this technology, we have a very sensitive test, which is important because mycotoxins can cause serious health issues even in small quantities. Other mycotoxin testing uses ELISA technology, which relies on antibodies. Utilization of LC-MS/MS technology gives us a precise identification of all of our analytes, which prevents having false positive errors. For many of our compounds we are able to detect amounts in the parts per trillion (ppt), which is about 100-fold better than any other test currently available.

Species of Mold

We are currently measuring seven different markers in our test from multiple species of mold. This makes the GPL-MycoTOX Profile the most comprehensive mycotoxin test on the market. It is also the most cost-effective. Here are four of the genres of mold we

are evaluating: *Aspergillus*, *Penicillium*, *Stachybotrys*, and *Fusarium*.

Aspergillus is the most prevalent mold group in the environment. It has caused billions of dollars in damage to crops and livestock. The most common *Aspergillus* mycotoxins are aflatoxin, ochratoxin, patulin, and fumagillin. The main target of these toxins is the liver. These toxins have been found in all major cereal crops including peanuts, corn, cotton, millet, rice, sorghum, sunflower seeds, wheat, and a variety of spices. They are also found in eggs, milk, and meat from animals fed contaminated grains. Diseases caused by *Aspergillus* are called aspergillosis. The most common route of infection is through the respiratory system. *Aspergillus* can cause severe asthma when the mold colonizes the lung, forming a granulomatous disease.¹⁶

There are over 200 species of *Penicillium* that have been discovered. It is often found in indoor environments and is responsible for many allergic reactions. *Penicillium* is also a known contaminant in many different food items. Several different types of citrus fruits can become contaminated with *Penicillium*, but it can also contaminate seeds and grains. One reason that *Penicillium* is so common is because of its ability to thrive in low humidity. In the home, *Penicillium* can be found in wallpaper, carpet, furniture, and fiberglass insulation. The most common mycotoxin produced by *Penicillium* is ochratoxin. Ochratoxin is nephrotoxic, which means that it damages the kidneys. It is also carcinogenic.¹⁷

Stachybotrys is a greenish-black mold. This mold can grow on materials with high cellulose and low nitrogen content such as gypsum board, paper, fiberboard, and ceiling tiles. *Stachybotrys* is known for its production of the highly toxic macrocyclic trichothecene mycotoxins, which can be extremely neurotoxic. Two of the more common mycotoxins produced by *Stachybotrys* are roridin E and verrucarins. In addition to these mycotoxins, the fungus produces nine phenylspirodrimanones, as well as cyclosporine, which are potent immunosuppressors. These immunosuppressors, along with the

mycotoxin trichothecenes, may be responsible for the high toxicity of *Stachybotrys*.¹⁶

Fusarium's major mycotoxins are zearalenone (ZEN) and fumonisin. *Fusarium* fungi grow best in temperate climate conditions. They require lower temperatures for growth than *Aspergillus*. *Fusarium* grows worldwide on many different types of grains including corn and wheat. Exposure to mycotoxins from *Fusarium* can lead to both acute and chronic effects. These symptoms can include abdominal distress, malaise, diarrhea, emesis, and death. ZEN possesses estrogenic effects and has been implicated in reproductive disorders.¹⁸

Markers in the GPL-MycoTOX Profile

The seven different markers for mycotoxins in our GPL-MycoTOX Profile provide extensive coverage, allowing us to catch most mold exposures.

Aflatoxin M1: Aflatoxin M1 (AFM1) is the main metabolite of aflatoxin B1, which is a mycotoxin produced by the mold genus *Aspergillus*. Aflatoxins are some of the most carcinogenic substances in the environment. Aflatoxin susceptibility is dependent on multiple different factors such as age, sex, and diet. Aflatoxin can be found in beans, corn, rice, tree nuts, wheat, milk, eggs, and meat. In cases of lung aspergilloma, aflatoxin has been found in human tissue specimens. Aflatoxin can cause liver damage, cancer, mental impairment, abdominal pain, hemorrhaging, coma, and death. Aflatoxin has been shown to inhibit leucocyte proliferation. Clinical signs of aflatoxicosis are non-pruritic macular rash, headache, gastrointestinal dysfunction (often extreme), lower extremity edema, anemia, and jaundice. The toxicity of aflatoxin is increased in the presence of ochratoxin and zearalenone.¹⁹

Ochratoxin: Ochratoxin A (OTA) is a nephrotoxic, immunotoxic, and carcinogenic mycotoxin. This chemical is produced by molds in the *Aspergillus* and *Penicillium* genera. Exposure is primarily through contaminated foods such as cereals, grape juices, dairy, spices, wine, dried vine fruit, and

coffee. Exposure to OTA can also come from inhalation exposure in water-damaged buildings. OTA can lead to kidney disease and adverse neurological effects. Studies have shown that OTA can cause significant oxidative damage to multiple brain regions and the kidneys. Dopamine levels in the brain of mice have been shown to be decreased after exposure to OTA.²⁰

Sterigmatocystin (STC): STC is a mycotoxin that is closely related to aflatoxin. STC is produced from several genera of mold such as *Aspergillus*, *Penicillium*, and *Bipolaris*. It is considered to be carcinogenic, particularly in the cells of the GI tract and liver. STC has been found in the dust from damp carpets. It is also a contaminant of many foods including grains, corn, bread, cheese, spices, coffee beans, soybeans, pistachio nuts, and animal feed. In cases of lung aspergilloma, STC has been found in human tissue specimens. The toxicity of STC affects the liver, kidneys, and immune system. Tumors have been found in the lungs of rodents that were exposed to STC. Oxidative stress becomes measurably elevated during STC exposure, which causes a depletion of antioxidants such as glutathione, particularly in the liver.²¹

Zearalenone (ZEN): ZEN is a mycotoxin that is produced by the mold *Fusarium*, and has been shown to be hepatotoxic, haematotoxic, immunotoxic, and genotoxic. ZEN is commonly found in several foods in the US, Europe, Asia, and Africa including wheat, barley, rice, and maize. ZEN has estrogenic activity and exposure to ZEN can lead to reproductive changes. ZEN's estrogenic activity is higher than that of other non-steroidal isoflavones (compounds that have estrogen-like effects) such as soy and clover. ZEN exposure can result in thymus atrophy and alter spleen lymphocyte production as well as impair lymphocyte immune response, which leads to patients being susceptible to disease.²²

Roridin E and Verrucarins A: Roridin E and verrucarins A are macrocyclic trichothecenes produced by the mold genera *Fusarium*, *Myrothecium*, and *Stachybotrys* (i.e.

Mycotoxins

black mold). Trichothecenes are frequently found in buildings with water damage but can also be found in contaminated grain. These are very toxic compounds, which inhibit protein biosynthesis by preventing peptidyl transferase activity. Trichothecenes are considered extremely toxic and have been used as biological warfare agents. Even low levels of exposure to macrocyclic trichothecenes can cause severe neurological damage, immunosuppression, endocrine disruption, cardiovascular problems, and gastrointestinal distress.²³

Enniatin B: This is a fungal metabolite categorized as a cyclohexa depsipeptides toxin produced by the fungus *Fusarium*. This fungus is one of the most common cereal contaminants. Grains in many different countries have recently been contaminated with high levels of enniatin. The toxic effects of enniatin are caused by the inhibition of the acyl-CoA cholesterol acyltransferase, depolarization of mitochondria, and inhibition of osteoclastic bone resorption. Enniatin has antibiotic properties, and chronic exposure may lead to weight loss, fatigue, and liver disease.²⁴

Summary

Mycotoxins from mold are some of the most common and toxic compounds we are exposed to, and they can be incredibly harmful to our mental and physical health. The neurotoxicity caused by mycotoxins

can lead to a variety of neurological and neuropsychiatric problems including depression, memory loss, and Alzheimer's-like symptoms. Mycotoxins also cause many other health problems and can be carcinogenic. The Great Plains Laboratory, Inc. offers cutting-edge diagnostic tools that help identify underlying causes of symptoms like these and provides recommendations for treatment based on test results. The new GPL-MycOTOX Profile is a highly accurate and affordable urine test for mycotoxin exposure that can be run with our other urine tests including the Organic Acids Test (OAT), GPL-TOX (Toxic Non-Metal Chemical Profile), and the Phospholipase A2 Activity Test (PLA2). All of these tests are incredibly clinically useful in the assessment of underlying contributors to mental health and neurological disorders. Utilizing this combination of tests will help practitioners discover the underlying causes of many of their patient's symptoms, whether neurological, psychiatric, or otherwise.

References

1. Richard JL. Some major mycotoxins and their mycotoxicoses--an overview. *Int J Food Microbiol* 2007;119: 3-10.
2. Guilford FT, Hope J. Deficient glutathione in the pathophysiology of mycotoxin-related illness. *Toxins (Basel)* 2014;6:608-623.
3. Thrasher JD, et al. A water-damaged home and health of occupants: a case study. *J Environ Public Health* 2012; 2012: 312836.
4. Kimura R, et al. Pasteurella multocida septicemia caused by close contact with a domestic cat: case report and literature review. *J Infect Chemother* 2004;10: 250-252.

5. Jiang Y, et al. Aflatoxin-related immune dysfunction in health and in human immunodeficiency virus disease. *Clin Dev Immunol* 2008; 2008: 790309.
6. Boorman GA et al. Myelotoxicity and macrophage alteration in mice exposed to ochratoxin A. *Toxicol Appl Pharmacol* 1984; 72: 304-312.
7. Thuvander A, et al. Effects of ochratoxin A on the rat immune system after perinatal exposure. *Nat Toxins* 1996;4:141-147.
8. Doi K, Uetsuka K. Mechanisms of mycotoxin-induced neurotoxicity through oxidative stress-associated pathways. *Int J Mol Sci* 2011;12: 5213-5237.
9. Wang J et al. Effects of the trichothecene mycotoxin T-2 toxin on neurotransmitters and metabolites in discrete areas of the rat brain. *Food Chem Toxicol* 1998;36: 947-953.
10. Dutton MF. Fumonisin, mycotoxins of increasing importance: their nature and their effects. *Pharmacol Ther* 1996;70:137-161.
11. Fukui Y, et al. Development of neurons and synapses in ochratoxin A-induced microcephalic mice: a quantitative assessment of somatosensory cortex. *Neurotoxicol Teratol* 1992;14:191-196.
12. Belmadani A et al. Regional selectivity to ochratoxin A, distribution and cytotoxicity in rat brain. *Arch Toxicol* 1998;72:656-662.
13. Behrens M, et al. Blood-Brain Barrier Effects of the Fusarium Mycotoxins Deoxynivalenol, 3 Acetyldeoxynivalenol, and Moniliformin and Their Transfer to the Brain. *PLoS One* 2015;10: e0143640.
14. Page K, et al. Exposure to environmental mold affects interleukin-1 β expression and survival of newborn neurons. *Brain, Behavior, and Immunity* 2014; 40: e15.
15. Empting LD. Neurologic and neuropsychiatric syndrome features of mold and mycotoxin exposure. *Toxicol Ind Health* 2009; 25: 577-581.
16. Hodgson MJ, et al. Building-associated pulmonary disease from exposure to *Stachybotrys chartarum* and *Aspergillus versicolor*. *J Occup Environ Med* 1998;40: 241-249.
17. Galtier P. Pharmacokinetics of ochratoxin A in animals. *IARC Sci Publ* 1991;187-200.
18. Nelson PE, et al. Taxonomy, biology, and clinical aspects of *Fusarium* species. *Clin Microbiol Rev* 1994; 7: 479-504.
19. Bondy GS, Pestka JJ. Immunomodulation by fungal toxins. *J Toxicol Environ Health B Crit Rev* 2000; 3:109-143.
20. Park SH, et al. Effects of Mycotoxins on mucosal microbial infection and related pathogenesis. *Toxins (Basel)* 2015;7:4484-4502.
21. Engelhart S, et al. Occurrence of toxigenic *Aspergillus versicolor* isolates and sterigmatocystin in carpet dust from damp indoor environments. *Appl Environ Microbiol* 2002; 68: 3886-3890.
22. Zinedine A, et al. Review on the toxicity, occurrence, metabolism, detoxification, regulations and intake of zearalenone: an oestrogenic mycotoxin. *Food Chem Toxicol* 2007;45:1-18.
23. Bata A, et al. Macrocyclic trichothecene toxins produced by *Stachybotrys atra* strains isolated in Middle Europe. *Appl Environ Microbiol* 1985; 49: 678-681.
24. Follmann W, et al. The emerging *Fusarium* toxin enniatin B: in-vitro studies on its genotoxic potential and cytotoxicity in V79 cells in relation to other mycotoxins. *Mycotoxin Res* 2009; 25: 11-19.

Matthew Pratt-Hyatt, Associate Director of The Great Plains Laboratory, Inc., received his PhD in cellular and molecular biology from the University of Michigan. At The Great Plains



Laboratory, he is focused on assisting with diagnosis and treatment of mitochondrial disorders, neurological diseases, chronic immune diseases, and more. He specializes in developing tools that examine factors at the interface between genetics and toxicology. His work is bringing new insight into how genes and toxicants interact and how that interaction may lead to mental health disorders, chronic health issues, and metabolism disorders.

GPL-MYCOTOX



The Great Plains Laboratory, Inc.

GPL-MYCOTOX PROFILE

A Brand New Urine Test for Mycotoxin Exposure

Mycotoxins are some of the most prevalent toxins in the environment. Mycotoxins are metabolites produced by fungi like mold, which can infest buildings, vehicles, and foodstuffs. A majority of mycotoxin exposures are through food ingestion or airborne exposure. Diseases and symptoms linked to mycotoxin exposure include fever, pneumonia-like symptoms, heart disease, rheumatic disease, asthma, sinusitis, cancer, memory loss, vision loss, chronic fatigue, skin rashes, depression, ADHD, anxiety, and liver damage. With our new GPL-MycotoX Profile, we can identify mycotoxin exposures and make recommendations for detoxification treatments that have been effective.

Advantages of the GPL-MycotoX Profile

- GPL-MycotoX screens for seven different mycotoxins, from four species of mold, in one urine sample.
- GPL-MycotoX is the most comprehensive and competitively priced mycotoxin test available.
- GPL-MycotoX uses the power of advanced mass spectrometry (MS/MS), which is necessary to detect lower levels of these fungal toxins. This makes our test more sensitive and more accurate. Follow-up testing is recommended to ensure that detoxification therapies have been successful.



Dry Mouth



NEW Improved Formula with **XYLITOL**

SalivaSure™ Fast relief for dry mouth that's safe, effective and convenient.

- Naturally increases saliva production
- Fresh citrus taste
- Prevents tooth decay
- No interaction with medications
- Safe for diabetics
- Available in convenient flip-top container

Available from major distributors such as *Threshold, Emerson Ecologics, and Super Natural.*



Ingredients:

- Xylitol • Citric Acid • Apple Acid
- Sodium Citrate Dihydrate
- Sodium Carboxy Methyl Cellulose
- Dibasic Calcium Phosphate
- Silica Colloidal • Magnesium Stearate
- Stearate Acid.



Sellersville, PA 18960 • P: 215-453-2507 800-688-2276
F: 215-257-9781 • scandinavianformulas.com

FCT[®]* and Brain: “Doctor, My Brain Feels Rewired!”

by Savely Yurkovsky, MD

Since the primary importance of the brain in human health and quality of life itself has been wisely emphasized in medicine over millennia, the effective treatments of its malfunction dictate, likewise, primary importance. While, as pointed out by Hippocrates, the brain is our ultimate source of pleasure and joys as well as sorrow, pain, distress, and confusion, our medical statistics indicate an ominous relentless rise of its negative states. Americans today are swamped with epidemics of depression, OCD, bipolar disorder, addictions, autism, ADHD, poor memory, insomnia, Lyme and strep brain infections, Parkinson's, brain tumors and other brain pathologies. While it is impossible to present cases of many of these pathologies successfully treated through this FCT approach, this article will illustrate its main general concepts. These concepts are applicable toward all brain dysfunctions with only minor specific detail adjustments, as required by each individual patient.

A Case of Severe Sex Addiction

Hiding from his sleeping wife and three children, George had to call his buddy from the sex addict support group, Tom, at two a.m. to get some help in restraining himself from visiting a prostitute.

The visits, desperate attempts to resist these, and the intense 24/7 sexual urges had gone on for 20 long years, in spite of treatments from numerous therapists, psychiatrists, and sex addiction specialists. Even having sex with his wife, he could not carry out in a normal environment of the bedroom and comfortable bed but, rather, in a street type environment, as he said, such as in his car, against the garage wall or a tree with little regard for weather conditions.

“You see, doctor, I got used to having street, jungle type sex,” was his excuse. Doing it with his wife was a rather mechanical act because she was too normal to arouse him. She, likewise, even forgot when the last time he aroused her was. As a result, his wife or the woman physically closest to this sex machine was enjoying it the least. Another excuse, in this case offsetting the moral burden for patronizing prostitutes, was that he still maintained marital loyalty by avoiding bodily contact with the ‘professional’ women, using them as visual displays of their certain anatomy while gratifying himself from a distance. Besides the fact that the average members of this socially outgoing profession do not suffer from excessive shyness, George's ideal brand called for the most vulgar, loud, and dominant among these.

But even in spite of these frequent night releases, the daytime was still tormenting him with overwhelming sexual desire and fantasies ruining his

ability to run a business – particularly, meetings with businesswomen, who seemed to conspire by looking aggressive, domineering, or being the very type that always triggered the hot button of overwhelming surrender of his masculinity into their hands. And literally so. Thus, instead of his mind concentrating on how best to handle his business negotiations with them, it was hovering in a fantasy land of how else they would handle his penis. By virtue of the same ‘conspiracy’, they all wore particularly short skirts, hardly covering their crossed muscular legs, while seductively smiling in order to add even more fuel to an already raging fire.

However, the most vicious moves, they would save for the end. There, as they already had him dissociated from reality and stuck in a fantasy land, the businesswomen would grow increasingly impatient in demanding answers to their endlessly repeated questions. This would automatically upgrade their dominance level to such a level that George felt his brain and penis were becoming one. By the time they were leaving his office and angrily demanding that he finally deliver his answers over the phone immediately, he felt ready for a psychiatric ambulance. These and many other similar encounters would ruin many days of his life. Doing business with the only remaining and certainly inferior part of mankind, men, including his employees, was no better. Besides, their somehow

* Field Control Therapy[®] was founded by Savely Yurkovsky, MD, based on the concepts of the most fundamental science of all, physics, that the entire human physiology is governed by energy fields. This concept, among other reputable scientists, has been emphasized in the work of Professor Emeritus of materials science and the former chairman of this department at Stanford University, and FCT advisor, William A. Tiller, PhD.

FCT® and Brain

being void of breasts and other noble parts, their overall crude nature kept distracting him from hovering in the sweet cloud of his very existence – sexual fancies.

Also, suspicion that men always seek “to screw me over in business” was not helping healthy work relations either. Not surprisingly, he could hardly keep his business alive. George and his wife have expressed a big concern that, on the whole, his intense sexual obsession and related emotional and business problems may cause him to become truly insane someday.

What to Do?

The shortest and simplest way to approach any disease must always start with identifying and addressing the very factors without which it would not even come to exist in the first place. These are its main causes which, like bullets, after invading that person’s brain, or any organ, changes the function from normal to abnormal. This is what ultimately establishes and maintains the field of disease that will exist forever, until the bullets are removed. So, how do we identify the main bullets which have lodged in George’s brain and, possibly, in his sex organs too, leading to their hyperactivity? Two main diagnostic tools are necessary to determine the nature and location. One, a patient’s medical history concerning the age of onset of a problem and triggering environmental factors: infections, pollutants, side effects of medical or dental treatments, substance abuse. Other factors might be physical or emotional assaults and certainly genetic predispositions to certain diseases. The second tool is bio-resonance testing that non-invasively enters any internal organ to determine these bullets in seconds. Following this medical intelligence gathering, a physician must be capable of using the only two most effective types of therapeutics to remove the bullets, which would lead to resetting the fields of invaded organs from pathological to

normal. In the case of the most common offenders in our daily life, environmental factors, these are best addressed through causative homeopathy, described in detail elsewhere.¹ Cases of purely physical, emotional, or genetic bullets call for classical homeopathy. Confusing the nature of the bullets and forcing disease into limitations of one’s medical approach assures failure. This has been the case not only with George, but many other diseases where dozens of alternative approaches and conventional treatments fail.

In the case of George, his history was pointing to mainly genetic and also clear causes of emotional injuries in the past. He experienced an early onset of intense sex drive from the age of five and still remembered feeling humiliation when his sister cheated him on their initial agreement of mutual exposure of their private parts; after he delivered his part of the deal, she forfeited hers. He was also regularly humiliated and dominated by his aggressive alcoholic mother who constantly physically and verbally abused him and reminded him that he was “a piece of shit.” This led to a state or field in his brain which he managed to sublimate for his own ‘good’ into sexual fantasy of surrender to overpowering women. Yet, with men, he was forced to hide these weaknesses as a deep secret, under the cover of being ‘an aggressive strong man’, lest they take advantage of him. All in all, his day life amounted to hiding the secret of worthlessness and sexual mania, with the nighttime escape of letting these out by visiting prostitutes.

While classical homeopathy does, fortunately, offer us remedies for excessive sex drive, these are as many as 50; only one correctly chosen remedy must also cover other important individual traits of illness to work. This would be accomplished by stimulating the body’s physiologic defenses against the similar field of disease, contained in the remedy, and resulting in mutual cancellation. This process of fitting in the other traits or covering the totality of the main symptoms, narrowed my choice down to just five close candidates, yet still leaving me with some 80% error margin. This, I usually

succeed in overcoming by using bio-resonance testing blindly, not looking at the remedy names. However, the chosen five were lacking in covering one seemingly minor but a very peculiar act in George’s narration of his ordeal, namely giddy giggling spells, completely inappropriate for a man reporting his entire life being filled with anguish. Such a weird trait, under the circumstances, suggested another serious pathology, detachment from reality, and offered the only four remedies that contained both inappropriate giggling and excessive sex drive with one of these prepared from pot – *Cannabis indica*.

Testing it blindly through bio-resonance testing, along with its other competitors, made it the winner. Not coincidentally, he did admit to smoking pot in the past. Next step, testing for the effective potency resulted in the first prescription – *Cannabis indica* 1M. Speeding this case up due to space constraints, *Cannabis indica* and the following three remedies *Hyoscyamus niger*, *Thuja occidentalis*, and *Staphysagria*, each prescribed for excessive sex drive and their corresponding mental-emotional fields of suspicion, aggression, secrecy, uncertainty of self, and low self-esteem, melted away these fields.

Within a year or so, all of these pathologies were gone; his desire for prostitutes and street sex became not only irrational in his mind but the subjects of funny jokes. Even the most troubling, mental-sexual subjection to aggressive businesswomen was resolved too, as they all have finally decided to relinquish both their wicked conspiracy and the rights to his penis. He, for the first time, genuinely appreciates his wife as a woman dedicated to him and his children, and she has suddenly become his sole, most desired, sex mate. She, likewise, for the first time in their marriage, shares in this desire too.

Even his elderly, but still just as devious mom, who had always succeeded in blackmailing him for her approval, stopped getting anywhere: “Well, if she thinks that I am not OK, for any reason, that’s tough, who cares.” His business picked up on his transformation too and turned prosperous.

1. *The Power of Digital Medicine* by Savelly Yurkovsky, MD. Science of Medicine Publishing, 2003.

I continued seeing him periodically over a few years, whenever, as a good Daddy, he brought his children to my office, alone or along with his wife, reaffirming, with confidence, that "all has been well".

A Case of Bipolar Disorder

A man in his sixties had a life-long history of bipolar disorder and over a dozen psychiatric admissions for it. Both conventional and integrative psychiatry failed to control his problems. His usual state of existence was one of mainly automatic, robotic functioning that was periodically broken by intense mania spells once he was presented with any exciting projects. Under the circumstances, an ordinary project concerning only his temple or town would wind up expanding, in minutes, to a magnitude of state, national, and worldwide levels with him talking non-stop. Following this, depression set in.

Bio-resonance testing indicated residues of several recreational drugs in his brain and also lead, mercury, and electromagnetic radiation. Following testing, he did admit that "the use of computer makes me fuzzy and tired" and that "I did use many drugs in the past." In his case, unlike the previous one, the treatment was half-and-half. Causative homeopathy addressed both the presence of all of the toxic substances present in the brain and peripheral organs; and, for his clear-cut constitutional or inborn mental infirmities, two classical homeopathic remedies were used: *Lachesis mutus* and *Sulphur*. His harmful house and computer-related electromagnetic environment was reduced through very effective German Memon technology. His bipolar state ceased to exist and, on occasion, when his PSA prostate marker went up (he had a history of prostate cancer), FCT intervention invariably brought it down.

A Case of Cured, Long-Lasting Depression

Being only in his twenties, Mr. K had already unsuccessfully tried over a half-dozen psychotropic drugs over the preceding 12 years for his depression, anxiety, brain fog, poor memory,

and fatigue. Based on bio-resonance testing, causative homeopathy was administered to address the overlooked Lyme disease, mercury, parasites, and residual effects of the psychotropic agents, all affecting his brain. He was also significantly helped by German EMF protective Memon technology that has greatly helped his EMF sensitivity along with FCT treatment. Over the last several years, he has remained virtually free of his brain symptoms and fatigue, as well as of psychotropic drugs.

Cured OCD, Hyperactivity, and Aggression in a Child

Even though nine-year-old Claire was even younger than Mr. K, our

FCT® and Brain

mental health system was already prepping her to become a life-long drug store consumer. After a year of fruitless psychotherapy, as if there was something wrong with her attitude, the child psychologist gave up and referred her to a psychiatrist for medicating. Fortunately, her parents were intelligent enough to seek better options. Just as fortunately, she was cured after only two treatments, following FCT bio-resonance testing and causative homeopathy which promptly addressed the causes of her brain disorders. These

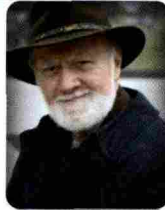
continued on page 33 ➤



FCT: Its Major Breakthrough in Bio-Resonance Testing and Combining the Best of Medicine – Two-Day Training Event, November 10-11, 2017 in Chappaqua, New York

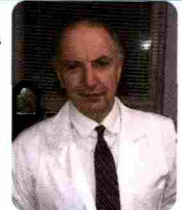
Conducted by FCT founder, Savelly Yurkovsky, MD

The only medicine that produces consistent reversals of chronic diseases.



"Future medicine will be based on controlled energy fields." Professor Emeritus of materials science at Stanford University and FCT physics advisor, William A. Tiller, PhD

"After practicing for 15 years, I assembled a lot of technology. I started as a classical homeopath, but realized its limitations. Likewise, I have been through VEGA, Kirlian, EAV, IV's including chelation, DMPS, Hydrogen peroxide, Hydrochloric acid and the usual vitamin-mineral protocols. Also, neural therapy, dark field microscopy, biological terrain assessment and complex homeopathy. I can see an upgrade on the horizon, but, I am tired of running after all these things. I feel that my concept of 'underlying causes' needs to make a shift into a different level." AH, ND.



"Your practice can prosper by practicing the future medicine, today. Otherwise, it will continue with this common trend, as stated by this frustrated ND." – Savelly Yurkovsky, MD

I. Unraveling the best kept secret in medicine. When a practitioner:

1. Has the proper diagnostic tool to determine exact causes of disease
2. Possesses the right treatment to address these causes and
3. Conducts this safely, he does not need hundreds of other tests, treatments, products and machines. Yet, he becomes far more successful in treating virtually any disease and transcends specialty barriers, far better than disease 'specialists'.

II. BRT, Basic Level: virtues, flaws & traps

1. Bio-resonance testing in overcoming the main deficiency of all other tests – inability to determine causes of disease, inside the internal organs.
2. Superficial testing that results in treatment failures and side effects
3. More errors resulting from applying force in applied kinesiology and EAV
4. FCT's 100% force-free testing method
5. Testing in an energetically misleading environment
6. Unrecognized subjectivity in testing leading to ineffective treatments
7. Errors in computerized EAV testing

III. FCT's Breakthrough in BRT: Testing at multiple energetic layers revealing multiple causes of disease, the key to a successful treatment!

1. Avoiding blocks in the testing caused by improper energetic environment
2. Addressing common blocks to treatments
3. The significance of Professor Tiller's emphasis on "control" versus just energetic medicine
4. How to identify truly sound bio-resonance testing

"Thank you for another excellent training."
"If I were to practice a single medical modality, it would be FCT."

Mark Orbay, ND, Ottawa Canada

"THANKYOU beyond words for a profound life-changing experience at your Chappaqua clinic training, this past weekend. Soooooooooo happy to have attended."

Chiropractic Physician, Clearwater, FL

For the best learning experience, a certain level of preparedness is necessary. Contact our office for this, other information, and an early registration (strongly advised):

www.yurkovsky.com • info@yurkovsky.com

P: 914-861-9161 • F: 914-861-9160 • 37 King Street, Chappaqua, NY, 10514

SYI Integrated Health Systems, Ltd., Savelly Yurkovsky, MD, President

Patient referrals are sought throughout the world.

"The Memon is a revolutionary product that has transformed my health & life. The root of the issue is manmade electricity disturbing the body's natural electrical processes, and Memon is the best product to eliminate negative energy from EMFs! It has made such a huge and very dramatic difference in our home. My fatigue, palpitations, panic and headaches all have gone. Thank you Memon & Dr. Yurkovsky for recommending it!"

P: 914-861-9161 • F: 914-861-9160

37 King Street, Chappaqua, NY, 10514

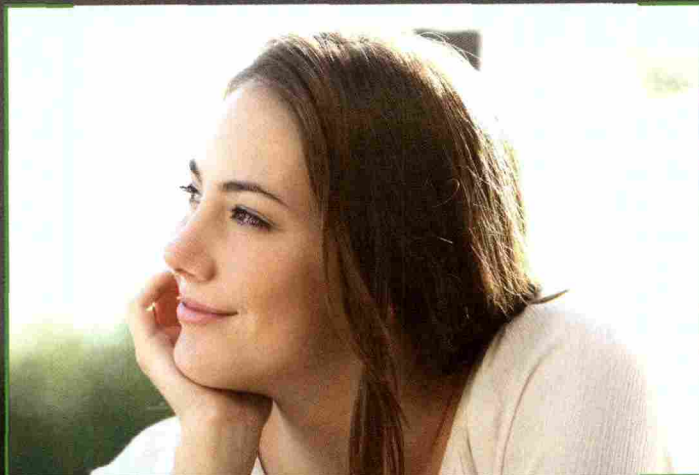


The best EMF protective devices in the world, Memon – *Renature Your Life* – found at www.yourserenityinc.com



memon and
your
serenity, inc.

STAND FOR MORE.



**GET MORE OUT OF LIFE.
AND YOUR SUPPLEMENTS.**

FAMILY OWNED for over 45 YEARS

TRUTH IN LABELING

RESTORATIVE NUTRIENT LEVELS

PRIVATE LABEL

NEVER SETTLE FOR LESS

SUPPORTS HEALTHY
NEUROLOGICAL
FUNCTION AND MEMORY*

based in
VERMONT, USA



DaVinci *Laboratories
of Vermont*

www.davincilabs.com

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

were Lyme and strep infections resulting in PANDAS, also worm infection, and mercury intoxication. The parents also have helped much by reducing her sugar intake and lowering EMF load on her brain by protecting the home through Memon technology.

Even though her problems, like many children, started early in life, these didn't have to be genetic, requiring constitutional classical homeopathy, but were due to acquired environmental bullets with some of these, such as mercury, even in utero. From the mom's own words, the progress was "huge and dramatic" with their daughter becoming "just normal."

50 Years of Recurrent Spells of Loss of Consciousness

In spite of Mr. F's countless conventional diagnostic work-ups and just as many visits to emergency rooms over a long 50-year time span, his recurrent episodes of suddenly passing out remained a mystery. Yet, both ended shortly after his evaluation and treatment with FCT, using just a few energetic drops for worm infection and the underlying heavy metal toxicity.

A Deadly Brain Tumor in Advanced Stage

The seriousness of this brain cancer, glioblastoma, in a young Iraqi War veteran can be well-expressed in his statement: "I was given only four months to live." Although due to massive oncological treatments with brain surgery, chemo and radiation, he was still alive two years later (when he started with FCT), yet his condition kept progressing from bad to worse. Even after the last hope – immunotherapy – began, he felt worse with his MRI brain scan showing an increase in lesion size, necessitating yet another brain surgery. Following this, he had to discontinue the immunotherapy protocol due to intolerable side effects and just continue a mixture of oncological treatments in hopes for the best. However, after FCT began to remove the numerous carcinogenic bullets from his brain and immune organs, things began dramatically changing for the better, at

least so far. For the first time, his MRI scan, this June, indicated cessation of the lesion growth. Even more encouraging, his latest brain MRI, in July, showed a regression of the lesion. This, combined with his statement that "I haven't felt this good in years," instills a real hope that he might become a rare, if not the only case, where this type of aggressive tumor in its initially terminal stage could be completely reversed.

A Case of Cured Schizophrenia

Suddenly, as if out of the blue, Mr. M, a healthy man in his 20s, developed schizophrenia. Psychiatric medications did little to dissipate his delusions of him becoming a woman who wanted to date men, hovering above earth, and being plotted against. Much to my surprise, the bio-resonance testing could not detect any more serious causes for so serious a pathology than just an ordinary flu virus. I was certain that something was missed. Nevertheless, and for lack of better options, only one drop of energetic flu virus was administered. Without my feeling overconfident about the outcome, I still asked him to call and let me know in a few weeks of his response to the remedy. He did so and said, then, that he felt completely cured. Some years later, when he brought his fiancé to my office for a treatment, he confirmed that his schizophrenia had never returned.

"Doctor, My Brain Feels Rewired!"

This young woman has spent several years on the usual massive antibiotics, herbal and supplement treatments, dispensed by "Lyme Literate Doctors" and a nurse practitioner for Lyme, Babesia, and Bartonella infections. Yet,

FCT® and Brain

at the end of the day, her fatigue, brain, seizures, and other related problems, as is the case with the majority of the victims of such treatments, had all returned. "I have hit a wall and had to quit," she said. Also, in the process, she developed very uncomfortable eye symptoms, including diminished vision, painful brain tension, along with difficulty in finding and releasing the right words. Her bio-resonance testing indicated that Lyme and co-infections were not the only problems affecting her brain, eyes, and the rest of her. Her very immune system and brain were invaded with viruses, molds, yeast, environmental pollutants, and antibiotics.

On the whole, the key immune and endocrine organs, as well as CNS, energetically tested as barely alive. Causative homeopathy, FCT's way, was administered along with Memon EMF shielding, which led her to produce the following statements after only a few treatments:

It's amazing, I'm like a totally different person. I haven't had a single seizure or episode of any kind. I used to not be able to look at oriental rugs because the detail in them would appear to me to be moving, wavy lines – I would get dizzy and sometimes seize. I can look at them fine now. I have more energy than ever – my husband says I have even more energy than him, and that he feels like he's having an affair because he doesn't recognize me anymore – not *this* me at least!

Also, "Doctor, my brain feels rewired!" ♦

Savely Yurkovsky, MD, has evolved a novel medical model that interfaces important knowledge from biology, medicine, toxicology and physics. Its primary focus is on the most important aspect of chronic diseases – its causes – along with the most effective diagnostic and therapeutic means to address these. This has transformed the often-imprecise medical interventions into a far more effective, exact and predictable science. He has founded a teaching organization, "SYY Integrated Health Systems, Ltd.," which provides training in this medical system under the concept of FCT®, Field Control Therapy. This concept as medicine of the future was suggested by Professor Emeritus of materials science at Stanford University, William A Tiller, PhD. He has presented it at many professional symposia in both the US and Europe, including the annual Bio-terrorism 2005 conference: "Unified Science & Technology for Reducing Biological Threats & Countering Terrorism" with affiliation to the Homeland Security Office, and Harvard Medical School, among others. Dr. Yurkovsky has been nominated for the prestigious Bravewell Leadership Award for "significant contributions to the field of medicine" and "compelling vision for the future of medicine," in 2005. He has authored numerous articles and the book, *The Power of Digital Medicine*, that was endorsed by prominent scientists from MIT, Columbia, and Stanford Universities and contributed a chapter on homeopathy to the textbook of *Integrative Gastroenterology*, edited by the Chief of Integrative Gastroenterology at Johns Hopkins University medical school, Gerard Mullin, MD. Dr. Yurkovsky maintains a private practice in Chappaqua, New York.

Brazil “Nuts” Gather to Fight Inflammation 30th Annual Orthomolecular Society Meeting Report

John Parks Trowbridge, MD, FACAM

“Grab your coat and get your hat, leave your worries on the doorstep – Life can be so sweet on the sunny side of the street.”¹

While we “alternative docs” like to think that we totally “break the mold” of “parochial local practice” by traveling to meetings where our like-minded friends and professors gather every few months ... it simply ain’t so. There is, to be sure, a wider world out there where the pace of adopting practical scientific advances is often faster than in the United States.

The sheer persistence of our esteemed Brazilian colleague, Efrain Olszewer, MD, has created the largest general integrative medicine annual conference on the planet: Congresso de Prática Ortomolecular [<https://www.congressoortomolecular.com.br/>; <https://www.facebook.com/congressopraticaortomolecular/>]. Some 2,000 practitioners gathered for the 30th annual meeting, hosting speakers from 18 countries presenting over 90 lectures in the 3-1/2 days of preconference and general meetings. Active English, Spanish, and Portuguese translations were available for several sessions; professors and attendees represented all countries in South America (except Venezuela), several in Central America, Spain, Portugal, Italy, Germany, and a handful of speakers from North America. (Whom did I miss?)

Those who fear being isolated at a convention center in a foreign country should know that the large lecture and exhibit halls are on an upper floor of an elegant shopping center in São Paulo. Area hotels and restaurants feature delightful cuisine – and the water is safe to drink!

Dr. Olszewer, internist and cardiologist, has authored 77 books in health and medicine and is editorial director of the *Journal of Oxidology*. He serves as a director and professor of orthomolecular medicine, free radicals research, and longevity at the Faculty of Health Sciences – FACIS [Faculdade de Ciências da Saúde de São Paulo; <https://facis.edu.br/>], which offers a broad range of campus and online degrees and technical

programs in health and integrative medical topics. He has addressed many of the advanced training courses in heavy metal toxicology sponsored by the American Board of Clinical Metal Toxicology. With his extensive background in basic and clinical sciences, Dr. Olszewer can speak, literally, for hours on many topics – weaving his concepts using a blackboard rather than slides. His conference planning brings that same level of expertise to the many lectures each year. [efraorto@terra.com.br; www.fapes.net; www.congressoortomolecular.com.br]

Clinical research, of course, is of greatest interest to *Townsend Letter* readers, and the Congresso does not disappoint. Barry Sears, PhD, President of the Inflammation Research Foundation, shared latest information on the role of resolvins – first characterized in 2002 [Serhan, *JExpMed* 196:1025]. Lasting only for minutes after production in body tissues, resolvins are critical to retard initiation and to accelerate resolution of inflammation to promote cellular repair. Studies confirm that both omega-3 fatty acids, EPA and DHA, are essential and dose-related substrates for generating resolvins, and higher-than-expected dietary levels are needed in more extreme conditions. Extremely compromised patients might require lengthy treatment at 10-15 grams/day, gradually reducing to 2-3 grams/day for general health. Rethinking of 21st century medicine, notes Dr. Sears, must focus on reduction of cellular inflammation where diet will be the “primary drug.” Published reports where use of high-dose omega-3 fatty acids allowed recovery from coma/severe brain trauma, restoration of vision in age-related macular degeneration, and improvement of major depression are compelling.

Dr. Sears further described results with a new “super-protein” that looks like, tastes like, and has the versatility of traditional pasta. This advanced technology builds a “protein-cage” that surrounds a carbohydrate inner core to alter the hormonal responses in the gut. Results with this medical food include increased satiety with reduction of “cravings,” and a very significant reduction of insulin resistance along with an increase in muscle mass in placebo-controlled trials. Along with omega-3 fish oils and

polyphenol supplements, normalization of cellular inflammation control processes can be encouraged. [Commercial disclosure: Dr. Sears is best-selling author of *The Zone* (1995) and owns Zone Labs, a functional food company offering omega-3 fatty acid supplements and functional food products.] [bsears@drsears.com; www.zonediet.com].

Retired former Chairman of the American Board of Clinical Metal Toxicology and talented neurologist, Robert A. Nash, MD, FAAN, FACAM – who developed the Nash Serotonin Index questionnaire to help diagnose hidden low levels in various psychological disorders, addiction, pain syndromes, and sleep disturbance – had served on the Data and Safety Monitoring Board for the original TACT study (Trial to Assess Chelation Therapy) sponsored by the National Institutes of Health. He presented a persuasive summary of the trial conclusions from 2012, which suggested a provocative reduction over four years follow-up of cardiac events (heart attack, bypass or stenting, hospital admission, or death) in treated participants who had suffered an earlier myocardial infarction. This is one of the safest studies ever done by the NIH and concerns about safety of chelation have finally been set aside. Data were even more conclusive for diabetic patients, a population for whom blood sugar control provides only marginal benefit with evolving coronary disease. Dr. Nash announced that the NIH has funded a new trial specifically to study cardiac outcomes with chelating diabetic patients – TACT2 – once again under the guiding hand of Florida cardiologist Gervasio Lamas, MD. [Dr. Nash: bobnash59@gmail.com; Dr. Lamas: gervasiolamas@gmail.com]

Long respected for his comprehensive and insightful presentations, Russell M. Jaffe, MD, PhD, CCN – recipient of the International Scientist of the Year award (Oxford, England) and Fellow of the National Academy of Clinical Biochemistry – shared a delightful review of current understandings of cardiovascular conditions (and degenerative diseases overall) with regard to biochemical and physiological strategies for prevention and treatment. He provided scientific rationale for a profile of studies – predictive biomarkers – to assess the degree

1. Songwriters: Jimmy McHugh and Dorothy Fields, “On The Sunny Side Of The Street” lyrics © SHAPIRO BERNSTEIN & CO. INC.

of oxidative injury and epigenetic reserve. This functional approach allows for specific treatment modalities to address identified individual strengths and risks. Epigenetics, our *lifestyle* activities, account for 92 per cent of health issues and adequate modifications are critical for turning on/off certain genes directing cellular biochemistry as well as proteomics, what the genes produce.

Key biomarkers to guide therapy for best outcome and least risk include hemoglobin A_{1c} (insulin/blood sugar/carbohydrate metabolism), high sensitivity C-reactive protein (hsCRP/inflammation), homocysteine (methylation/repair/detoxification), LRA (lymphocyte reactivities and immune tolerance), pH first morning urine (metabolic acidosis/cellular mineral status), vitamin D3 (neurohormonal/cellular mutations), omega 3/omega 6 ratio (initiation/resolution oxidative damage), and 8-oxo-guanine (environmental toxins/oxidative damage). Each is to be interpreted based on the best outcome value (or range) for that test. He encourages the sustainable Alkaline Way™ diet, sulfur-based foods to enhance biological detoxification and toxin protection, and control of delayed hypersensitivities to retard inflammatory damage and restore repair mechanisms.

Dr. Jaffe also explained the scientific rationale for specific nutritional support, including ascorbate (vitamin C) whose need is determined by the C Cleanse, enhanced magnesium uptake and chaperoned delivery of this essential mineral, and other directed interventions based on individual needs to achieve better outcomes. To “live in harmony with your nature,” you need first to discover your nature (physiology) and then find the secret to compassion, gratitude, and contentment. [Commercial disclosure: Dr. Jaffe is founder of PERQUE Integrative Health, offering unique nutritional supplements and evidence-based suggestions; developer of the LRA lymphocyte delayed hypersensitivity *ex vivo* cell cultures performed by his clinical lab; and is a Fellow and one of the founders of the Health Studies Collegium research foundation.] [rjaffe@PERQUE.com (www.PERQUE.com); rjaffe@ELISAAC.T.com (www.ELISAAC.T.com); rjaffe@4HSC.org (www.4HSC.org)]

Houston, Texas, chelation/integrative medicine specialist John Parks Trowbridge MD, FACAM, addressed an extensive list of etiologies contributing to the non-specific diagnosis of “fatigue.” He mentioned outstanding results treating a major factor – arthralgias, joint injuries, and other structural issues – with a recently marketed patent-pending preparation of homologous mesenchymal “stem cells” obtained from

umbilical cord blood, far superior to years of clinical reports using an autologous cell “soup” harvested and prepared from a patient’s belly or butt fat or bone marrow. He offered a brief note of more recent experience with finding and successfully treating deep fungal infections in the blood – due to *plant fungi!* Dr. Trowbridge’s current investigations include treatment of so-called “idiopathic” diseases – leukemia, leukopenia, kidney failure, severe dermatoses, elevated PSA, others – with aggressive anti-fungal regimens. [jptfixpain@earthlink.net; www.healthCHOICESnow.com]

Two-time *unshared* Nobel Prize winner Linus Pauling, PhD, was lambasted in the general public and the medical community for his claims regarding vitamin C to help balance biochemistry and reverse degenerative conditions. Virtually none of those critics knew of his foundational work in the 1940s, almost single-handedly defining the field of protein chemistry, research perspectives he brought to all later inquiries. Matthias Rath, MD, of Germany, was intrigued by Professor Pauling’s work on vitamins. Recognizing the value of Rath’s theories on vitamin deficiency and cardiovascular disease, especially in connection with a novel risk factor, Lipoprotein(a) [Lp(a)], the legendary chemist invited his active participation at the Linus Pauling Institute in Menlo Park, California. Conference attendees were fascinated as Dr. Rath wove the story of their collaboration, concluding with incontrovertible evidence that Lp(a) serves as a strong, flexible seal to protect blood vessel walls – structurally weakened by vitamin deficiency – from further injury. Their experiments showed that this mechanism is induced in species that are ascorbate deficient because they are incapable of vitamin C production. The observations bear particular significance for human cardiovascular disease, since we lack endogenous ascorbate synthesis.

Dr. Rath opines that “[e]pidemics persist only as long as the genuine cause of a disease is not understood and, therefore, no specific preventive and therapeutic measures can be developed.” Perhaps most telling is how Professor Linus Pauling regarded the findings of their vitamin C-Lp(a)-cardiovascular disease experiments: “There now exists the opportunity to reduce greatly this toll of death and disability [from coronary artery disease] by the optimum dietary supplementation with vitamins and other essential nutrients.”

Dr. Rath has taken seriously the charge to help as many people as possible to avoid or reduce the tragic consequences of preventable occlusive cardiovascular disease

in his lectures around the world. Dr. Rath is actively pursuing educational programs to have physicians and populations around the world share these scientific findings so that preventable deaths can be *prevented!*

We call upon our colleagues in science and medicine to join in a vigorous international effort to investigate the value of vitamin C and other nutrients in controlling heart disease.

We call upon every human being to encourage physicians and medical institutions to take an active part in this process.

THE GOAL OF ELIMINATING HEART DISEASE AS THE MAJOR CAUSE OF DEATH AND DISABILITY IS NOW IN SIGHT!

– Matthias Rath and Linus Pauling

[Commercial disclosure: The non-profit Dr. Rath World Health Foundation owns Dr. Rath USA, Inc., producer of Cellular Health nutritional supplements.] [www.drrath.com; www.drrathresearch.org]

Okay, sadly you *missed* the Congresso this spring. My brief review omits exciting concepts from the many dozens of lectures presented, often with simultaneous translations. Plan now to attend the *certain-to-be-remarkable 31st!* Your passport will require a Brazilian visa, easily available to professionals traveling to an educational meeting. Apply eight weeks ahead of travel to avoid any snags. Hey, pack your bags, grab your coat, and get your hat!

Congresso information available from coordinator:
Debra Olszewer: deolszewer@terra.com.br
centro internacional de medicina preventiva
rua campevas 211
05016-010 são paulo
Brazil

The program for the June 2017 general sessions can be viewed at http://docs.wixstatic.com/ugd/290abf_428f7a57138645598bef498c5da0136c.pdf

John Parks Trowbridge, MD, was recognized as a Fellow of the American College for Advancement in Medicine in 1990 and honored with a Distinguished Lifetime Achievement Award by the International College of Integrative Medicine in 2014. He has lectured around the world on integrative medicine topics – 2012 and 2017 in Brazil – and is listed in over five dozen volumes of *Who’s Who*. Bantam Books’ best-selling book, *The Yeast Syndrome* (1986), has been widely acclaimed. Released in June 2017 is his latest book, *Failure is not an Option*, detailing stunning successes with a unique patent-pending “umbilical cord stem cell” product. He has won two Editor’s Choice awards for chapters in *Mastering the Art of Success* (amazon.com Best-Seller on release July 13, 2017) with Jack Canfield and *Driven!* (September 2017) with Brian Tracy. In preparation is his chapter in the forthcoming book *The Big Answer* with Larry King. Coming in 2018 will be the flagship volume (on heart disease) in his new *Doubt Your Doctor™* book series. He maintains an active clinical practice – Life Celebrating Health – in Humble (Houston), Texas; 1-800-FIX-PAIN; www.healthCHOICESnow.com.

The 5th International Biobran Workshop – New Modern Ways to Treat Cancer

by Prof. Serge Jurasunas

The 5th International Biobran Workshop (June 9-11, 2017), set up in the beautiful and medieval city of Krakow, Poland, was attended by over 150 doctors and representatives of Biobran that came from England, Germany, Hungary, Slovakia, Israel, and Portugal.

Personally, this was not the first time that I had participated in a Biobran seminar or workshop.

Several times in the past, workshops were organized at the University of Oxford, St. Anne's College. In 2007, I delivered a 2 hour 30 minute lecture on cancer and Biobran at the Lithuanian University of Vilnius, Faculty of Medicine, and also in Budapest. The workshops were organized by DHD Europe (Slovakia), which serves as the headquarters of the Daiwa Lab in Japan that manufactures the immunomodulator Biobran.

For over two decades, Biobran has attracted the interest of researchers because of how quickly it activates natural killer cells along with other anticancer properties. Many doctors are using Biobran in their cancer protocol to restore immune cell activity. Today, the immune system seems to attract more conventional oncology practitioners who want to improve chemotherapy effectiveness, minimize side effects, and increase quality of life. In fact, Biobran has become well known all over the

world, being distributed in about 50 countries.

Dr. Mamdooh Ghoneum, PhD, Chief of Research at Charles Drew University of Medicine and Science, and Research Associate at School of Medicine, University of California-Los Angeles (UCLA), is the author of impressive research on Biobran and has published a large number of scientific papers on

NK cell activity compared to healthy individuals; natural killer cells are our first line of defense against cancer. Several studies have shown that Biobran increases NK cell granulated perforin and granzymes that, in turn, kill cancer cells by apoptosis. Over the past decades, many new studies have shown the efficacy of Biobran to synergize with various chemotherapy agents such as daunorubicin and paclitaxel.

My presentation, "New Modern Way to Treat Cancer," included data showing the synergy of Biobran with chemotherapy and also the synergy of Biobran together with curcumin that improves the ratio Bcl2/Bax and how they stop the cellular cycle at G2, S or M and, therefore, increase apoptosis to improve the effectiveness of chemotherapy agents. Furthermore,

Biobran reduces side effects from chemotherapy and improves quality of life even in terminal cases, as I showed with some Japanese studies but also with some of my own cases. Of course, I presented a number of clinical cases to support the presentation including cancer of the breast with liver and bone metastasis, stomach cancer, one case of prostate cancer with bone metastasis, and colon cancer stage IV with lung metastasis. Bone scans and other before and after scans demonstrate how tumors and metastasis can be



(Left to Right) Joseph Brenner, MD; Hegyi Gabriella, MD; Professor Serge Jurasunas, ND; Hajt6 Tibor, MD; Rupert Handgretinger, MD

Biobran and cancer explaining how natural killer (NK) cells can be restored in cancer patients using Biobran/MGN3.

What Is Biobran?

Biobran is a modified arabinoxylan rice bran, enzymatically treated with an extract from shitake mushroom mycelia that permits, unlike other fibers, quick intestinal absorption into the bloodstream, activating a number of cytokines that, in turn, activate NK cells, dendritic cells, and macrophages. Most cancer patients have a low basal

eliminated with integrative oncology or even, as in a case of prostate cancer with bone metastasis, without conventional medicine.

Three important names in the field of oncology were participating in this workshop delivering several interesting papers related to the immune system, natural killer cells, and Biobran:

- Prof. Rupert Handgretinger, MD, PhD, Director of Department of Pediatric Hematology/Oncology, University Hospital Tübingen, Germany. (Lecture: Harnessing Natural Killer (NK) Cells for Cancer Immunotherapy);
- Prof. Hajtó Tibor, MD, PhD, immuno-oncologist, Department of Immunology and Biotechnology, Medical University Pecs, Hungary. (Lecture: Evidence of Based Benefit of the Immunomodulator Biobran in Tumor Therapy.) He also showed impressive, well-documented clinical cases.
- Joseph Brenner, MD, former Chief Oncologist at the Wolfson Hospital and Director of New Hope Clinic and Medical Center for Integrative Cancer Treatment, Israel. Dr. Brenner has

a fellowship in radiation oncology (Rhode Island Hospital) and studied chemotherapy at Memorial Sloan Kettering Cancer Institute in New York. (Lecture: Combined Biobran and Hyperthermia in the Treatment of Cancer.)

What is interesting to note about Dr. Brenner is that he was himself a victim of cancer and managed to open his mind and offer other treatments to cancer patients. Today, Dr. Brenner is no longer convinced of the effectiveness of chemotherapy to cure cancer as explained in detail in his important book *Living Without Cancer*, already translated in English, Chinese, and Russian.

Dr. Brenner delivered an excellent lecture based upon hyperthermia treatments and Biobran. Dr. Brenner also pointed out the necessity of detoxification and natural food diet in the treatment of cancer. Years ago, Dr. Brenner came to my clinic in Lisbon to learn how to include nutrition, detox, and diet in the treatment of his cancer patients. Only very few oncologists

have shown such desire to learn about alternative support, nutrition, and the use of dietetic supplementation.

Other interesting lectures were from Prof. Dr. Hegyi Gabriella, MD, PhD, and especially the one from Professor Basant Pari, MD, on Lyme disease and Biobran. (Lecture: Aspects of a Trial of Biobran Mgn3 in the Disease)

My lecture, "New Modern Way to Treat Cancer," is available on Slideshare. Also, my fully illustrated course in immuno-nutrition based on new developments in immuno-oncology using natural compounds such as Biobran, chlorella extract, and nutrition is now available to doctors.

Contact

Email: sergejurasunas@hotmail.com

Skype: Serge Jurasunas

Phone: 00 351923565038

Website: www.sergejurasunas.com

Blog:

Naturopathiconcology.blogspot.com

Slideshare:

www.slideshare.net/sheldonstein

Townsend Letter

ISSN 1940-5434

Subscriptions • Editorial • Advertising

360/385-6021

24 Hr. Fax – 360/385-0699

911 Tyler Street

Pt. Townsend, Washington 98368-6541 USA

www.townsendletter.com | info@townsendletter.com

Editor-in-Chief Jonathan Collin, MD

Publisher Jonathan Collin, MD

Editor Jule Klotter

Contributing Medical Editor Alan Gaby, MD

Managing Editor Barbara Smith

Circulation Manager Joy Reuther-Costa

Managing Assistants Julie Reuther; Jill Tomasi

Advertising Projects & Accounts Barbara Smith
Joy Reuther-Costa
Jonathan Collin

Columnists & Writers

Majid Ali, MD
Eleonore Blaurock-Busch, PhD
Jim Cross, ND, LAc
Nancy Faass, MSW, MPH
Peter A. Fields, MD, DC
Alan R. Gaby, MD
Michael Gerber, MD, HMD
Robert Goldman, MD, PhD, DO, FAASP
Ira Goodman, MD
Tori Hudson, ND
Ronald Klatz, MD, DO
Ingrid Kohlstadt, MD, MPH, FACN
Sarah A. LoBisco, ND
Marianne Marchese, ND
Alan B. McDaniel, MD
Ralph W. Moss, PhD
Judyth Reichenberg-Ullman, ND
Jacob Schor, ND, FABNO
Pamela Smith, MD
Jacob Teitelbaum, MD
Jade Teta, ND
Keoni Teta, ND
John Trowbridge, MD
Robert Ullman, ND
Rose Marie Williams, MA
Elaine Zablocki

Contributing Writers

Katherine Duff
Bob Frost
Gary Null, PhD

Layout & Design

Barbara Smith/Sign Me Up! Inc.

Design Team

Jonathan Collin
Joy Reuther-Costa
Barbara Smith

Cover Photo Credit

Nancy Greenblatt

Printing

Dartmouth Printing Company

Website Design & Maintenance

Sandy Hershelman Designs

Published by
Townsend Letter for Doctors & Patients, Inc.
Jonathan Collin, President
Deborah Nissen-Collin, Vice-President
Copyright ©2017 by Townsend Letter for Doctors & Patients, Inc.
All rights reserved.

No article may be reproduced in any form, printed or electronically, without the express written consent of the author and the publisher. The xeroxing of articles for "office use" or "seminar use" requires permission of the author and publisher and is prohibited without such permission. Articles may not be scanned for use on personal or commercial websites or CD-ROM.

Disclosure: The *Townsend Letter for Doctors & Patients* publishes information about alternative medicine written by researchers, health practitioners, and patients. As a forum for the entire alternative medicine community, we present information discussing a wide variety of alternative and integrative medicine practices. In addition to publishing original research and literature abstracts and reviews, we encourage case studies and anecdotal reports. Detailed anecdotal reports are not viewed as proof but as possibilities that need further investigation. All authors are required to submit their reports to other professionals for review and include proof of peer-review with article submission.

The editors of the *Townsend Letter* recommend that all patients (and physicians) review further reports provided in the article's references and investigate the practitioner's techniques before undertaking an alternative diagnosis, examination, or treatment. Please discuss such treatments and examinations with a reputable health practitioner in your community. If you do use an alternative treatment discussed in the *Townsend Letter*, we would appreciate your report of the outcome, any side effects, and costs.

Pathways to Healing

by Elaine Zablocki

Breathe to Stay Alive

Winifred Jolly, LCSW, was training in the California mountains at age 50, preparing for a trek in the Himalayas, when a 100-foot fall changed the course of her life. She fractured her skull and lay in a coma for six days. Her left leg was amputated below the knee. Within the next 18 months, she was also diagnosed with acute kidney disease and advanced endometrial cancer. "These health problems challenged my carefree lifestyle; but in the end, they greatly enhanced my life," she reflects. "I learned how to cope with pain, with my own mind, and with our healthcare system. After 28 years, you might say that I have excellent training in how to be a professional patient."

She has developed a proactive style of managing her own health care. For example, she keeps her own personal health records, listing each hospitalization and surgical procedure in chronological order. She comes to every healthcare appointment with a short, written list of questions. "When I am interviewed as a prospective candidate for surgery I request time, always granted, to ask questions. Then I take some time to talk with the doctor, to ask about their goals in life, and interests outside of medicine. I find that asking these questions changes the relationship, and the healing process proceeds with more confidence and calmness."

Jolly often asks the surgeon or physician to draw a sketch of the damaged organ and planned procedures. "Though many doctors insist they cannot draw, I assure them that even the most elementary image is helpful to me in my recovery



Winifred Jolly, LCSW

process. I visualize the cancer cells, or the damage from previous surgeries. Then I breath in a relaxed way, and invite healing energy into my body to heal what needs to be healed."

A Resource for Other Patients

During her mid-30s, Jolly trained as a clinical social worker. After her amputation, people started to call her and ask for suggestions on coping with illness. Several therapists called and asked her to set up group discussions, since there was significant interest in various methods of mind-body healing. For about 20 years, she served in this way as an informal counselor. Nowadays she no longer leads group discussions, but she is available to answer questions via email.

Jolly shares a few key points with *Townsend Letter* readers:

- Feel free to ask for a second opinion if you experience any sense of distrust or lack of clarity after your first meeting with your physician or surgeon. This second interview can also serve as a form of comparison shopping.
- Take the time to find the best possible physician for your condition even if this means driving to a different neighborhood. During your first interview, observe the doctor's method of listening and sharing information. Trust is hard to pin down; it is almost intangible, but it is essential in the healing relationship.
- Research pharmaceutical company information in order to learn more details about the expected uses and possible side effects of particular drugs.

- Ask to hold the hand of a nurse or other practitioner when you are undergoing deep injections or anesthesia.
- Be prepared to refuse surgery, to leave the hospital against medical advice, or to “fire” your physician if you have valid reasons to believe these actions are necessary to preserve your own health and functioning.

Jolly herself tells stories about times when she needed to make her own personal decisions about the best possible treatment plan. She recalls one doctor who wanted to do an additional bladder kidney/surgery to repair previous problems. Eventually Jolly got a second opinion, which confirmed her intuition that repeated surgery was not necessary. On another occasion, she was in the ER vomiting for several hours. The ER doctors wanted to give her morphine followed by surgery, but she refused. She knew her own condition, and that morphine with its accompanying constipation would increase stress on her damaged intestines. She chose to live with the temporary pain, do visualizations which eased the blocked intestines, and thus avoid surgery.

Vibrant Living in Challenging Circumstances

I met Winifred Jolly a few months ago because I visited relatives in Atlanta, where she lives. We all went for a walk together in the park. Jolly was a vibrant sparkling presence and, obviously, an enthusiastic hiker. I only gradually realized that she is an amputee. Later I asked her how she learned to manifest such enthusiasm for life while coping with exceptional challenges.

“I’m a very practical person, so I do better when I can roll up my sleeves and say I’ll do the best I can. I had to learn to walk on this one leg, so I did,” she says. “There are books written about the art of living and the art of dying, and it boils down to living every moment of the day, as it is. That’s it.”

Jolly relies on a method of breathing she learned from Andrew Weil. “He tells all his patients to do this exercise. You breathe in and expand your lungs, you hold the breath and then exhale slowly. He says people in our culture tend to exhale in a rush, and it’s very important to take a longer time exhaling than inhaling.”

Jolly learned Weil’s methods from his books and audio materials. (See Resources section for a link to detailed descriptions of the breathing exercise.)

At many moments, recurring throughout her life, Jolly finds herself coping with excruciating pain. She finds this focus on the breath helps her stand to one side and observe the pain, communicate with the pain. Slow breathing can be a gateway to other states of mind, almost a self-hypnotic state of mind.

“You develop an imagery or method of being intimate with the organ, the pain, the damage,” she says. “When it is bad, instead of screaming in pain I just lift it up and embrace the pain. You do the breathing, and you’re less aware of the physical environment around you. You’re relaxing every muscle, every organ, every cell of your body. You send positive images to the pain. For me, pain has served as a reminder to bring relaxed present attentiveness, moment by moment, to my life.”

Resources

Winifred Jolly via email: <winjol38@gmail.com>

Breathing: The Master Key to Self Healing by Andrew Weil, MD (Audio CD)

Meditation for Optimum Health: How to Use Mindfulness and Breathing to Heal Your Body and Refresh Your Mind, by Andrew Weil, MD (Audio CD)

Andrew Weil Breathing Exercises:

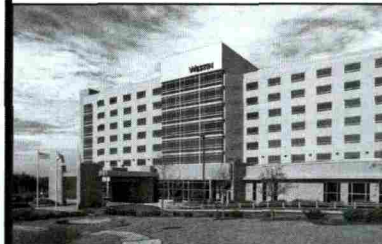
<https://www.drweil.com/videos-features/videos/the-4-7-8-breath-health-benefits-demonstration/>

<https://www.drweil.com/health-wellness/body-mind-spirit/stress-anxiety/breathing-three-exercises/>

Elaine Zablocki is the former editor of CHRF News Files.

Integrative Medicine For the Treatment of Tick-borne Diseases

April 20-21, 2018
Baltimore, Maryland



Westin Baltimore Washington International (BWI) Airport

An integrative medical approach to tick-borne diseases and chronic illness



Keynote: “How To Evaluate and Treat Unusually Sensitive and Toxic Patients”
Neil Nathan, MD



Keynote: “Understanding and Applying Herbal Medicines in the Treatment of Lyme Disease & Co-infections”
Julie McIntyre, Herbalist

“The Chronic Illness Puzzle - Diagnosis and Management”
Ann Corson, MD

“Parasites and Dental Problems As Contributing Factors in Chronic Illness”
Simon Yu, MD

“Psychiatric & Behavioral Manifestations of Tick-borne Diseases in Children & Adolescents”
Rosalie Greenberg, MD

“Detoxing The Brain”
Thomas Moorcroft, DO

“Maintaining the Gut Microbiome and the Importance of Detoxing”
Kristine Gedroic, MD

“Bartonellosis: Evolution in Clinical Understanding”
Edward Breitschwerdt, DVM

** More Speakers To Be Announced **

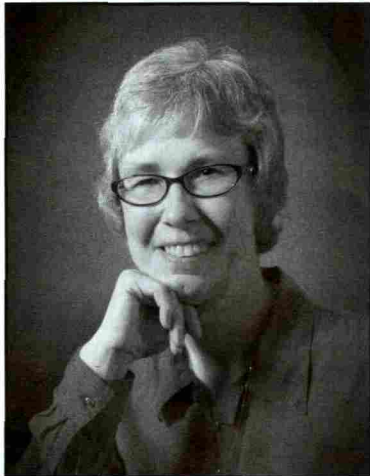
For more information and to register on-line visit
www.integrativelyme.com

Two-Day \$385
One-Day \$200

MD/DO/PA/NP Students \$295

Breaks and lunches provided will include gluten-free and vegetarian options

Contact: delmarvalyme@yahoo.com



Shorts

briefed by Jule Klotter
jule@townsendletter.com

Yoga, Breathing, and Depression

A combination of Iyengar yoga and controlled breathing (five breaths per minute) alleviates symptoms of major depressive disorder (MDD), according to a 2017 study led by Chris C. Streeter, MD. Both yoga and slow breathing increase heart rate variability (HRV), an indicator of parasympathetic tone. Low parasympathetic tone is found in people with MDD, and studies have shown correlations between increased HRV and improved mood. Iyengar yoga focuses on physical alignment while performing hatha yoga poses with the aid of blocks, straps, blankets, bolsters, and other props as needed. It was developed by B.K.S. Iyengar, who was among the first yoga practitioners to teach Westerners.

For this study, Streeter et al enrolled 32 participants, age 18-64, with a current diagnosis of MDD and a Beck Depression Inventory-II score ≥ 14 . The patients were either not taking antidepressant medication or were on a stable dose for three or more months. The study compared two protocols in order to figure out the more effective number of yoga sessions to use for MDD in future studies. The high-dose group (HDG) had three 90-minute yoga classes and four 30-minute homework sessions per week. The low-dose group (LDG) had two 90-minute yoga classes with three 30-minute homework sessions per week. The classes consisted of yoga postures (60 minutes), deep relaxation in the savasana/corpse pose with ujjayi breathing (10 minutes), and coherent breathing (five breaths/minute with equal inhalations and exhalations) for the remaining 20 minutes. During ujjayi breathing, laryngeal muscles are slightly contracted and the glottis is partly closed, creating a slight resistance and activating vagal afferent nerves in the larynx and pharynx. The 30-minute homework assignments consisted of yoga poses (15 minutes) and coherent breathing using a CD for pacing (15 minutes).

After 12 weeks of treatment, the authors found no statistically significant difference in response ($>50\%$ reduction in BDI-II scores) or remission (BDI-II scores <14) rates between the two groups even though the HDG participants spent significantly more time in the yoga-breathing practice.

However, more high-dose participants had BDI-II scores ≤ 10 at trial's end: 93% of HDG (14/15) vs. 53% of LDG (8/15) ($p=0.04$).

Transient muscle soreness was the most common adverse effect. One participant reported having distressing thoughts during the coherent breathing exercise at home. Replacing the breathing component of the homework with an additional 15 minutes of yoga solved the problem. Participants in this study had a low risk of self-injury, so the results may not apply to patients with suicide ideation or more severe symptoms.

The main drawback, according to participants in the high-dose group, was the time commitment. "Considering the similar response and remission rates, the lighter schedule of the LDG may better balance effective intervention frequency with time demands," say the authors. They also noted indications that the yoga intervention had a half-life of 48 hours, suggesting that two classes plus one homework session "might be sufficient to improve mood symptoms."

The authors state that using yoga/breathing as an adjuvant treatment with an antidepressant appears to augment the medication's effect and avoids drug-drug interactions and additional adverse effects, but larger studies involving patients on antidepressants are needed. The authors are conducting a larger trial with a walking comparison group.

Pizer A. The History and Practice of Iyengar Yoga. Updated April 26, 2017.

Streeter CC, et al. Treatment of Major Depressive Disorder with Iyengar Yoga and coherent Breathing: A Randomized Controlled Dosing Study. *J Altern Comple Med.* 2017;23(3):201-207.

Heart Rate Variability and Mental Health

Heart rate variability (HRV) is a marker for physical health and autonomic nervous system balance/imbalance; but it also correlates with mental well-being, according to a 2013 review by Andrew H. Kemp and Daniel S. Quintana. "HRV may be considered a marker of one's capacity for self-regulation; social engagement and psychological flexibility," say the authors. People with greater HRV are more likely to seek social support when dealing with stress and sadness. Increased HRV has also been associated with resilience, cheerfulness, calmness, and wellbeing. In contrast, reduced HRV, "reflecting a hypoactive parasympathetic (vagal) system," negatively impacts mood,

anxiety, and alcohol dependence. Low HRV has been observed in populations with attention deficit hyperactivity disorder (ADHD), bipolar disorder, schizophrenia, and other psychiatric disorders.

Kemp and Quintana have found that a decrease in resting-state HRV correlates to an increase in alcohol cravings in alcohol-dependent outpatients and to increased depression. They found that patients with depression who also had an anxiety disorder showed the greatest reductions in HRV, compared to those with depression alone.

All antidepressant medications, according to a meta-analysis that they performed in 2010 and other cited studies, decrease HRV (and increase the risk for cardiovascular disease). Non-medication interventions that improve HRV include cognitive behavioral therapy and slow breathing with prolonged exhalation. Slow breathing also decreased self-reported anxiety in musicians during stressful performances, according to the authors.

Kemp AH, Quintana DS. The relationship between mental and physical health: Insights from the study of heart rate variability. *International Journal of Psychophysiology*. 2013;89:288-296.

Electromagnetic Radiation and the Brain

It is an inconvenient truth in our smartphone, wireless society that electromagnetic radiation has multiple effects on the brain, including increased blood-brain permeability, neuron alterations, and increased lipid peroxidation. Almost 10 years ago, Henrietta Nittby and Swedish colleagues showed that two hours of exposure to radiation from a mobile phone (915 MHz) at non-thermal specific absorption rates (SAR) of 0.12mW/kg, 12 mW/kg, and 120 mW/kg caused albumin extravasation (leakage) in rats' brains and albumin uptake into neurons that was still evident 14 days later. Although albumin extravasation and uptake were not present at day 28, significant neuronal damage was evident at 28 days and 50 days post-exposure.

In a normal brain, the blood brain barrier (BBB) maintains homeostasis by allowing water, most lipid-soluble molecules, oxygen, carbon dioxide, and limited amounts of sodium, potassium, and other ions to pass between the blood and nerve cells, according to Nittby et al. When the BBB is damaged and permeability increases, larger molecules, including proteins and toxic substances in the blood, come in contact

with and damage brain cells. Normal BBB permeability is known to be disrupted in people with tumors, infarcts, infections, epileptic seizures, and severe hypertension.

In a 2017 study, Ju Hwan Kim and Korean colleagues showed that radiofrequency electromagnetic fields (RF-EMF), such as radiation emitted by cell phones, activate autophagy in cerebral cortex neurons and apoptosis in the brainstem cells of mice. Autophagy is a self-protective mechanism, activated by various stressors such as nutrient deficiency, during which injured organelles and unusual protein clusters are broken down and removed. According to Danielle Glick et al.,

PHYSICIAN FORMULATED

LIQUI-D3

A Dietary Supplement
Providing 2000 IU of
Cholecalciferol per Drop*

1 Fl. Oz. (30 ml)

One Drop Provides:

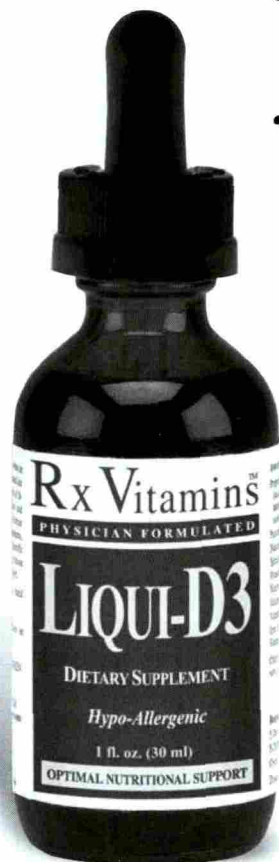
Calories	<0.5
Calories from Fat	0.5
Total Fat	0.026g
Cholesterol	0 mg
Total Carbohydrates	0 mg
Protein	0 mg
Vitamin D (as cholecalciferol)	2000 I.U.

Other Ingredients: Olive Oil

Recommended Usage:

As a dietary supplement, one (1) drop daily or as directed by your health care professional.

**#1 Most Recommended by
Doctors Worldwide**



LIQUI-D3 provides cholecalciferol, a highly bioavailable form of Vitamin D, in a nutritious, olive oil base. Vitamin D has been the subject of intensive research which has greatly increased our understanding of Vitamin D deficiency. This research has also expanded the range of therapeutic applications available for cholecalciferol. Physiologic requirements for vitamin D may be as high as 4000 IU per day.

Rx Vitamins
PHYSICIAN FORMULATED
Scientifically Advanced
Nutritional Supplements

To receive technical information on this or any Rx Vitamins formula, or to place an order, please call:

1-800-Rx2-2222 or 914-592-2323
Visit us at www.rxvitamins.com

* This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

OPTIMAL NUTRITIONAL SUPPORT

Shorts

► autophagy also promotes cellular aging and protects against genome instability and necrosis, thereby preventing cancer and neurodegeneration.

Kim et al exposed mice to 835 MHz RF-EMF using a Wave Exposer V20 (SAR value of 4.0 W/kg for whole body exposure) or to sham treatment for five hours/day for four weeks. They used RT-PCR and Western blotting to look for autophagic and apoptotic changes in cerebral cortex and brainstem gene and protein levels. The researchers also used transmission electron microscopy to look for possible morphologic changes in cortical and brainstem neurons. After four weeks of RF-EMF exposure, evidence indicated that the autophagy pathway in the mice's cerebral cortex, but not the brainstem, was activated. Signs of apoptosis, however, had increased in the brainstem and decreased in the cerebral cortex.

In 2014, Nidhi Saikhedkar and colleagues in India found that rats exposed to cell phone radiation (900 MHz) for four hours per day for 15 days displayed significant behavior changes (more anxiety and poor learning) compared to controls and to a sham control group. The exposed rats also showed significant changes in antioxidant enzyme levels, non-enzymatic antioxidant levels, and increased lipid peroxidation. Histological examination revealed neurodegeneration in the hippocampus and the cerebral cortex.

The Federal Trade Commission (FCC) regulations regarding cell phone and WiFi safety are based on thermal exposure to electromagnetic radiation. (The SAR limit is 1.6 W/kg as averaged over one gram of tissue.) Cell phone rules, published in 1996, were based on studies from the 1980s, according to Bill Walker and Olga Naidenko, PhD – long before smartphones had become mainstays in everyday life. The rules do not account for decades of daily exposure, nor do they consider possible risks to children. Young children's brains, protected by less developed skulls, absorb twice as much cell phone radiation as adults'. Children's vulnerability and the huge increase in RF-EMF exposure has caused health agencies in France, Israel, Italy, and other areas to recommend minimizing WiFi radiation exposure for children under age 11, according to Environmental Health Trust (EHT). The EHT website (<https://ehtrust.org>) has information on EMF radiation health concerns.

Environmental Working Group (EWG.org) has several tips for decreasing EMF exposure, such as using speakers and holding the phone away from the body, texting instead of talking, calling when the signal is strong, and avoiding the use of radiation shields (antenna caps and keypad covers). These shields cause cell phones to transmit with more energy, increasing radiation exposure.

Glick D, et al. Autophagy: cellular and molecular mechanisms. *J Pathol*. May 2010;221(1):3-12.

Kim JH, et al. Activation of autophagy at cerebral cortex and apoptosis at brainstem are differential responses to 835 MHz RF-EMF exposure. *Korean J Physiol Pharmacol*. 2017;21(2):179-188.

Nitthy H, et al. Increased blood-brain barrier permeability in mammalian brain 7 days after exposure to the radiation from a GSM-900 mobile phone. *Pathophysiology*. 2009;16:103-112.

Saikhedkar N, et al. Effects of mobile phone radiation (900 MHz radiofrequency) on structure and functions of rat brain. *Neurol Res*. December 2014;36(12):1072-9.

Walker B, Naidenko O. California Cautions Cell Phone Users: Keep Your Distance. March 6, 2017.

Hormonal Contraception and Depression

"Use of hormonal contraception, especially among adolescents, was associated with subsequent use of antidepressants and a first diagnosis of depression, suggesting depression as a potential adverse effect of hormonal contraceptive use," according to a Danish epidemiological study led by C.W. Skovlund. The 2016 prospective cohort study used data from Denmark's National Prescription Register and Psychiatric Central Research Register, collected from January 1, 1995 to December 31, 2013. The study included data from 1,061,997 Danish females, age 15 to 34 years (mean age 24.4 years) with no prior depression or major psychiatric diagnosis, no history of cancer, venous thrombosis, or infertility treatment, and no redeemed prescription for antidepressants. Mean follow-up was 6.4 years.

Compared to women who used barrier methods for birth control or other non-hormonal methods such as copper IUDs, women using hormonal methods had a combined relative risk (RR) for antidepressant use of 1.23 (95% CI, 1.22-1.25). RR differed according to type of product: users of a patch (norgestrolmin) had an RR of 2.0 (95% CI, 1.76-2.18); users of a vaginal ring (etonogestrel), 1.6 (95% CI, 1.55-1.69); users of a levonorgestrel intrauterine system, 1.4 (95% CI, 1.31-1.42); and users of progestogen-only pills had an RR of 1.34 (95% CI, 1.27-1.40).

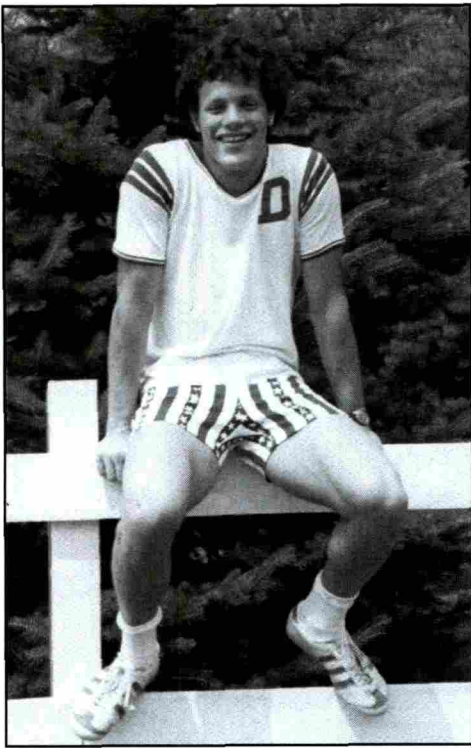
The relative risks of an initial depression diagnosis or first use of an antidepressant prescription after commencing hormonal contraception decreased with age. "Adolescents (age range, 15-19 years) using combined oral contraceptives had an RR of a first use of an antidepressant of 1.8 (95% CI, 1.75-1.84)," the authors report, "and those using progestin-only pills, 2.2 (95% CI, 1.99-2.52)." Being an adolescent seeking birth control may, in itself, be linked to unrecognized confounding factors that contribute to depression onset.

This study stirred up quite a bit of controversy. Evangelos I. Kritsotakis, University of Sheffield, calculated the absolute risk of depression using the raw data in the Skovlund study. He says: "...an honest doctor would simply have to tell her patient that, on average, only 1 in 221 exposed to HC [hormonal contraception] over a year is likely to subsequently be prescribed an antidepressant because of HC (number needed to harm [NNH] is 1/0.045 = 221) and only 1 in 2441 women is likely to be diagnosed with depression at a psychiatric hospital (NNH is 1/0.0004 = 2441). For adolescents, the NNH is 1 in 92 for use of antidepressants and 1 in 556 for depression diagnosis." Kritsotakis asks, "Do any of these absolute risk increases counterweight the benefits from birth control?"

That is a question each woman needs to decide for herself. Feeling trapped in an unwanted pregnancy has its own risks. For some women, however, hormonal contraception – depending on the type – may be an inciting or contributing factor in the development of depression. Finding a birth control method that decreases that risk may be helpful.

Kritsotakis EI. Re: Hormonal contraception use among teenagers linked to depression – Yet another example of a never ending confusion between relative and absolute risks? *BMJ*. 2016;354:i5289.

Skovlund CW et al. Association of Hormonal Contraception with Depression (abstract). *JAMA Psychiatry*. 2016 Nov 1;73(11):1154-1162.



Literature Review & Commentary

by Alan R. Gaby, MD
drgaby@earthlink.net

Does Aluminum Cause Alzheimer's Disease?

The authors of this study previously developed a method for non-invasive measurement of bone aluminum concentrations using an *in vivo* neutron activation analysis technique. Among 15 patients (mean age, 80.2 years) with mild-to-moderate Alzheimer's disease, the mean aluminum concentration in bone was 12.5 μg per g of calcium, as compared with 2.7 $\mu\text{g}/\text{g}$ ($p = 0.02$) in 15 control subjects (mean age, 75 years). The mean serum aluminum concentration was nonsignificantly higher by 5% in the patients than in the controls. Although the ratio of aluminum to calcium in bone increased with increasing age, the older age of the patients appeared to account for only a very small proportion of the difference in aluminum-to-calcium ratio between groups.

Comment: Several lines of evidence suggest that aluminum exposure contributes to the pathogenesis of Alzheimer's disease.¹ In some, but not all, studies aluminum concentrations in brain tissue were significantly higher in patients with Alzheimer's disease than in healthy controls and patients with other types of senile dementia (alcoholic, vascular, or multi-infarct). In patients with Alzheimer's disease, foci of aluminum were found in a high proportion of neurons that contained neurofibrillary tangles (a pathological change in the brain that is associated with Alzheimer's disease). In observational studies, higher dietary aluminum intake or higher aluminum concentrations in drinking water were associated with increased risk of developing Alzheimer's disease. In addition, injection of aluminum into the brain of rabbits produced neurofibrillary tangles in cerebral neurons. Moreover, treatment with the aluminum-chelating drug, deferoxamine, significantly decreased the rate of functional deterioration in patients with Alzheimer's disease.

In the present study, the aluminum-to-calcium ratio in bone was significantly higher in patients with Alzheimer's disease than in controls, whereas serum aluminum levels did not differ significantly between groups. Since bone is a major storage site for aluminum (whereas only small amounts are found in serum), the results of this study support previous evidence that aluminum exposure is associated with an increased risk of Alzheimer's disease.

Sources of aluminum exposure include beverage cans; aluminum cookware; municipal water supplies that add aluminum compounds to help remove particulate matter; food additives present in processed cheese, baking powder, and other foods; and aluminum-containing antacids and antiperspirants

Mohseni HK, et al. A pilot study measuring aluminum in bone in Alzheimer's disease and control subjects using *in vivo* neutron activation analysis. *J Alzheimers Dis.* 2016;53:933-942.

Thiamine Derivative Possibly Beneficial for Alzheimer's Disease

Five Chinese patients with mild-to-moderate Alzheimer's disease received 300 mg per day of benfotiamine for 18 months. All patients showed improvements in cognitive function, as determined by the Mini-Mental Status Examination (MMSE), with an average increase of 3.2 points at month 18 (from 17.0 to 20.2). The maximum score on the MMSE is 30, with 24-30 indicating normal cognitive function, 19-23 indicating mild cognitive impairment, and 10-18 indicating moderate cognitive impairment.

Comment: Benfotiamine (S-benzoylthiamine-O-mono-phosphate) is a lipid-soluble derivative of thiamine that has been reported to be more bioavailable than water-soluble thiamine. This compound has been used with some success

Gaby's Literature Review

to treat diabetic neuropathy. The results of the present study suggest that benfotiamine can produce modest improvement in cognitive function in patients with mild-to-moderate Alzheimer's disease. Controlled trials are needed to rule out the possibility of a placebo effect.

Pan X, et al. Long-term cognitive improvement after benfotiamine administration in patients with Alzheimer's disease. *Neurosci Bull.* 2016;32:591-596.

Vitamin B₁₂ Deficiency and Neurological Symptoms in Infants

Vitamin B₁₂ status was assessed in 121 infants in Sweden who were hospitalized between 2004 and 2012 with severe neurological symptoms at less than one year of age. Vitamin B₁₂ deficiency was defined as low serum cobalamin and/or increased homocysteine and/or increased methylmalonic acid levels. Infants found to be deficient received vitamin B₁₂ replacement therapy. Thirty-five infants (29%) had vitamin B₁₂ deficiency, which was diagnosed at an average age of 1.7 months. Seizures, apnea, and other apparent life-threatening events were common symptoms. After vitamin B₁₂ replacement therapy, neurological development was normal.

Comment: The results of this study demonstrate that vitamin B₁₂ deficiency is common in infants presenting with severe neurological symptoms such as seizures and apparent life-threatening events, and that these abnormalities can be corrected by vitamin B₁₂ supplementation. While an elevated homocysteine level in adults indicates folate deficiency more often than vitamin B₁₂ deficiency, a high homocysteine level in infants has been found in most cases to be due to vitamin B₁₂ deficiency. In a previous study, 81 of 105 children presenting with feeding difficulties, subtle neurologic signs, or delayed psychomotor development had an elevated plasma homocysteine concentration. Seventy-nine of the 81 infants thought to have vitamin B₁₂ deficiency were randomly assigned to receive, in double-blind fashion, a single intramuscular injection of hydroxocobalamin (400 µg) or a sham injection (placebo). The median improvement in motor function (as determined by the Alberta Infants Motor Scale) was significantly greater in the vitamin B₁₂ group than in the placebo group. In addition, a higher proportion of infants in the B₁₂ group than in the placebo group showed improvement in regurgitations (69% vs. 29%; $p = 0.003$).² Vitamin B₁₂ deficiency should therefore be considered in the differential diagnosis of both severe and mild neurological and developmental abnormalities in infants.

Irevall T, et al. B12 deficiency is common in infants and is accompanied by serious neurological symptoms. *Acta Paediatr.* 2017;106:101-104.



Omega-3 Fatty Acids for Age-Related Cognitive Decline

Two hundred forty Chinese individuals (mean age, 74.5 years) with mild cognitive impairment were randomly assigned to receive, in double-blind fashion, 2 g per day of docosahexaenoic acid (DHA) or placebo (corn oil) for 12 months. Compared with placebo, DHA significantly improved scores in the Full-Scale Intelligence Quotient, Digit Span, and other measures of cognitive function, and significantly decreased the loss of hippocampal volume (as determined by MRI).

Comment: Omega-3 fatty acids (i.e., eicosapentaenoic acid [EPA] and DHA) play a role in normal brain function. In the present study, supplementation with DHA prevented the deterioration of cognitive function and slowed the progression of hippocampal atrophy in elderly Chinese individuals with mild cognitive impairment. Some previous studies using DHA or the combination of DHA and EPA found results similar to those of the current study. In other research, however, these omega-3 fatty acids did not slow the progression of age-related cognitive decline. Further research is needed to determine which patients are most likely to benefit from DHA or fish oil. However, considering the other reported benefits of DHA/EPA (e.g., anti-inflammatory and cardioprotective effects), it would be reasonable to include these fatty acids as part of a comprehensive treatment plan for patients with mild cognitive impairment.

Zhang YP, et al. Effects of DHA supplementation on hippocampal volume and cognitive function in older adults with mild cognitive impairment: a 12-month randomized, double-blind, placebo-controlled trial. *J Alzheimers Dis.* 2017;55:497-507.

N-Acetylcysteine for Substance Abuse Associated with Posttraumatic Stress Disorder

Thirty-five military veterans (34 male; mean age, 49 years) with the combination of substance use disorder (SUD) and posttraumatic stress disorder (PTSD) were randomly assigned to receive, in double-blind fashion, 2,400 mg per day of N-acetylcysteine (NAC) or placebo for eight weeks. All patients received cognitive-behavioral therapy for SUD. Twenty-seven patients (77%) completed the trial. Mean severity of PTSD symptoms improved to a significantly greater extent with NAC than with placebo (32% vs. 3%; $p < 0.05$). Mean amount of drug craving also improved to a significantly greater extent with NAC than with placebo (81% vs. 32%; $p < 0.05$). However, alcohol and drug use did not differ significantly between groups.

Comment: Glutamate synapses in the nucleus accumbens region of the brain are involved in both PTSD and SUD, which are conditions that frequently occur together. The presence of a subnormal concentration of glutamate in the nucleus accumbens may increase compulsive or addictive behaviors and heighten cravings. Treatment with NAC has been shown to increase glutamate concentrations in the nucleus accumbens, and NAC has been used successfully to treat addictions to tobacco, marijuana, and gambling. The results of the present study suggest that NAC, when used in combination with psychotherapy, is also beneficial in the treatment of PTSD coexisting with SUD.

Back SE, et al. A double-blind, randomized, controlled pilot trial of N-acetylcysteine in Veterans with posttraumatic stress disorder and substance use disorders. *J Clin Psychiatry.* 2016;77:e1439-e1446.

Magnesium Deficiency and Depression

Sixty Iranian patients (mean age, 32 years) with depression and hypomagnesemia (serum magnesium < 1.8 mg/dl) were randomly assigned to receive, in double-blind fashion, 500 mg per day of magnesium oxide or placebo for eight weeks. At the end of the trial, serum magnesium was normal in 88.5% of the patients in the magnesium group and in 48.1% of those in the placebo group. The mean percent improvement in the Beck Depression Inventory-II score was significantly greater in the magnesium group than in the placebo group (62% vs. 41%; $p = 0.02$).

Comment: Depression is one of the known manifestations of magnesium deficiency. The results of the present study confirm previous observations that magnesium supplementation can improve symptoms of depression in patients with hypomagnesemia. Magnesium is primarily an intracellular ion, and a normal serum magnesium concentration does not rule out magnesium deficiency. The gold standard for assessing magnesium status is an intravenous magnesium load test, which involves intravenous administration of magnesium followed by the measurement of magnesium output in a 24-hour urine sample. This test is cumbersome and is rarely performed in clinical practice. Red blood cell and white blood cell magnesium levels do not appear to be reliable indicators of magnesium status. Risk factors for magnesium deficiency include excessive alcohol intake; use of thiazide diuretics, loop diuretics, or proton pump inhibitors; diseases that cause malabsorption or malnutrition; and chronic stress. Considering the difficulty of identifying mild-to-moderate magnesium deficiency with standard laboratory tests, a trial of magnesium supplementation would be reasonable for depressed patients with risk factors for magnesium deficiency, even if the serum magnesium concentration is normal.

Rajizadeh A, et al. Effect of magnesium supplementation on depression status in depressed patients with magnesium deficiency: A randomized, double-blind, placebo-controlled trial. *Nutrition*. 2017;35:56-60.

Vitamin D for Restless Legs Syndrome

The median serum 25-hydroxyvitamin D level in 12 Saudi Arabian adults (mean age, 38 years) with restless legs syndrome was 8.7 ng/ml (range, 5.4-23 ng/ml). Patients with a 25-hydroxyvitamin D level below 20 ng/ml were treated with oral vitamin D (28,000 IU per week) or parenteral vitamin D (200,000 IU per month) for three-to-eight months, until the 25-hydroxyvitamin D level became normal. The mean severity of restless legs syndrome improved by 62%.

Comment: The results of this study suggest that vitamin D supplementation can improve symptoms of restless legs syndrome in people with very low serum 25-hydroxyvitamin D levels. Controlled trials are needed to rule out a placebo effect. In addition, further research is needed to determine whether vitamin D supplementation would be beneficial for

individuals with moderately low or normal 25-hydroxyvitamin D levels.

Wali S, et al. The effect of vitamin D supplements on the severity of restless legs syndrome. *Sleep Breath*. 2015;19:579-583.

Probiotic Improves Gingivitis During Pregnancy

Forty-five women with gingivitis in the third trimester of pregnancy were randomly assigned to receive, in double-blind fashion, one probiotic lozenge or one placebo lozenge twice a day until delivery (approximately seven weeks of treatment). Each probiotic lozenge (Prodentis; BioGaia AB, Lund, Sweden) contained at least 10^8 colony-forming units each of *Lactobacillus reuteri* ATCC PTA 5289 and *L. reuteri* DSM 17938. At baseline, the mean Gingival Index and mean Plaque Index did not differ significantly between groups. At reevaluation within two days after delivery, both of these parameters were significantly lower (better) in the probiotic group than in the placebo group ($p < 0.0001$ for each comparison). The mean improvement in the Gingival Index was 80% in the probiotic group and 22% in the placebo group. The mean improvement in the Plaque Index was 71% in the probiotic group 25% in the placebo group.

Comment: In this study, treatment with lozenges containing a proprietary blend of two strains of *L. reuteri* improved pregnancy-associated gingivitis. The product used in this study is apparently not sold in the United States, although vendors on sites such as Amazon and eBay offer to ship it from other countries to the US. *L. reuteri* DSM 17938 is sold in the US under the name Gerber Soothe Colic Drops. It is not known whether this strain would be effective against gingivitis when used alone, but *L. reuteri* DSM 17938 has been found in controlled trials to be useful for preventing and treating infantile colic and for preventing dental caries in children.

Schlagenhauf U, et al. Regular consumption of Lactobacillus reuteri-containing lozenges reduces pregnancy gingivitis: an RCT. *J Clin Periodontol*. 2016;43:948-954.

References

1. Gaby AR. Alzheimer's disease. In Gaby AR. *Nutritional Medicine, 2nd edition*, 2017, Concord NH, www.doctorgaby.com; chapter 278.
2. Torsvik I, et al. Cobalamin supplementation improves motor development and regurgitations in infants: results from a randomized intervention study. *Am J Clin Nutr*. 2013;98:1233-1240.

Maplewood Company

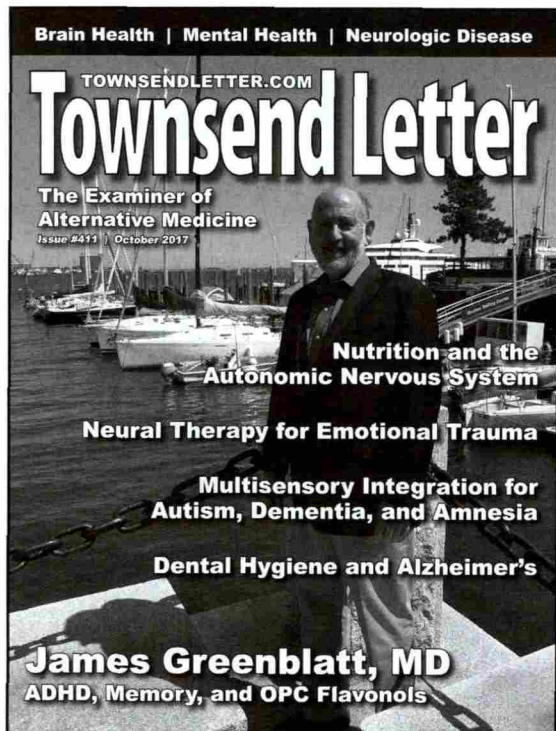
Centennial, Colorado

ACETYL-GLUTATHIONE at LOWEST PRICES

(Orally Available Glutathione)

100MG capsules 60ct \$26 .00
200MG capsules 60ct \$37.00
300MG capsules 60ct \$49.00

Ted Keller, RPh
303-779-0751



On the cover

Optimizing Attention Deficit Hyperactivity Disorder (ADHD) Treatment with Oligomeric Proanthocyanidins (OPCs)

by James Greenblatt, MD, and Winnie T. Lee, RN

Upward Trend of ADHD Diagnoses

Attention deficit hyperactivity disorder (ADHD) has become the most commonly diagnosed childhood disorder in the United States. An estimated 6.4 million children ages 4 to 17 are diagnosed with ADHD at some point in their lives. This reflects a staggering 41% increase within the last decade. ADHD is characterized by patterns of inattention and hyperactive and impulsive behaviors that disrupt social, academic, and occupational functioning. ADHD was once viewed as a problem of discipline and poor parenting. However, a substantial body of empirical studies within the past couple of decades has established ADHD as a neuropsychiatric disorder with multiple biological abnormalities.

Conventional treatment for ADHD includes pharmacological or behavioral therapy, although the efficacy of medications in treating these conditions is widely debated. The majority of pharmaceutical agents used to treat ADHD include methylphenidate or amphetamine, which work by stimulating dopamine neurotransmission in the brain. However, stimulant medication is only effective for short-term symptom reduction, and only about 30% of clients with ADHD report any significant improvement in symptoms on stimulant medications.¹ While some children may benefit from medications, it is equally imperative for parents, caregivers, and health care providers to consider complementary and integrative therapies to alleviate symptoms.

Behavioral therapies and neurofeedback have been proven to be effective in targeting abnormalities that underlie ADHD symptomatology. The American Academy of Pediatrics has designated neurofeedback as "Level 1

Best Support" – indicating that it is a safe, evidence-based treatment for childhood ADHD. Neurofeedback is a non-pharmacological intervention that has shown promise in the long-term management of ADHD symptoms by teaching individuals to adjust their brain wave activity through a reward system based on operant conditioning principles.

Several studies have demonstrated that individuals with ADHD have more theta brain wave activity and less beta brain wave activity.² Theta brain waves are present during deep meditation and light sleep and have been negatively related to alertness. Beta brain waves are associated with normal waking consciousness, attentivity, and critical reasoning and are responsible for completing executive functioning tasks. Therefore, neurofeedback aims to increase levels of beta brain waves and reduce theta brain waves to increase cognitive and executive function in individuals with ADHD.

A recent study from researchers at Harvard Medical School found that children who participated in neurofeedback experienced improvements in ADHD symptoms that remained at the six-month follow-up.³ Children were randomly assigned to receive computer attention training using neurofeedback, cognitive training, or a control condition three times per week over five months for a total of 40 sessions. Based on parental reports on multiple different rating scales, those in the neurofeedback group showed significant improvements over time compared with the control condition on inattention, executive functioning, and hyperactivity/impulsivity. In addition to parent reports, the neurofeedback group had significant improvements on off-task motor/verbal changes in behavior. Changes occurred earlier and were stronger

in the neurofeedback group than in the cognitive training group.

Neurofeedback has also been found to be as effective as medication in improving ADHD symptoms. In one study with 130 children, participants were randomized to receive only neurofeedback, neurofeedback with methylphenidate, or only methylphenidate.⁴ The group who received neurofeedback and methylphenidate experienced superior improvements in attentiveness overall, and the group who received only neurofeedback experienced effects that were equivalent to the medication-only group.

Similarly, a recent study compared the efficacy of neurofeedback in 131 students divided into four groups (neurofeedback group, pharmacological group, combined group, and no treatment group) and assessed participants' executive control and cortical activation pre- and post-treatment.⁵ Compared to the other three groups after treatment, participants in the combined group showed the highest values of cortical activation, the best executive control, and the greatest reduction in hyperactivity and attention deficit symptoms.

Neurofeedback can be expensive and time-consuming, however; and in our experience, treatments that are cost-effective and simple to follow are the ones that maximize patient compliance. Plant-derived compounds known as oligomeric proanthocyanidins (OPCs) have proven to be a promising adjuvant therapy in treating ADHD. Oligomeric proanthocyanidins are a form of polyphenols, compounds that plants produce as a defense against environmental harm. OPCs are typically present as plant pigments in cranberries, blueberries, and grapes, but they are also abundant in grapeseed, ginkgo biloba, plums, peaches, and pine bark. The ability of OPCs to stimulate activity in brain regions responsible for carrying out executive functioning tasks has been of growing interest among researchers seeking safe, natural approaches for the treatment of ADHD in children and adults.

Historical Uses of OPCs in Medicine

During the Age of Exploration, European explorers embarked on long, treacherous sea voyages toward North America. In 1534, the crew of French explorer Jacques Cartier were ship-bound for months, and many crew members succumbed to the devastating effects of scurvy.⁶ Cartier luckily befriended a tribe of Quebecois Native Americans during his explorations, who offered Cartier and his men a medicinal tea brewed from the needles and bark of special pine trees. This medicinal tea saved Cartier's men, as documented in his journal, and has since fueled one of the most exciting breakthroughs in the field of nutritional psychiatry.

Long before Cartier and his men were introduced to the healing properties of the pine bark tea, OPC-rich plant extracts had already been used as medicine in China and India for millennia. Between 1100BC and 200BC, Chinese physicians ardently supported the drinking of green tea (*Camellia sinensis*) to maintain health; and by the Tang

Dynasty (AD 618-907), tea had become an object of lay and medicinal veneration. Passages from ancient Indian texts also demonstrate a rich and lengthy history of using OPC-containing plants for therapeutic purposes: two plants that figure prominently in Ayurvedic literature (*Cedrus deodara*, or Himalayan cedar, and *Pinus roxburghii*, or Indian longleaf pine) have been described as possessing central nervous system effects, and have traditionally been used in Ayurvedic medicine to treat disorders of the mind.⁷

Multiple research studies have demonstrated that OPCs may directly benefit brain networks by enhancing communication between neurons and offer cell protection through their potent antioxidant defense. During over two decades of experience of utilizing OPCs in the treatment of ADHD patients, I have observed countless patients report improvement in their ability to concentrate, focus, and eliminate the need for medications.

OPCs for ADHD

As neuroimaging studies have confirmed the presence of atypical brain activity in ADHD individuals, targeted treatment efforts such as neurofeedback aim to improve brain wave activity. In our clinic, we have observed that supplementation with OPCs can dramatically improve ADHD symptomology. Over the years, EEG analyses have been utilized with many of our ADHD patients. We have recorded multiple cases demonstrating EEG changes, handwriting changes, enhanced academic performance, improved behavior, and improved CPT (continuance performance testing) after supplementation with OPCs. Prior to initiating OPC supplementation, we conducted baseline EEGs and compared baseline EEGs to EEGs following supplementation with OPCs.

Following OPC supplementation, patients reported subjective improvements in attention, focus, mood, and social interactions. We observed more equality in their theta:beta ratios such that theta waves are reduced significantly, particularly during the reading task (Figures 1.1 and 1.2). The EEG changes are very similar to what has been found with neurofeedback. However, neurofeedback can be expensive and time-consuming. While many individuals require a multi-modal treatment plan, treatment as simple as supplementation with OPCs can be efficacious and enhance patient compliance. ➤

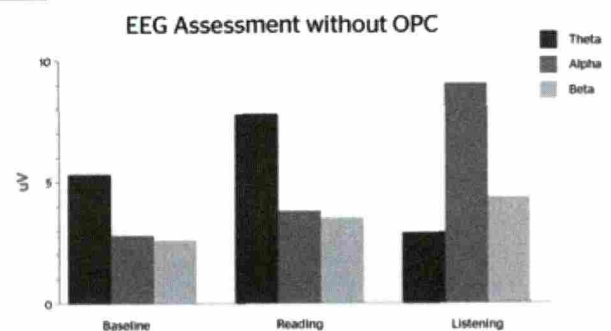


Figure 1.1 EEG assessment conducted on JM, a 13-year-old female with diagnosed ADHD, demonstrating elevated theta waves during baseline and reading task without OPC supplements.

Optimizing ADHD

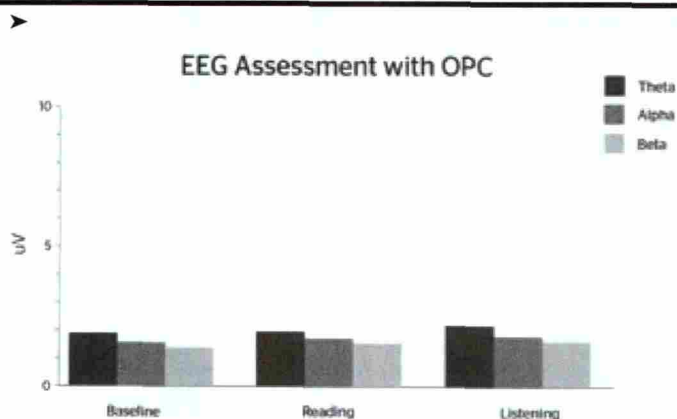


Figure 1.2 After OPC supplementation, JM's EEG assessment demonstrated a significant reduction of theta waves, leading to a more balanced beta:theta ratio.

An earlier experiment conducted by psychologist Marion Sigurdson, involving 30 subjects with ADHD, found that the subjects' attention and concentration improved just as much with a daily regimen of pine-bark-derived OPCs as with traditional ADHD stimulant medications.⁸ Additionally, the subjects reported experiencing better sleep and improved mood while taking the OPC supplement.

Sigurdson's experimental outcomes were echoed in later research, including a randomized controlled trial seeking to investigate the effects of pycnogenol on attention, oxidative DNA damage, and antioxidant status in ADHD patients and healthy controls. In a 2006 study, 61 children aged 6-14 with ADHD were randomly assigned to receive either pycnogenol (1 milligram per kilogram of body weight) or a placebo for one month, without any additional medications or supplements. Baseline measures taken at the start of the trial revealed that children with ADHD had significantly more oxidative DNA damage than their non-ADHD counterparts; after the study, markers of DNA damage were significantly lower in the group that had received pycnogenol, even compared to measures taken from the non-ADHD controls.⁹ At the end of the study, children who had taken pycnogenol had significantly elevated measures of antioxidant status. Within a month of discontinuing the supplement, however, subjects displayed increased levels of DNA damage. The data generated by this randomized trial points to a strong association between DNA oxidation, total antioxidant status, and inattention.

Additional evidence in support of the efficacy of OPCs for ADHD comes from the anecdotal experience of psychologist Dr. Steven Tenenbaum, who was diagnosed with ADHD as a child and lived with the disorder through adulthood. In addition to being a clinical psychologist, Tenenbaum was an aviation enthusiast. Due to FAA regulations, he was unable to utilize pharmaceutical treatments for his ADHD, and the use of stimulant drugs would cost him his pilot's license. He turned to alternative therapies and, in 1995, initiated a regimen of pycnogenol three times daily. According to

Tenenbaum, the results were impressive: with pycnogenol, he reported increased attention, improved focus, decreased emotional volatility, and better mood. Without pycnogenol, Tenenbaum reported that ADHD symptoms would return immediately.

The effects of OPCs have been tested both in ADHD patients as well as healthy, non-ADHD individuals. One study explored the effects of pycnogenol on the cognitive abilities and emotional status of 53 healthy students aged 18-27. The students were tested both before and after a regimen of pycnogenol (100mg/day) in measures of attention, memory, alertness, executive functioning, and mood, and showed significant improvements across the board after eight weeks of pycnogenol supplementation.¹⁰

A more recent study out of the University of Exeter documented the positive effects that drinking blueberry juice (rich in OPC flavonols) has upon brain function in older adults.¹¹ In the study, healthy participants age 65-77 were randomly assigned to one of two experimental groups: members of the first group drank 30ml/day of blueberry juice concentrate for 12 weeks, while members of the second were given a placebo. Before and after the 12-week period, participants underwent a battery of cognitive tests while an MRI scanner monitored their brain function and resting brain blood flow. Compared to the placebo group, those who took the blueberry supplement showed improvements in cognitive function, working memory, blood flow to the brain, and brain activation while carrying out cognitive tests. Finally, a noteworthy study out of the UK examined the effects of blueberry extract consumption on cognition in children and found that *every measure* of mental ability, including memory, improved in those children who drank blueberry extract.¹²

Neuroprotective Properties of OPCs

There are several proposed mechanisms for age-related cognitive deficit in memory and learning. Animal studies have shown that oxidative stress within aging neurons can be modified with the neuroprotective effects of OPCs. In one study, OPCs decreased free radical damage and increased the activity of enzymes responsible for clearing these reactive-oxygen species among animals with deteriorated memory and learning abilities.¹³ New insights into ways of protecting the aging brain from memory deficits has led studies into the histological modification of vascular endothelial growth factor receptors (VEGFR) within the brain, a signal protein produced by cells that stimulates vasculogenesis and angiogenesis.¹⁴

Moreover, several animal studies have shown the positive benefit of OPCs to affect mood and reduce depressive symptoms.¹⁵ In a double blinded, randomized, crossover study, patients with chronic fatigue syndrome had improved depression and anxiety symptoms after eight weeks of OPC rich polyphenol supplements.¹⁶ Another cross-sectional

study of 42,093 Japanese adults aged greater than 40 years old from the general population reported that green tea was inversely associated with psychological distress even after adjustment for possible confounding factors.¹⁷ When solely looking at depressive symptoms, green tea was also associated with a lower prevalence in the Japanese community-dwelling older population.¹⁸

Bolstering the Blood-Brain Barrier

The blood-brain barrier (BBB) is a semipermeable barrier between the blood and brain that allows specific substances of a certain size and chemistry to pass through. The physical and functional integrity of the BBB is of paramount importance, as the BBB determines what molecules gain access to the brain itself. A healthy BBB is therefore essential for the regulation of biochemical, neurotransmitter, and micronutrient levels within the brain, as well as for the protection of brain cells against substances carried within the blood that may be potentially damaging (e.g., toxins, pollutants).

Unlike many other antioxidants, OPCs have a strong affinity for collagen-elastin crosslinks present within the tight junctions of the BBB. This property allows OPCs to not only cross the BBB but also protect and maintain regulatory mechanisms present within the BBB. In vivo animal studies have shown that oral administration of OPC can greatly increase the resistance of brain capillaries to the hydrolytic action of bacterial collagenases injected into their lateral ventricles, sustaining the collagen cross-linking component of the basement membrane.¹⁹

The BBB also helps maintain physiologic molecules from leaking out of the brain for maintaining a proper homeostatic environment. One study evaluated fourteen boys (ages 6-12 years) with ADHD for deficiency in necessary brain chemicals.²⁰ They found that ADHD patients had nearly 50% lower amino acid levels of tryptophan and much higher levels of alanine than normal brains. Decreased transport of tryptophan due to a dysfunctional blood-brain barrier can lead to a further deficiency in serotonin access in the brain that might cause disturbances in behavior and cognitive performance.

Maintaining the functional abilities of the blood-brain barrier is integral for protecting the brain from the penetrative harmful substances, such as environmental toxins leading to oxidative damage within the brain. The use of synthetic food additives (i.e., artificial coloring), made from petroleum, and preservatives (i.e., sodium benzoate) has increased by 500% over the past five decades. This increased use introduces children to the greatest foreign antigenic load, challenging their immune system.

These dyes are naturally small and therefore able to easily evade the host immune response. Additionally, they are able to either bind body proteins to form immune complexes (Antigen-IgG) that are able to travel through

an impaired BBB and deposit within the brain and/or peripherally mediate the release of histamine from mast cells and basophils. A double-blind placebo controlled food challenge was completed on 16 children and showed that on days with ingestion of reactive foods, their symptoms were significantly exacerbated when compared to placebo days.²¹ Another study on 15 patients suffering from food-induced ADHD employed topographic electroencephalographic (EEG) mapping to show that intake of provoking foods directly increased brain electrical activity in the fronto-temporal areas of the brain.²²

Miracle-Gro for Neurons: Brain-Derived Neurotrophic Factor (BDNF)

Multiple research studies have demonstrated that OPCs will enhance the production of brain-derived neurotrophic factor (BDNF). BDNF is a protein found in the central and peripheral nervous system that plays an essential role in the growth, differentiation, and maturation of neurons, as well as developing and maintaining the connections between neurons.²³ BDNF is a mediator of neuroplasticity, a term used to describe the brain's ability to reorganize itself in response to changing patterns of stimulation. BDNF activity is crucial in supporting the brain's ability to respond to novel demands, such as learning new information, being stimulated in a new way, or even adaptively adjusting to compensate for damage. Experimental studies have shown that consumption of OPC-rich foods such as green tea and dark chocolate increases BDNF levels. Adequate BDNF levels are critical for ADHD patients who might struggle with learning as a result of activational impairments in reward processing centers of the brain, or impaired electrochemical signaling between neural networks secondary to diminished functional connectivity.²⁴

Clinical Utility of OPCs in ADHD Treatment

There is no such thing as a 'universal fix' or 'magic bullet,' for any major neuropsychiatric illness. Thanks to differences in genetic makeup, DNA expression, nutrition, physical activity, living environment, and patterns of social interactions, each and every individual ADHD patient is unique. What works for one patient may not necessarily work for another, and OPCs may not be the solution for every person with ADHD. However, for many inattentive, distractible children (and adults), OPCs can be efficacious as an adjunct therapy, as we have evaluated the empirical data that confirms OPCs' ability to dramatically improve clinical symptoms of ADHD while minimizing the use of high-dose stimulant medications.

Science has demonstrated that OPCs directly benefit a host of brain regions, brain networks, systems of neuron-to-neuron signaling, biochemical and metabolic processes, and metabolic ratios that have been identified as being



Optimizing ADHD

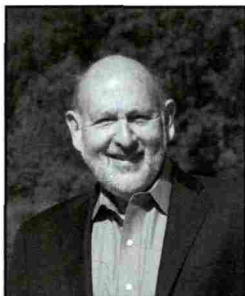
responsible for many of the symptoms of ADHD. There are several proposed theories about how OPCs can minimize symptoms of hyperactivity, improve focus, regulate mood lability, and even combat age-related cognitive decline. As a potent antioxidant, OPCs is involved in several roles that support neurotransmitter activity, neuronal growth, and immunological function. While we do not know the exact mechanism, the available literature supports OPCs as a safe, natural, and therapeutic alternative or adjunct treatment that can improve cognitive performance and minimize ADHD symptoms.

The use of OPC supplements has not only benefited patients with ADHD, but scientists have also found that they can be useful in combating depression and neurodegenerative diseases associated with the aging process by stimulating neuronal growth and enhancing the integrity of the blood-brain barrier.

In two decades of using OPCs to treat patients with ADHD, I have observed countless patients whose thinking becomes progressively clearer once they start taking OPCs. OPCs can be an effective biological alternative in the treatment of adults and children with ADHD. By incorporating them into modern-day nutritional psychiatry, we can offer countless patients relief from symptoms.

References

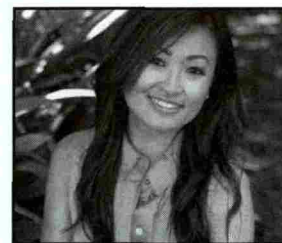
1. Arns M et al. Efficacy of neurofeedback treatment in ADHD: the effects on inattention, impulsivity and hyperactivity: a meta-analysis. *Clin EEG Neurosci.* 2009;40(3):180-9.
2. Mann C et al. Quantitative analysis of EEG in boys with Attention Deficit-Hyperactivity Disorder (ADHD): A controlled study with clinical implications. *Pediatric Neurology.* 1992;8:30-36.
3. Steiner NJ et al. In-school neurofeedback training for ADHD: Sustained improvements from a randomized control trial. *Pediatrics.* 2014;133(3):483-492
4. Duric NS et al. Neurofeedback for the treatment of children and adolescents with ADHD: a randomized and controlled clinical trial using parental reports. *BMC Psychiatry.* 2012;12: 107.
5. González-Castro P et al. Efficacy of neurofeedback versus pharmacological support in subjects with ADHD. *Appl Psychophysiol Biofeedback.* 2016;41:17.
6. Lamb J. (2011). Captain Cook and the scourge of scurvy. *BBC.co.uk.* Retrieved from http://www.bbc.co.uk/history/british/empire_seapower/captaincook_scurvy_01.shtml
7. Chaudhary AK et al. Cognitive enhancement in aged mice after chronic administration of Cedrus deodara Loud. and Pinus roxburghii Sarg. with demonstrated antioxidant properties. *J Nat Med.* 2013;68(2):274-83.
8. Carper J. (1998). *Miracle cures.* New York, NY: HarperPerennial. pp.221-236.
9. Chovanová Z et al. Effect of polyphenolic extract, Pycnogenol, on the level of 8-oxoguanine in children suffering from attention deficit/hyperactivity disorder. *Free Radical Research.* 2006;40(9):1003-10.
10. Luzzi R et al. Pycnogenol supplementation improves cognitive function, attention and mental performance in students. *Panminerva Medica.* 2011;53(3-1):75-82.
11. Bowtell JL et al. Enhanced task related brain activation and resting perfusion in healthy older adults after chronic blueberry supplementation. *Appl Physiol Nutr Metab.* 2017;1:1-7.
12. Whyte AR et al. Effects of a single dose of a flavonoid-rich blueberry drink on memory in 8 to 10 y old children. *Nutrition.* 2015;31(3):531-4.
13. Duan Y et al. The preventive effect of lotus seedpod procyanidins on cognitive impairment and oxidative damage induced by extremely low frequency electromagnetic field exposure. *Food Funct.* 2013;4(8):1252-62.
14. Yokozawa T et al. Role of oligomeric Proanthocyanidins derived from an extract of persimmon fruits in the oxidative stress-related aging process. *Molecules.* 2014;19(5):6707-26.
15. Messaoudi M et al. Antidepressant-like effects of a cocoa polyphenolic extract in Wistar-Unilever rats. *Nutr Neurosci.* 2008;11(6):269-76.
16. Sathyapalan T et al. High cocoa polyphenol rich chocolate may reduce the burden of symptoms in chronic fatigue syndrome. *Nutr J.* 2010;9:55.
17. Hozawa A et al. Green tea consumption is associated with lower psychological distress in a general population: the Ohsaki Cohort 2006 Study. *Am J Clin Nutr.* 2009;90:1390-6.
18. Niu K et al. Green tea consumption is associated with depressive symptoms in the elderly. *Am J Clin Nutr.* 2009;90:1615-22.
19. Robert A et al. Effect of procyanidolic oligomers on the permeability of the blood-brain barrier. *Pathologie Biologie.* 2001;49(4):298-304.
20. Johansson J et al. Altered tryptophan and alanine transport in fibroblasts from boys with attention-deficit/hyperactivity disorder (ADHD): an in vitro study. *Behav Brain Func.* 2011;24(7):40.
21. Boris M et al. Foods and additives are common causes of the attention deficit hyperactive disorder in children. *Ann Allergy.* 1994;72(5):462-8.
22. Uhlig T et al. Topographic mapping of brain electrical activity in children with food-induced attention deficit hyperkinetic disorder. *Eur J. Pediatr.* 1997;156(7):557-61.
23. Karege F et al. Decreased serum brain-derived neurotrophic factor levels in major depressed patients. *Psychiatry Res.* 2002;109(2):143-8.
24. Takeda A et al. Facilitated neurogenesis in the developing hippocampus after intake of theanine, an amino acid in tea leaves, and object recognition memory. *Cellular and Molecular Neurobiology.* 2011;31(7):1079-88.



James M. Greenblatt, MD, is the author of *Finally Focused: The Breakthrough Natural Treatment Plan for ADHD that Restores Attention, Minimizes Hyperactivity, and Helps Eliminate Drug Side Effects* (with Bill Gottlieb, Harmony Books, 2017). He currently serves as Chief Medical Officer and Vice-President of Medical Services at Walden Behavioral Care, and he is an Assistant Clinical Professor of Psychiatry at Tufts University School of Medicine and Dartmouth Geisel School of Medicine. An acknowledged expert in integrative medicine, Dr. Greenblatt has lectured throughout the United States on the scientific evidence for nutritional interventions in psychiatry and mental illness.

For more information, visit www.JamesGreenblattMD.com

Winnie T. Lee, RN, has provided research and editorial assistance for several book publications by James Greenblatt. She is a coauthor (with James Greenblatt) of *Breakthrough Depression Solution: Mastering Your Mood with Nutrition, Diet and Supplementation* (2nd ed., Sunrise River Press, 2016). She is currently pursuing a master's degree in nursing to become a psychiatric nurse practitioner.



Innovative Approach to Psychiatry: Treating Incurable Psychiatric Patients with Neural Therapy

by Michael I. Gurevich, MD

Conventional psychiatry has largely neglected the issues of finding the etiological factors of mental conditions and the means of resolving them. Since development of DSM-III,¹ psychiatry has ignored etiological factors; instead, it has focused on expanding the definition²⁻⁴ of who is psychiatrically abnormal, thus lowering the bar for introducing psychotropic medications and keeping patients in treatment indefinitely. This has led to high disability rates among psychiatric patients, frequent relapses, and a negative view of psychiatry.^{5,6} The general view is that once psychiatric conditions are diagnosed they are lifelong and the best one can hope for is a temporary palliation of symptoms. The long-term outcomes have been disappointing along with multiple side effects.

Neural therapy (NT), which is relatively unknown in English-speaking countries, is explored in this case review series. In my clinical practice, NT has been an effective tool in resolving long-standing psychiatric conditions that failed to respond to conventional psychiatric interventions.

Neural therapy is a highly effective and safe therapeutic technique poorly known in North America. In the hands of well-trained medical professionals, it is an indispensable primary or supporting component in the treatment of most known medical conditions.^{7,8}

One of my thankful patients proclaimed it to be “acupuncture on steroids” for its versatile effectiveness.

NT was developed in the early 20th century in Germany. It spread through German-speaking countries and Spanish-speaking countries of South America after World War II. In many countries, like Germany, Switzerland, or Columbia, it is a part of the conventional Western medical armamentarium reimbursed by healthcare insurance. In those countries, there is active academic research, publication, and teaching on NT effectiveness. Up to recently, it has failed to take hold in North America. Statistics are difficult to come by, but perhaps less than 150 medical practitioners are using it in their daily practice, even fewer are familiar with effective deep injection techniques.

Several theories explain how NT works.⁹ In short, its action is based on restoring function of dysregulated autonomic nervous system (ANS) activity, which controls the function of all internal organs. Every ANS center functions independently controlling a particular part of the body or organs but has multiple connections. The ANS components are highly sensitive and interdependent. Some factors, like scars, dental abscesses, or infections, can create so-called interference fields. They can affect the functioning of the ANS, creating difficulty in diagnosis

and treatment of symptoms such as headaches, hormonal disturbances, sleep disturbance, and anxiety issues. However, these conditions are often resolved by using NT therapy.

NT was originally developed by dentists and medical professionals with no training in dealing with psychiatric patients’ unpredictable reactions. Therefore, many psychiatric conditions were considered to be a contraindication for NT treatment.

I learned NT from a charismatic German-American physician Dietrich Klinghardt, MD, PhD, in the early 2000s. I gradually introduced it into my practice. Fortunately, by the time I learned that NT was contraindicated for psychiatric patients, I had personal experience to the contrary.^{10,11}

In this report, I will provide illustrations of how NT can be helpful in treating complicated psychiatric conditions for patients who failed conventional psychiatric interventions. NT interventions in psychiatry can serve as a main intervention and in a supportive role among several holistic treatment modalities.^{10,11} The practice of NT is greatly enhanced by use of Bioresonance Energetic Testing (BET) based on a blending of modified Autonomic Response Testing¹² (ART) and Bioresonance Analysis of Health (BAH).^{13,14} BET allows instant



Innovative Psychiatry

biofeedback to guide the practitioner in finding interference fields and effective ways of resolving them.

There are a number of recent published reports of successful treatment of refractory non-psychiatric conditions using NT.¹⁵⁻²⁶ Below are cases of treatment resistant psychiatric conditions.

Scars

Scars are the "bread and butter" of NT. They can create powerful interference fields, which may cause local or distant symptoms. Scar injections are easy to learn. They can be a very effective tool for some very intractable patients. There are a number of caveats for making the work effective: determining priority of treatment, dealing with emotions, finding hidden scars, and managing scars that do not respond to injections.

Most scars can be easily identified and are visible. The earlier in life scars occurred the more significant is their physical and emotional burden. Next in importance are scars that are associated with severe psychological traumas, and those in the middle of the body. Scars are generally infiltrated with preservative-free 1% procaine with the needle penetrating the length of the scar and all branches. Procaine is also injected deeper into tissue to address the non-visible parts of a scars.

To increase effectiveness, I usually ask the patient to recall the details of the circumstances of the trauma, in particular all the painful and traumatic memories. As the scar is being injected the patient tells the story of the scar. If emotions become overwhelming, patients are instructed to rotate their eyes following my hand which draws the number 8 several inches above their forehead. This maneuver is a form of Eye Movement Desensitization and Reprocessing (EMDR), which is a well-known post-traumatic stress disorder (PTSD) technique. A more advanced form of EMDR is Applied Psychoneurobiology (APN)¹⁴ in which the patient wears

colored glasses and is asked to hum in order to enhance emotions and help in their resolutions. If the patient begins to experience a severe dissociative state, the intervention is aborted and steps are made to return patient to present reality.

C-Sections or Episiotomy Scars

C-Sections or episiotomy scars are often a priority for women, particularly those suffering from postmenopausal anxiety, depression, or psychosis.

E. was a 28-year-old mother diagnosed with bipolar disorder, who had a six-year-old boy. She was in her eighth month of pregnancy, when after a loud argument with her mother, she was rushed to a hospital and underwent an emergency C-section by a resident on call. She developed postpartum depression treated with Paxil. Within a month, she developed mania and psychosis, which required hospitalization, and was diagnosed with bipolar disorder (antidepressant-induced manic switch is a common side effect). Post discharge she was heavily medicated, became non-compliant, and was re-hospitalized. She gained 30 lb. while on lithium, Seroquel, Depakote, and Klonopin.

After her initial C-section scar injection, she had a strong reaction being flooded with memories of her traumatic childhood: parents' fights and her feelings of never feeling accepted. After two more injections, she continued to process childhood traumas, remembered being abused during psychiatric hospitalizations, and processed her anger at her husband. During each injection, she focused on painful memories. Emotions were addressed doing APN. The preceding treatments provided relief and reduction in psychotropic medications.

Lifelong Anxiety and Insomnia

Anxiety is addressed by psychotherapy and several groups of medications. Medication can, at best, diminish symptoms but creates lifelong

medication dependence with side effects.

M. was a 72-year-old businessman, who chose to retire at 50 due to life-long anxiety and insomnia. For the last 30 years, he was treated with psychotherapy, multiple antidepressants, benzodiazepines, and antipsychotic medications with limited response. When he was three years old, he developed a fever of 104 degrees. In the hospital, a spinal tap was performed; and his parents were prohibited from seeing him for three days due to risk of infection. Since then, he has always suffered from insomnia and anxiety, fearful to sleep without a light. Using ART, the interference field was identified in the sacral area and injected with 2 cc of procaine subcutaneously and into the periosteum. The patient had an immediate response, experiencing profound regression lasting for over 30 minutes. He was sobbing, speaking in a childish voice, and calling for his parents. Injections were repeated twice more at weekly intervals, rendering less intensive responses. His anxiety significantly lessened, and he was able to taper several of his psychotropic medications.

Invisible scars are usually caused by injections, or vaccinations. It is difficult to locate them based solely on history. BAH testing gives direction where to look, and ART testing points to the precise location and identifies parts of the scar that need to be injected. Scars can create an interference field that can be easily identified. As treatment progresses and symptoms resolve, the thickness of the scar becomes smaller, sometimes making the scar difficult to see.

Tourette's Syndrome Resolved by NT

Tourette's syndrome (TS) requires lifelong treatment to suppress the patient's symptoms. Antipsychotic medications are the cornerstone of treatment, creating multiple side effects. Etiological factors of the disorder are rarely entertained or addressed.

L. was a 7-year-old, bright, athletic boy, suffering from Tourette's syndrome. He overcame Lyme disease, mycoplasma pneumonia, and fungal

infections using integrative treatment methods, but developed a mild tic disorder: involuntary blinking. At age 5, he had a sports-related, right femur fracture that kept him wheelchair bound for three months. His previously mild tic progressed to severe uncontrollable jerking of the head and hand and involuntary verbal exclamations. Due to his disruptive behavior in the classroom, he was shunned by his peers and teachers, being expelled from two private schools. Periosteal injection into the site of the fracture on his femur provided a "lightening response" (term used in NT when symptoms are markedly reduced or eliminated for 24 hours or longer) with a 90% symptom reduction lasting for two weeks. The symptoms recurred when he became stressed. Further examination using modified ART revealed interference fields behind his ears. Forceps were used during his complicated delivery. Periosteal injections into the mastoid processes were done and repeated two weeks later. Remission of symptoms lasted for six months, with only 10% of original symptoms remaining. An additional interference field was identified on the left parietal bone. Periosteal parietal bone injections resulted in remission with 95% symptom reduction, mild symptoms manifesting only during periods of stress.

Periosteum scars are invisible. They are caused by fractures or other injuries with or without skin penetration. Their location can be guessed from an interview, or located through muscle testing. To achieve effectiveness, the periosteum needs to be injected.

Insomnia Resolved by Scar Injections with DMPS

Conventional treatment of insomnia rarely explores etiology and often patients wind up on multiple medications for life.

E. was a 70-year-old psychiatrist suffering from lifelong insomnia. When she was five, while preparing for a bath, boiling water was accidentally spilled, causing extensive third degree burns on her left arm. At night, she had a dream that somebody tore the bandage from her arm. Since then, she has been

unable to fall asleep without sleeping pills. She had 11 amalgam fillings over the years, which were replaced with composite fillings at age 60. At the time of her initial visit, she was on Remeron, Seroquel, trazodone, and clonazepam. Injections around and into the scar were of limited success. Only after 50 mg of 2,3-dimercaptopropane-1-sulfonate (DMPS) was added to the preservative free 1% procaine did she respond to NT. The scar was injected with DMPS four times. Overcoming her fears of insomnia, she was able to titrate most of her medications, but resisted stopping a small dose of the trazodone, as she was "feeling too good and did not want to risk relapse".

Some scars do not respond to the treatment with procaine alone; usually it is due to deposits of heavy metals, like mercury, or severe emotional trauma that has not been addressed. Adding a chelating agent like DMPS to procaine helps to resolve the issue.

Bulimia

Conventional bulimia treatment relies on long-term use of psychotherapy, behavioral modification and medications. Success of treatment is limited and long-term treatment expensive.

A 46-year-old, German-descent, married female executive with a 20-year history of bulimia and multiple digestive issues was on an extremely limited diet, Tums, H2 blockers, Pepsid, Prilosec, Synthroid, and Lexapro. She self-induced vomiting every night. Also, any significant bending would cause vomiting. In her adolescence, she suffered from anorexia, bulimia, depression, insomnia, and substance abuse. She suppressed significant emotional issues, such as sexual abuse and her father's suicide. She converted to Judaism and wrote a book about her life journey trying to resolve her issues. Neural therapy was done to a scar on the right side of her face, segmental therapy of the esophagus and stomach, injections to the umbilicus (scar therapy), and thyroid gland. During the

injections, she was asked to focus on her long-standing emotional issues. She had strong emotional release, which was processed using APN.¹⁴ NT produced a "lightening reaction."

She stopped using all H2 blockers and Tums. She received two more NT treatments for constipation and lack of digestive enzymes, which were the results of long-term use of digestive acid blockers. Her self-induced vomiting ceased after the first NT session. Both self-induced and bending-induced vomiting stopped.

Menstrual Irregularities and Emotional Trauma

C. was a 23-year-old, obese female. She had long standing issues with mood irregularities, sexual identity confusion with bisexual relationships, polycystic ovary syndrome (PCOS), amenorrhea, hyper-sexuality, self-cutting, constant emotional instability, and inability to function. At 20 she was raped, which exacerbated her symptoms. Prior treatment with several mood stabilizers, antidepressants, antipsychotics, and psychotherapy had failed. Her integrative medicine treatment program included food supplements, acupuncture, guided imagery, meditation, and dietary changes. A series of NT injections to the uterovaginal plexus, thyroid gland, and adenoids was administered. Within three months, her menstrual cycle was restarted. She tapered off all psychotropic medications, completely stopped self-mutilation and developed a heterosexual monogamous relationship.

Injections into the uterovaginal plexus in conjunction with thyroid gland and adenoid NT injections help to restore hormonal dysregulations in most cases of PMS and PCOS. It has been proposed that the adenoid injections help regulate proper pituitary function.

Other NT Injections for Psychiatric Conditions

Some other injections are very helpful. Thyroid gland injections are



helpful for anxiety and panic attack. Injections around the skull, "Crown of Thorns," have multiple indications including in psychosis, cloudiness of the mind, and anxiety issues. One of the most examined injections is stellate ganglion injection for treatment of PTSD.²⁷⁻³⁰ It has been studied and practiced by anesthesiologists in the Veteran's Administration. It requires very special training and equipment, like sonogram or X-ray, as it is considered to be of high risk. However, as part of NT, it is administered in a very different manner, which is safe and does not require any special equipment.

Summary

As we have seen from the above examples, neural therapy is an effective therapeutic approach in intractable, treatment-resistant psychiatric conditions. It addresses and resolves etiological factors underlying psychiatric disturbance. The majority of NT injections are simple enough to be learned in two weekend courses. Some deeper injections require more training. It is an effective, safe, and inexpensive treatment method. It allows a lot of creativity and is professionally rewarding, as well as allowing practitioners to generate additional income. The majority of patients are receptive and have few complaints

about treatment. By addressing etiological factors, NT allows a complete resolution of patient's symptoms.

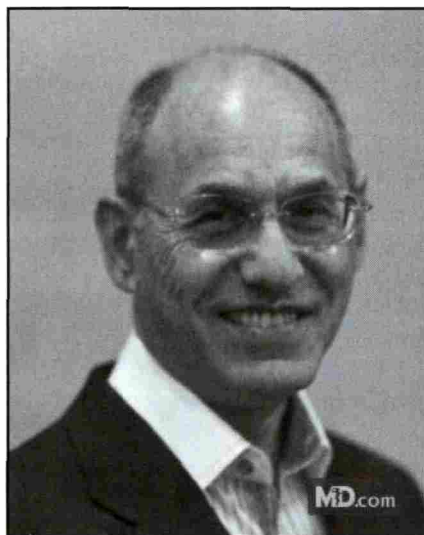
There is a movement to create a neural therapy association for North America. The first International Symposium of NT in North America was held May 2017. Hands-on training by the best European NT practitioners is being offered now. One course is offered for those who have limited experience or beginners. The second course for those who have been practicing NT, but want to deepen their skills and learn German Biological Medicine. For details see <http://www.holisticmd.org/upcoming-announcements/neural-therapy-workshops/>.

Acknowledgement: I want to thank the Won Sook Foundation for helping in the preparation of this manuscript.

References

1. DSM-III: *Diagnostic and Statistical Manual of Mental Disorders*, 3rd Edition. American Psychiatric Association;1985.
2. Frances A. *Saving Normal: An Insider's Revolt Against Out-of-Control Psychiatric Diagnosis, DSM-5, Big Pharma, and the Medicalization of Ordinary Life*. New York, NY: William Morrow Paperbacks; 2012.
3. Frances A. ICD, DSM and the Tower of Babel. *Aust N Z J Psychiatry*. 2014;48(4):371-373.
4. Frances A. The new crisis of confidence in psychiatric diagnosis. *Ann Intern Med*. 2013;159(3):221-222.
5. Whitaker R, Cosgrove L. *Psychiatry Under the Influence: Institutional Corruption, Social Injury, and Prescriptions for Reform*. Palgrave Macmillan; 2015.
6. Whitaker R. *Anatomy of an Epidemic: Magic Bullets, Psychiatric Drugs, and the Astonishing Rise of Mental Illness in America*. New York, NY: Broadway Paperbacks; 2010.
7. Dosch P, Dosch MP. *Manual of Neural Therapy According to Huneke*. New York, NY: Thieme; 2007.

Michael I. Gurevich, MD, C.Ac. is board certified in psychiatry, addiction psychiatry, and acupuncture. He has completed extensive training in integrative, functional, and orthomolecular medicine as well as in German Biological Medicine, neural therapy, and multiple energy-psychology disciplines. In his practice on Long Island, New York, he and his team treat very difficult psychiatric and medical patients who have failed to get better through conventional and other alternative treatments. Every year for the last 15 years, he has been named as one of the best psychiatrists on Long Island. He enjoys the challenges of seeing his difficult patients getting better and returning to health. For more information: www.HolisticMD.org

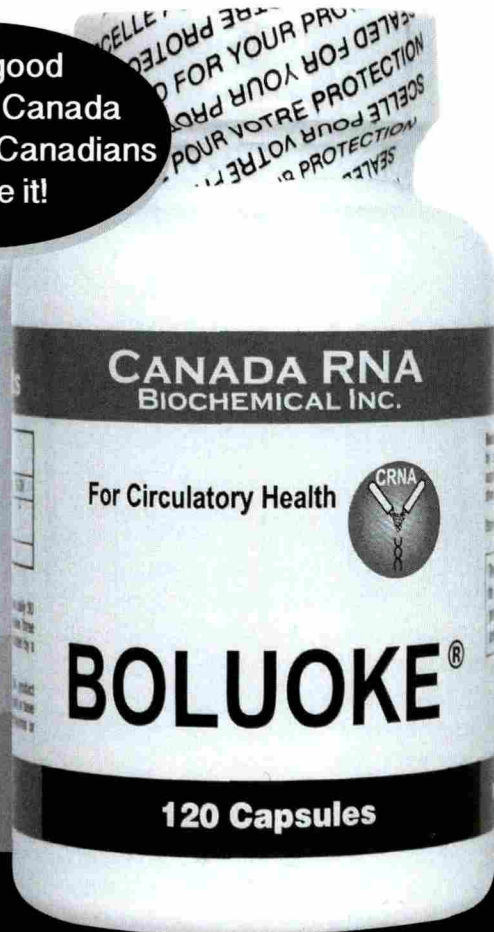


8. Dosch MP. *Atlas of Neural Therapy with Local Anesthetics*. 2nd ed. New York, NY: Thieme; 2012.
9. Kidd RF. *Neural Therapy: Applied Neurophysiology and Other Topics*. Renfrew, Ontario, K7V 1T6. Self-published rfkidd@on.aibn.com 2005
10. Gurevich MI, Robinson CL. An Individualized approach to treatment-resistant bipolar disorder: a case series. *Explore*. 2016; 12:237-245.
11. Gurevich MI, Robinson CL. Medication-free alternatives for long-term maintenance of bipolar disorder: a case series. *Glob Adv Health Med*. 2015;4(2):53-60. doi:10.7453/gahmj.2014.064.
12. Klinghardt D, editor. *Autonomic Response Testing seminar and manual*. Redmond, WA: Klinghardt Academy; 2012.
13. Szulc TK. *The Art of Medicine: The Principles of Energy in Medical Sciences*. Thomas K. Szulc; 2013.
14. Klinghardt D, editor. *Applied psycho-neurobiology seminar and manual*. Redmond, WA: Klinghardt Academy; 2012
15. Brobyn TL, et al. Neural Therapy: An Overlooked Game Changer for Patients Suffering Chronic Pain? *Pain Relief*. 2015; 4(3):1-4.
16. Weinschenk S. Neural therapy – A review of the therapeutic use of local anesthetics. *Acupuncture and Related Therapies*. 2012;1:5-9.
17. Hui F, et al. A randomized controlled trial of a multifaceted integrated complementary-alternative therapy for chronic herpes zoster-related pain. *Alternative Medicine Review*. 2012;17(1):57-68.
18. Chung MK, et al. Tongue piercing and chronic abdominal pain with nausea and vomiting – two cases. *Explore (NY)*. 2015;11(1):59-62.
19. Chung, MK, LaRiccia PJ. Successful treatment of chronic nausea and vomiting related to body piercing and tattooing with integrative medicine interventions. *Holist Nurs Pract*. 2015;29(1):33-6.
20. Mermod J, et al. Patient satisfaction of primary care for musculoskeletal diseases: A comparison between Neural Therapy and conventional medicine. *BMC Complementary and Alternative Medicine*. 2008;8:33.
21. Fischer L, et al. Neuralgia of the Glossopharyngeal Nerve in a Patient with Posttonsillectomy Scarring: Recovery after Local Infiltration of Procaine – Case Report and Pathophysiologic Discussion. *Case Reports in Neurological Medicine* Volume 2015, Article ID 560546.
22. Weinschenk S, et al. Successful therapy of vulvodynia with local anesthetics. A case report. *Forsch Komplementmed* 2013;20:138-143.
23. Sahaa FJ, et al. Successful Endoscopic Neural Therapy of a Patient with Chronic Pain Syndrome after Rectum Gunshot Injury. *Forsch Komplementmed*. 2014;21:310-313.
24. Chung MK, LaRiccia PJ. Successful Integrative Medicine Assessment and Treatment of Chronic Pain Associated With Breast Surgery: A Report of 3 Cases. *Holist Nurs Pract*. 2017;31(1):21-29.
25. Fischer L, Pfister M. Wirksamkeit der Neuraltherapie bei überwiesenen Patienten mit therapieresistenten chronischen Schmerzen. *Schweiz. Zschr. GanzheitsMedizin* 2007;19(1)30-35.
26. Egli S, et al. Long-term results of therapeutic local anesthesia (neural therapy) in 280 referred refractory chronic pain patients. *BMC Complementary and Alternative Medicine*. 2015;15:200 DOI 10.1186/s12906-015-0735-z
27. Lipov EG, et al. A unifying theory linking the prolonged efficacy of the stellate ganglion block for the treatment of chronic regional pain syndrome (CRPS), hot flashes, and posttraumatic stress disorder (PTSD). *Medical Hypotheses*. 2009; 72:657-661.
28. Mulvaney SW, et al. The use of stellate ganglion block in the treatment of panic/anxiety symptoms with combat-related post-traumatic stress disorder; preliminary results of long-term follow-up: a case series. *Pain Pract*. 2010; 4:359-65.
29. Hicky A, et al. Stellate ganglion block for PTSD. *Am J Psychiatry*. 2012 Jul;169(7):760.
29. Hanling SR, et al. Stellate Ganglion Block for the Treatment of Posttraumatic Stress Disorder: A Randomized, Double-Blind, Controlled Trial. *Reg Anesth Pain Med*. 2016 Jul-Aug;41(4):494-500.
30. Mulvaney SW, et al. Stellate ganglion block used to treat symptoms associated with combat-related post-traumatic stress disorder: a cases series of 166 patients. *Military Medicine*. 2014; 79:1133-1140.

Michael I. Gurevich, MD
997 Glen Cove Ave.
Glen Head, New York 11545
516-674-9489
Fax: 516-759-5916
www.HolisticMD.org
MIGurevich@gmail.com

HYPERCOAGULATION

It's so good
that Health Canada
doesn't want Canadians
to have it!



A central issue in:

- conditions with a poor circulation
- growth and spread of malignant cells
- chronic infections with biofilm
- poor tissue healing due to hypoxia

Boluoke® (lumbrokinase),
simply the best in:

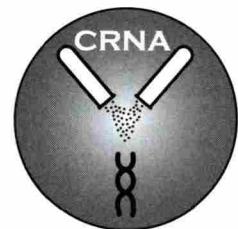
- Enzymatic strength
- Research data
- Quality, safety, and efficacy

Your Patients. Your Reputation.
TRUST NOTHING LESS!

Boluoke® is also available through



Dragon's www.dragonsmedicalbulletin.com
Medical Bulletin
Your Quick Stop for Integrated Clinical Research Updates



1-866-287-4986

www.canadaRNA.com

High Tech Ingenuity Produces a Breakthrough Program to Help with the Symptoms of Autism, ADHD, Dementia, and Amnesia

by Mary Ann Block, DO, PA

Karis was a nine-year-old child who had been prescribed two medications, gabapentin and Lyrica, for stomach pain. Very quickly after starting the medications, Karis lost her memory. She didn't know who she was or who her parents or siblings were, and she didn't know why she was in her own home.

Karis' mother asked the prescribing doctor if the two medications he had prescribed could cause this sudden onset of amnesia. The doctor told her, "No." Uneasy with his answer, the mother stopped giving Karis the two medications anyway because she thought the correlation was obvious. Karis took the drugs; Karis lost her memory.

When Karis came to The Block Center several months' later, she was still suffering with total amnesia daily. When I looked up the two drugs in the PDR, I found that they each listed amnesia as a side-effect.

Finding Help

After working with children diagnosed with ADHD and autism for over 25 years, I had made an observation: While the children usually improved with my bio-medical approach, they often continued to experience learning and processing problems. I would refer them to different programs for auditory processing, visual training, or

sensory integration. In my first year of medical practice, over 25 years ago, I had discovered sensory integration, a program developed by Jean Ayres. Jean Ayres defined sensory integration as "the neurological process that organizes sensations from one's own body and from the environment and makes it possible to use the body effectively within the environment." This theory explains why individuals respond in a certain way to sensory input.

I attended courses and became trained in sensory integration. I also became familiar with developmental optometry and auditory processing. Each of these programs has a long history of success and supportive research. However, these programs worked on only one sense at a time and can take many months to make positive changes.

I wanted to make changes faster and more consistently, and my research led me to the concept of "multi-sensory integration."

Multisensory Integration

Programs like auditory processing or visual training are all excellent programs, but they utilize only one sense at a time. Studies are clear now that multisensory integration, stimulation of many senses at once, works faster and better than stimulating only one sense at a time.

Stimulating at least two senses at one time not only improves the result but also increases the speed at which the results occur:

- "Human beings in their interaction with the world do not perceive sensory events as singular events. Sound, touch, sight, taste, smell, proprioception, and vestibular information interact to form the processes and mechanics by which humans learn and experience. Integration of sensory information provides a foundation on which behavior and cognition develop and mature."¹
- "Multisensory integration of cross-modal stimulus combinations yielded responses that were significantly greater than those evoked by the best component stimulus."²
- "When sound and touch were activated simultaneously, the activation of the auditory cortex was strongest. Auditory information in conjunction with tactile input assists with making tactile decisions. Tactile and auditory stimulation simultaneously and individually may positively impact neuroplastic changes in individuals with neurological deficits or impairments. Used singularly, sound produced greater brain activation than touch. When both tactile and

auditory stimuli were conveyed simultaneously, the response was more intense. Differences between sound and touch versus a combination of the two stimuli were significant. Again, the combined stimuli were most significant.”³

- “Early cortical centers are no longer thought to be unisensory. Multisensory stimulation results in greater activation of cortical centers and sound permits individuals to make tactile decisions.”⁴

At this point I developed a multisensory integration program, based on decades of published research and optimized by today’s technology, for the children I see who have been diagnosed with autism and ADHD. I call it The SAVE Program for Sensory-motor, Auditory Visual Education. The program takes one hour twice daily for five days to get the maximum benefit from it. It is passive to the client in that they do not have to be actively involved with any exercises. The client lies on the reclining chair that moves while listening to special filtered music through headphones and looking at colored lights on a screen. This computerized process has resulted in a sensory integration experience that works faster and more consistently.

Senses Addressed with the SAVE Program

1. **Tactile/Kinesthetic** is important for the development of body awareness, fine motor skills, and motor planning. Unorganized kinesthetic input may be seen as someone who has trouble in crowds, pulls away from hugs, has to touch everything, or is bothered by certain clothes or foods such as someone attending to the tags in their clothes or the seams in their socks.
2. **Vestibular** affects development of balance, coordination, eye control, attention, being secure with movement, emotional security, and even language development. Disorganized vestibular processing may be seen when someone has difficulty with attention, coordination, following directions,

reading, or eye-hand coordination. Language delay may be the result of immature sensory processing.

3. **Proprioception** requires input from kinesthetic and vestibular systems. Unorganized processing of proprioception is seen as someone who is clumsy, falls or stumbles, is aggressive, walks on toes, constantly chewing on food or objects, has difficulty motor planning, and/or is messy at mealtime.
4. **Auditory** is aided by listening with the right ear, which allows the information to go directly to the left hemisphere. The left hemisphere is more involved in language processing.
5. **Visual** stress or learning disabilities may cause reduced perceptual visual fields. This affects the volume of information processed through the eyes and affects all aspects of daily living including academic achievement, work proficiency, and athletic performance.

I did not include taste and olfaction because so many have food and smell sensitivities.

Ear Dominance

One of the major changes that occur with the SAVE Program is changing the individual from “left” to “right” ear dominance. Studies find that most people prefer to listen with their right ears and actually are more likely to perform a favor when the request is made in the right ear instead of the left. “Not only do humans prefer to hear in the right ear, we actually hear information better in our right ears.” In order to report from the left ear, the signal has to travel from the right auditory cortex, via the corpus callosum, to the language dominant left temporal region.⁵

In other words, if you listen with your right ear, the information goes directly to the listening center in the left side of the brain and you only have to hear it once. However, if you listen with the left ear, the information goes to the right side of the brain. You must then send the information to the left side of the brain to actually understand

it. That takes an extra step. If you are giving more than one instruction at a time, you can see how someone would have difficulty transferring what you told them. They might get the message scrambled, or they might miss the message completely.

I tested ear dominance in 100 children diagnosed with ADHD. 100% were “left” ear dominant. After the SAVE Program everyone had converted to “right” ear dominance. Parents and teachers observed subjective changes of improved listening.

ADHD

Using prescription medication for the symptoms of ADHD does nothing for treating the actual underlying cause of ADHD symptoms. Making diet changes, treating allergies, chronic strep and nutritional deficiencies can help reverse the symptoms called ADHD. Too often learning and processing problems are not addressed when treating children with an ADHD diagnosis.

Learning and paying attention depend on the ability to integrate and organize information from our senses. To be successful learners, our senses must work together in an organized manner. A person diagnosed with ADD or ADHD, due to their difficulty paying attention, may in fact have an immature nervous system causing dysfunction, making it difficult to filter out nonessential information, background noises or visual distraction and focus on what is essential.⁶

- *Visual Processing in Learning:* “Compared to the normal control group, the children with ADHD showed abnormal functional activity in several regions of the brain involved in the processing of visual attention information. The researchers also found that communication among the brain regions within this visual attention-processing pathway was disrupted in the children with ADHD. Functional brain pathways disrupted in children with ADHD.”⁷
“Dyslexic children seem to have some highly specific visual deficits in processing moving stimuli.”⁸

Autism, ADHD, Dementia, and Amnesia

- *Auditory Processing in ADHD:* "Children with learning problems exhibited plasticity of neural encoding following participation in a remediation auditory processing program. The plasticity was accompanied by changes in behavioral performance."⁹
- *Vestibular Processing in ADHD:* "Vestibular and visual stimulation together, especially the vestibular part, may benefit children with ADHD."¹⁰
- *Proprioception in ADHD:* "Motor learning relies on integrated sensory inputs in ADHD, but over-selectively on proprioception in autism spectrum conditions. Slower rate of adaptation and anomalous bias towards proprioceptive feedback during motor learning are characteristics of autism, whereas increased variability in execution is a characteristic of ADHD."¹¹

"Children with ADHD symptoms displayed greater abnormalities in sensory modulation."¹²

Autism

Paul was diagnosed with autism at age 2. Although he attended school and could do his assignments fairly well, his mother explained that Paul could not speak. "He spoke *gibberish* and an occasional repetitive phrase, but never really spoke a meaningful sentence in his entire life," she said. Paul would make his needs known by pointing at things. He was 16 years old when he participated in the SAVE Program.

Soon after completing the SAVE Program, Paul did something unexpected. During a trip to the mall

with his mother, Paul walked up to an attendant at a carousel and asked how much it would cost to ride. "He had never done anything like that before," his mother recalled. "Usually he would have just climbed on the ride." She credits the SAVE Program for the change in her son. He is now talking in full, complete and complex sentences for the first time, with purpose and understanding. He has continued to expand his vocabulary and his family and teachers are quite surprised and pleased with his progress.

Paul's response to the SAVE Program is not unique. Many children on the autism spectrum have begun to speak or communicate for the first time after completing the SAVE Program. Since these children are generally unable to follow directions, they were not candidates for programs requiring that. The SAVE Program requires no effort on the part of the patient allowing these children to benefit from it.

There are multiple studies associating autism with sensory dysfunction. Children on the autism spectrum often have problems with touch or don't make eye contact or have sound sensitivity problems.

Autism Spectrum Disorders (ASDs) are defined clinically by impairment in communication, social interaction, and behavioral flexibility.... There is mounting evidence for disruption of the auditory and visual processing pathways and a surging interest in multisensory integration.... Many of the atypical perceptual experiences reported in those with ASD are believed to be due to an inability to properly filter or process simultaneous channels of visual,

auditory, and tactile inputs. There is evidence that sensory illusions that require proper inputs across multiple domains operate at a different level in ASD, compared with typically developing individuals.¹³

Alzheimer's

Paul, an active and bright attorney and CPA, had been diagnosed with Alzheimer's. He had gradually lost his memory until he could no longer work. If he tried to tell a story, he quickly asked his wife to finish it because he could not remember what he was trying to say. He could not keep up with his belongings and could no longer do the things he loved. He was unable to do math even though he was a CPA and a math major in college. His handwriting disintegrated until it was illegible. He felt anxious, was agitated and socially shut down and couldn't interact with others.

After the SAVE Program, Paul's memory was much better, his wife said. "He could recall and tell stories from start to finish again. His word-find improved. He was using words that were lost to him for a long time," she explained.

Paul became motivated to do things again. He helped out around the house where before he would have just slept, his wife said. "He is working in the yard and asked the doctor to give him permission to use the lawnmower again." His wife says that Paul's visual perception has improved.

There appears to be no question that those diagnosed with dementia also have sensory problems:

- "Central auditory speech-processing deficits may be an early manifestation of probable Alzheimer's disease and may precede the onset of dementia diagnosis by many years."¹⁴
- "In patients with Alzheimer's disease (AD), compared with age-matched and young healthy control subjects, visual deficits in the following functions were observed: color, stereoacuity, contrast sensitivity, and backward masking (homogeneous and pattern)."¹⁵
- "Alzheimer's disease is a complex disorder whose etiology is still controversial. It is proposed that

Dr. Mary Ann Block is Medical Director of The Block Center, an international clinic for the treatment of chronic health problems in children and adults. She is an international expert on the treatment of ADHD without psychiatric drugs. Her approach is to look for and treat the underlying problem instead of covering the symptoms with drugs.

Dr. Block is the author of the top-selling books, *No More ADHD, No More Ritalin and No More Antibiotics: Treating Ear and Respiratory Infections The Natural Way, Just Because You're Depressed Doesn't Mean You Have Depression, The ABC's of Raising Great Kids and Today I Will Not Die.*

Dr. Block chairs The Health and Empowerment Committee for The National Foundation for Women Legislators, and has served as a peer reviewer for the Agency for Health-Care Policy and Research and the American Academy of Pediatrics for the diagnosis and treatment of ear problems.

Autism, ADHD, Dementia, and Amnesia

vestibular loss may contribute to the onset of Alzheimer's disease, which initially involves degeneration of cholinergic systems in the posterior parietal-temporal, medial-temporal, and posterior-cingulate regions. A major projection to this system emanates from the semicircular canals of the vestibular labyrinth, with vestibular damage leading to severe degeneration of the medial-temporal region. The vestibular loss hypothesis is further supported by the vestibular symptoms found in Alzheimer's patients as well as in various diseases that are major risk factors for Alzheimer's disease."¹⁶

Karis' Memory Returns

Karis and her mom returned on a Thursday for the fourth day of the SAVE Program. Karis was smiling. Her family had not seen her smile for months. She had only shown fear. Karis was smiling because when she woke up that morning all of her memory had returned. She knew who she was. She knew who her parents were. She even

knew who I was. She wanted to surprise me with this good news.

One year later, Karis has continued to retain her memory with no problems. She is now back to being that happy nine-year-old girl she had always been.

Summary

Sensory disorders can result in significant cognitive dysfunctions. Sensory integration and other individual processing trainings, which address these issues, can take months to see results and are not designed for the many patients who cannot follow directions.

In an age of expedient technological advancements, the SAVE Program can deliver sensory integration to more people, no matter how limited their abilities, in a consistent and accelerated program. It was designed to use automation and digital accuracy to optimize the opportunity to advance sensory integration in the 21st century.

References

1. Schürmann M, et al. Touch activates human auditory cortex. *NeuroImage*. 2006;30:1325-1331.
2. Alvarado JC, et al. Multisensory Versus Unisensory Integration: Contrasting Modes in the Superior Colliculus. *J Neurophysiol* 97: 3193-3205, 2007.
3. Kayser C, et al. Integration of touch and sound in the auditory cortex. *Neuron*. 2005;48:373-384.
4. Foxe J, et al. Auditory-somatosensory multisensory processing in auditory cortex: an fMRI study. *J Neurophysiol*. 2002;88:540-543.
5. Luca Tommasi and Daniele Marzoli of the University "Gabriele d'Annunzio" in Chieti, Italy.
6. Nicholls D, Syvertson P. *Sensory Integration, Attention, and Learning*. 2009.
7. Radiological Society of North America. November 30, 2011.
8. Scheuerpflug P, et al. Visual information processing in dyslexic children. *Clinical Neurophysiology*. 2004;115:90-96.
9. Hayes EA, et al. Neural Plasticity Following Auditory Training in Children with Learning Problem. *Clinical Neurophysiology*. 2003;114:673-684.
10. Arnold LE, et al. Vestibular and visual rotational stimulation as treatment for attention deficit and hyperactivity. *American Journal of Occupational Therapy*. 1985;39: 84-91.
11. Izawa J, et al. Motor learning relies on integrated sensory inputs in ADHD, but over-selectively on proprioception in autism spectrum conditions. *Autism Res*. 2012 Apr;5(2):124-36.
12. Mangeot SD, et al. Sensory modulation dysfunction in children with attention-deficit-hyperactivity disorder. *Dev Med Child Neurol*. 2001;43(6):399-406.
13. Marco EJ, et al. Sensory Processing in Autism: A Review of Neurophysiologic Findings. *Pediatric Res*. 2011;69:48R-54R.
14. Gates GA, et al. Central Auditory Dysfunction May Precede the Onset of Clinical Dementia in People with Probable Alzheimer's Disease. *Journal of the American Geriatrics Society*. March 2002;50(3):482-488.
15. Cronin-Golomb A, et al. Visual dysfunction in Alzheimer's disease: Relation to normal aging. *Annals of Neurology*. January 1991;29(1):41-52.
16. Previc FH. Vestibular loss as a contributor to Alzheimer's disease. *Medical Hypotheses*. April 2013;80(4):360-367.

Knowledge Changes Everything.



Quality | Innovation | Experience | Since 1974

The College Pharmacy Difference.

The number of compounding pharmacies exhibiting at health and wellness conferences has increased dramatically over the last 10 years. And yet...

For over 40 years, it has been College Pharmacy's compounding process, attention to detail, and the quality of the compounding components that continues to make our formulations exceptional.

- ✓ Sterile and Non-Sterile Comprehensive Compounding Services
- ✓ Specialty Injectables & IV Protocols
- ✓ Expanded BHRT Fused Pellet Selection
- ✓ Homeopathic Injectables: Pain, Immune, Detox, Injury, and many more.
- ✓ Pharmaceutical Grade Supplements

College Pharmacy's compounding practices are both USP 795 and 797 compliant. Our testing protocol includes: potency, sterility, endotoxin, and fungal testing.

Nationwide & International Services
Practitioner Training & Patient Resources



www.collegepharmacy.com
customerservice@collegepharmacy.com
Tel: (800) 888-9358



Pharmaceutical Companies Behind the Eight Ball in Treatment of Mitochondrial Dysfunction

by Debby Hamilton, MD, MPH

Introduction

As mitochondrial dysfunction has become better recognized as a factor in disease, research is starting to focus on targeted treatment. Pathology in chronic disease is repeatedly showing damage to the mitochondria. Oxidative stress from the environment causes harm to the mtDNA, proteins, and lipids of the mitochondria leading to decreased energy production. If the mitochondria are less efficient, more free radicals are produced. This creates an ongoing cycle of progressive mitochondrial dysfunction.

Currently, there are no FDA-approved treatments for mitochondrial disease.¹ Multiple pharmaceutical companies have ongoing early clinical trials targeting mitochondria. Upon looking at the mechanisms of these medicines, it is apparent they are targeting specific areas of mitochondrial dysfunction. Although energy production through the mitochondria involves multiple steps, these new medicines focus on one specific function.

Targeting Oxidative Stress

One pharmaceutical medicine currently in clinical trials is MTP-131.¹ The medicine is administered by IV or topically for ophthalmic use. The medicine MTP-131 was created to enter

the mitochondria to reduce oxidative stress. The target of the medicine is a lipid called cardiolipin, which is critical for the inner mitochondrial cell membrane. The electron transport chain forms ATP exclusively on this inner membrane. If the membrane is altered causing damage to the cardiolipin, it releases cytochrome C into the cytosol of the cell beginning the process of apoptosis or self-destruction of the mitochondria. Often, an increase in free radicals causing oxidative stress will damage cardiolipin.

Targeting Activation of Nrf2

Activating the Nrf2-Keap 1 pathway begins a cascade of events that decrease inflammation and increase antioxidants. It initiates the production of the antioxidant enzymes catalase, superoxide dismutase, and glutathione peroxidase. Activation of Nrf2 also decreases the release of pro-inflammatory cytokines such as TNF-alpha. Mitochondrial efficiency and ATP production are also enhanced by this pathway. Targeting these cellular processes through the Nrf2 pathway has been an aim of pharmaceutical companies. A medicine called RTA 408 was developed to activate Nrf2. Clinical pre-phase 3 trials are currently underway.

Targeting Production of Glutathione

An investigational medicine called RP 103, a form of cysteamine, is in clinical trials.¹ The molecule helps convert cystine into cysteine needed for formation of glutathione. Glutathione is the main antioxidant in cells. Cysteine is the rate-limiting amino acid in glutathione production. The medicine, by increasing levels of glutathione in the cells, is predicted to decrease oxidative stress damage to the mitochondria. Ongoing, open-label clinical trials are determining dosing levels, safety, and efficacy of the new medicine.

Natural Alternatives

From an integrative perspective, it is more important to look at the underlying cause of the disease than the disease itself. Understanding the cellular mechanisms will help guide treatment more than a diagnosis. If there is mitochondrial dysfunction or oxidative stress, this needs to be treated. It does not matter if the disease is autism or Alzheimer's.

Targeting mitochondrial function involves supporting the mitochondrial membrane and supplementing the key nutrients needed for the formation of ATP.^{2,3} It also requires increasing antioxidant reserves in the body and decreasing oxidative stress. A

comprehensive treatment approach requires supporting these functions simultaneously instead of one targeted treatment as in the pharmaceutical approach.

While the pharmaceutical companies are studying precursors for glutathione, liposomal glutathione is already available. Research on absorption has shown increases in glutathione levels with oral use.⁴ In addition, studies have shown clinical improvements in chronic disease with oral liposomal glutathione.⁵ Since glutathione is a critical antioxidant in the body, being able to safely and effectively restore levels is crucial for healing.

Many natural treatments have been shown to activate Nrf2 receptors. Curcumin, one of the active ingredients in turmeric, has multiple studies showing its ability to bind to the Nrf2 receptor and decrease pro-inflammatory cytokines.⁶⁻⁸ Resveratrol and EGCG in green and black tea extract have been also shown to be effective. Polyphenols, which include curcumin, resveratrol, and EGCG among others, all appear to be able to activate Nrf2 to increase antioxidants and decrease inflammation.⁹⁻¹³

A unique antioxidant, molecular hydrogen, has research supporting its ability to activate Nrf2 receptors also.¹⁴⁻¹⁶ In addition, molecular hydrogen has the capability to scavenge the dangerous hydroxy free radical.¹⁴⁻¹⁶ This free radical is highly reactive with cellular tissues resulting in more oxidative stress. Molecular hydrogen does not affect the free radicals needed for mitochondrial function or the activation of the antioxidant enzyme cascade including superoxide dismutase and catalase.¹⁴⁻¹⁶

Finally, awareness of the importance of mitochondria dysfunction and oxidative stress are being recognized for their role in chronic disease. Integrative medicine has been treating these issues for years. With an integrative and holistic mind set, we are well aware of the importance of a multi-modal approach. The pharmaceutical industry is trying to target the correct pathways but is still focusing on one part of a complex puzzle. Luckily, we have many

natural treatments to implement simultaneously to promote recovery from chronic illness.

References

1. Newman M. Effective Therapies and Diagnostics for Mitochondrial Disease Remain an Unmet Need. October 27, 2015.
2. Nicolson GL et al. Lipid replacement therapy with a glycerophospholipid formulation, NADH, and CoQ10 significantly reduces fatigue and improves mood and cognition in intractable fatiguing illnesses and chronic Lyme disease. *International Journal of Clinical Medicine*. 2012; 3:163-170.
3. Nicolson GL, Ellithorpe RR. Lipid replacement and antioxidant nutritional therapy for restoring mitochondrial function and reducing fatigue in chronic fatigue syndrome and other fatiguing illnesses. *J Chronic Fatigue Syndr*. 2006;13(1):57-68.
4. Sinha R. Oral Liposomal Glutathione Supplementation in Healthy Subjects. <https://clinicaltrials.gov/ct2/show/NCT02278822?term=liposomal+glutathione&rank=1>
5. Rosenblatt M et al. Anti-oxidant and anti-atherogenic properties of liposomal glutathione: studies in vitro and in the atherosclerotic apolipoprotein E deficiency in mice. *Atherosclerosis*. 2007 Dec; 195(2): e61-8.
6. Aggarwal B, Harikumar K. Potential Therapeutic Effects of Curcumin, the Anti-Inflammatory Agent, Against Neurodegenerative, Cardiovascular, Pulmonary, Metabolic, Autoimmune and Neoplastic Diseases. *Int J Biochem Cell Biol* 2009; 41(1):40-59.

7. Sahin K et al. Curcumin prevents muscle damage by regulating NF- κ B and Nrf2 pathways and improves performance: an in vivo model. *J Inflamm Res* 2016 Aug.
8. Xie YL et al. Curcumin attenuates lipopolysaccharide/d-galactosamine-induced acute liver injury by activating Nrf2 nuclear translocation and inhibiting NF- κ B activation. *Pharmacother*. 2017 Apr 24;91:70-77.
9. Moline S et al. Polyphenols in dementia. From molecular basis to clinical trials. *Life Sci*. 2016 Sep 15;161:69-77.
10. Pocernich CB et al. Nutritional approaches to modulate oxidative stress in Alzheimer's disease. *Curr Alz Res*. 2011 Aug;8(5):452-69.
11. Rangarajan P et al. Role of dietary phenols in mitigating microglia mediated neuroinflammation. *Neuromolecular Med*. September 2016.
12. Shanmugam T et al. Epigallocatechin gallate potentially abrogates fluoride induced lung oxidative stress, inflammation via Nrf2/Keap1 signaling pathway in rats: An in-vivo and in-silico study. *Int Immunopharmacol*. 2016.
13. Thiel G, Rössler OG. Resveratrol regulates gene transcription via activation of stimulus-responsive transcription factors. *Pharmacological Res*. 2017 Mar;117:166-176.
14. Ichihara, M et al. Beneficial biological effects and the underlying mechanisms of molecular hydrogen - comprehensive review of 321 original articles. *Med Gas Res*. 2015. 5: p. 12.
15. Ohta, S. Molecular hydrogen as a preventive and therapeutic medical gas: initiation, development and potential of hydrogen medicine. *Pharmacol Ther*. 2014.
16. Yu, J et al. Molecular hydrogen attenuates hypoxia/reoxygenation injury of intrahepatic cholangiocytes by activating Nrf2 expression. *Toxicol Let*. 2015. 238(3): p. 11-19.

Dr. Debby Hamilton, MD, MPH, is a pediatrician with experience in primary care, integrative medicine, research, speaking, and writing. Her education includes an undergraduate degree from Wesleyan University followed by a medical degree from Chicago Medical School, where she graduated with honors. She is board-certified in pediatrics, physician nutrition, and integrated/holistic medicine (AIHM), and has a Master of Science degree in Public Health (MPH). Dr. Hamilton founded Holistic Pediatric Consulting in Colorado in 2005. Her practice focused on treating children with chronic diseases such as autism and ADHD and preconception counseling based on her book, *Preventing Autism and ADHD: Controlling Risk Factors Before, During & After Pregnancy*. Her book led to her collaboration in the writing of *The Healthy Child Guide* through the Neurological Health Foundation. She has also contributed chapters for *Child Decoded: Unraveling Learning and Behavioral Disorders*. In 2017, Dr. Hamilton joined Researched Nutritionals. Her focus is managing and expanding Researched Nutritionals' clinical research on the efficacy of nutritional supplements, working on protocol development, and promoting the education of healthcare professionals.





Innovative Integrative Addiction Treatment = Unparalleled Growth Opportunity

by Dalal Akoury, MD

Whether addiction is behavioral or is due to psychoactive substances (e.g., alcohol, illicit drugs), it is a debilitating disorder personified by compulsive drug-seeking and recurring deadly use, despite adverse consequences.¹

The magnitude of the addiction epidemic is reaching far beyond our nation, infiltrating every segment of the globe. The use of illegal drugs is creating devastating problems worldwide, creating an opportunity for us to conquer addiction successfully, and profit both professionally and financially – as we can appreciate from the following staggering facts^{2,3}:

- 38 million Americans are heavy drinkers, according to the CDC.
- Approximately 23.6 million people suffer from addiction in the United States alone, and only three million people received treatment for their addiction in 2011.
- 100 Americans die from preventable overdose every day, per the CDC. This rate has tripled in the past 20 years.
- Those seeking Rx for opioid addiction has increased 770% in the last 15 years.
- In 2010, more than 12 million people reported using pain killers non-medically.

- 85% of the people with alcohol abuse or dependence go untreated.
- Heroin is the most widely used opiate with more than 900,000 estimated users.
- Heroin use rose by 75% between 2007 and 2011.
- Fifty-two million people over the age of 12 in the USA have received drugs non-medically in their lifetime.
- Over 5 million emergency room visits in 2011 were drug related.
- 9.4 million people in 2011 reported driving under the influence of illicit drugs.

Tremendous Need for Addiction Treatment

Seizing opportunities to tackle unmet challenges in addiction treatment may result in huge economic and philanthropic gains. The addiction epidemics and treatment market share in the US alone is \$35 billion annually.

- Medical doctors, healthcare professionals, and young lawyers face an enormous amount of stress from large debt payments and a shrinking market for entry-level jobs coming out of college. Twenty-nine percent of lawyers in their first decade of practice report problematic drinking behavior.

- 6.8 million people with an addiction have a mental illness.
- Rates of illicit drug use is highest among those aged 18 to 25.
- Over 90% of those with an addiction began drinking, smoking, or using illicit drugs before the age of 18.
- 770% increase in those seeking Rx for opioid addiction in the last 15 years
- The number of prescription medicine abusers in 2010 was 8.76 million:
 - Painkillers: 5.1 million
 - Tranquilizers: 2.2 million
 - Stimulants: 1.1 million

Addiction – A Complex Multi-Faceted Disease

Addiction is a complex disease resulting from an intricate interaction between the genes and environment.⁴ In the past, treatment has been focused on the emotional needs and behaviors associated with addiction while ignoring or under-utilizing physiological, biological, and epigenetics solutions that go to the heart of addiction: the intense craving to use and the neuro-endocrine imbalances. The dance between the genes and the ecosystem exert additive, and interactive effects across the person's being.⁵ The gene-environment communications

interweave at a molecular level. The crucial role of epigenetics in addiction is rapidly reaching a central stage and is continuously unraveling. Epigenetics are believed to mediate vulnerability to disorders, including addiction.^{6,7}

Epigenetic mechanisms, such as DNA methylation, regulate when and where genes are expressed without changing the DNA sequence itself.⁵

A growing number of studies have begun to clarify the role of DNA methylation in substance abuse and addiction. Experimental studies in animals have shown the following:

- Substance use can alter DNA methylation – that is, repeated administration of alcohol and cocaine to animals modify methylation patterns in the reward regions of the brain.⁸
- DNA methylation contributes to the pathophysiology of addiction. Drug-induced methylation alterations influence the expression of genes involved in synaptic plasticity and memory consolidation, resulting in long-term neuroadaptation alterations that influence the onset and stubbornness of addictive behaviors.⁷
- Transgenic effect of alcohol intake during the first half of pregnancy has been found to alter epigenetic patterns in the developing embryo, leading to reduced fetal growth and congenital abnormalities similar to those observed in human fetal alcohol syndrome, as well as subsequent risk for addiction.⁹
- Human studies support the methylomic epigenetic differences between substance abusers and

drug-free controls across a number of substances and tissue types.^{5,10}

Homocysteine, Folate, Methylation, and Monoamine Metabolism

Numerous studies support a link between folate disorders and impaired metabolism of serotonin, dopamine, and noradrenaline, the neurotransmitters directly implicated in the addiction spectrum disorders. Homocysteine, folate, and monoamine metabolism, therefore, play a major role in addiction.

Tetrahydrobiopterin (BH4) is an essential cofactor for tyrosine hydroxylase (TH), tryptophan hydroxylase, phenylalanine hydroxylase, and nitric-oxide synthase. These enzymes synthesize neurotransmitters, e.g., catecholamines, serotonin, and nitric oxide (NO). A growing body of research suggests that BH4 is involved in catecholaminergic, serotonergic, and NO systems therefore affecting monoamine synthesis. Hence, alterations in BH4 balance could result in neurological and neuropsychiatric imbalances such as those involved in the addiction spectrum disorders. Alteration of the TH protein level by modulation of the BH4 content is a novel regulatory mechanism for neurotransmitter balance.

NMDA Receptors and Addiction

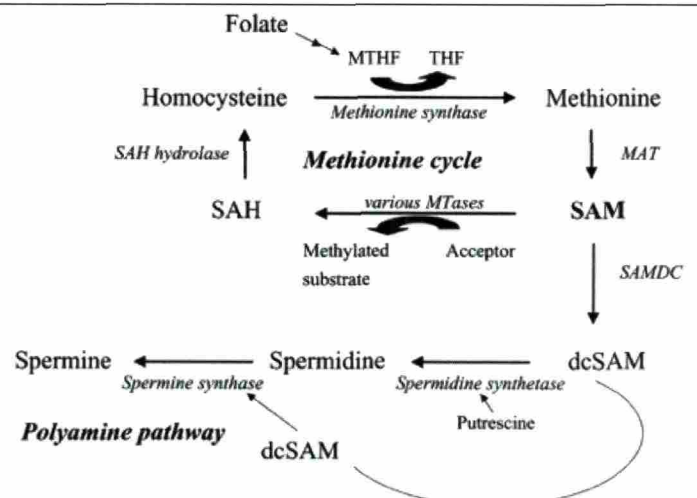
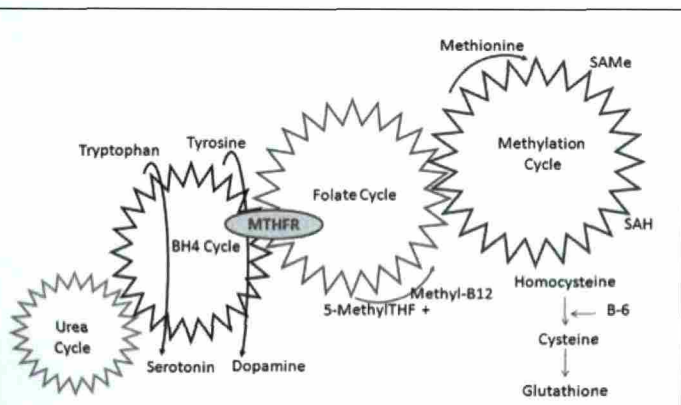
The role of the excitatory amino acid glutamate and its receptors, in particular the *N*-methyl-d-aspartate (NMDA) receptor subtype, can no longer be overlooked. NMDA receptors play an important role in drug addiction. Numerous research using animal models

of drug addiction have demonstrated that drug-induced craving is associated with a significant upregulation of NR2B subunit expression. Furthermore, selective blockade of NR2B-containing NMDA receptors in the striatum, especially in the nucleus accumbens (NAc), can inhibit drug cravings. Understanding the natural agent that regulates striatal NMDA receptors can provide fresh insights that will offer novel treatment options in drug addiction to counteract the deleterious effects of addiction on humankind. Natural agents known to calm NMDA include theanine, magnesium, and NAC.

Neuro-Steroids – The Missing Link in Addiction Therapy

Neuro-steroids or neuroactive steroids (NASs) are a family of steroid-based compounds that play a critical role in the brain's reward system.¹¹ Neuro-steroids impact the function of the central nervous system through modulation of the GABA (γ -aminobutyric acid) A receptor and the NMDA (*N*-methyl-d-aspartic acid) class of glutamate receptors.

There are two groups of families of neurosteroids: the **inhibitory** neurotransmitter receptor families of pregnane neurosteroids that include allopregnanolone and allotetrahydrodeoxycorticosterone, and the **excitatory** neurotransmitter receptor families of androstane neurosteroids, such as androstenediol and etiocholanone. Studies during the past two decades have uncovered that



Innovative Integrative Addiction Treatment

➤ progesterone and deoxycorticosterone serve as precursors for the endogenous neurosteroid allopregnanolone. Allopregnanolone modulates GABA-A.¹²

Neurosteroids increase both synaptic and tonic inhibition. The pregnane GABA-A receptor modulators play a major role in controlling addiction, craving, anxiety, and stress. The neuro-excitatory androstane neurosteroids are testosterone-derived androgens. They include androstenediol (5 α -androstane-3 α ,17 β -diol) and estradiol. Experimental and clinical evidence suggest an endogenous role for neurosteroids in various neurological and psychiatric conditions such as epilepsy, anxiety, and depression

Novel Treatment Directions

Addiction is not a simple condition. There is no single cause of addiction, and there is no quick fix or one treatment that can cure it. As with any chronic complex disease, long-term treatment is needed and must address all aspects of the disease. When patients are treated in this way, they have every chance of successfully managing their addiction. The multiple factors that cause addiction, the changes it causes to the brain, and the chronic nature of the disease all conspire to make addiction complex. Furthermore, because of the mere chronic and complex nature of this disease, treatment for addiction has to be novel, complex, and complete.

Brain Restoration Protocol

A complete treatment program includes medical care, lifestyle, nutritional, social support, individualization, and behavioral therapy. Medical care can treat underlying physical conditions, but integrative addiction treatment protocols should include safe detox, minimal cravings, and embrace a carefully crafted individualized plan that incorporates a balanced blend of the following:

- Amino acids,
- Vitamins,
- Essential fats,
- Minerals,
- Hormone support,
- Herbs and plant extracts, and
- Antioxidants/Anti-Inflammatories.

Not to mention the crucial role of social support from other recovering addicts, as well as from friends and family! Having a treatment plan that is tailored to the individual is necessary to maximize effectiveness. Finally, behavioral therapy helps patients learn how to be aware of and to change unwanted behaviors.

Because addiction is a complex disease, an intricately designed addiction training program was instituted. The Integrative Addiction Medicine Training (IAM Training) was crafted to enable physician and healthcare providers to gain theoretical knowledge and clinical skills. IAM

Training enhances the education of doctors to efficaciously treat addiction and meet this enormous demand. The program also allows healthcare providers to be aware of the need for and the delivery of various levels of management for patients with either straight forward or complex treatment needs.

References

1. McQuown SC, Wood MA. Epigenetic regulation in substance use disorders. *Curr Psychiatry Rep.* 2010;145-153.
2. Center for Behavioral Health Statistics and Quality. (2011). Results from the 2010 National Survey on Drug Use and Health: Summary of national findings (HHS Publication No. SMA 11-4658, NSDUH Series H-41). Rockville, MD: Substance Abuse and Mental Health Services Administration.
3. "World Drug Report 2012" (PDF). UNITED NATIONS. Retrieved 27 September 2016.
4. Kendler KS, et al. Recent advances in the genetic epidemiology and molecular genetics of substance use disorders. *Nat Neurosci.* 2012;15(2):181-9.
5. Jaenisch R, Bird A. Epigenetic regulation of gene expression: how the genome integrates intrinsic and environmental signals. *Nat Genet.* 2003;33(Suppl):245-54
6. Tsankova N, et al. Epigenetic regulation in psychiatric disorders. *Nat Rev Neurosci.* 2007;8(5):355-67.
7. Nestler EJ. Epigenetic mechanisms of drug addiction. *Neuropharmacology.* 2014;76(Pt B):259-68.
8. Wong CC, et al. Drugs and addiction: an introduction to epigenetics. *Addiction* (Abingdon, England). 2011;106(3):480-9
9. Kaminen-Ahola N, et al. Maternal ethanol consumption alters the epigenotype and the phenotype of offspring in a mouse model. *PLoS Genet.* 2010;6(1), e1000811
10. Harlaar N, Hutchison KE. Alcohol and the methylome: design and analysis considerations for research using human samples. *Drug Alcohol Depend.* 2013;133(2):305-16.
11. Akk G, et al. The influence of the membrane on neurosteroid actions at GABA-A receptors. *Psychoneuroendocrinology.* 2009;34(5):S59-S66
12. Barbaccia ML, et al. The effects of inhibitors of GABAergic transmission and stress on brain and plasma allopregnanolone concentrations. *British Journal of Pharmacology.* April 1997. ◆



Dalal Akoury, MD, is the founder of AWAREmed Health and Wellness Resource Center and the director of the Wellness U program. Dr. Akoury is board certified in anti-aging, functional, and regenerative medicine, as well as having accumulated more than 20 years of experience in emergency medicine and pediatrics, and a master's degree in public health. Dr. Akoury has also served fellowships in pediatric hematology/oncology and performed research in leukemia and the effects of smoking. This lifetime of experience, along with a unique sensitivity, genuine compassion, and driving passion to inspire health in everyone, has prepared "Dr. Dolly" to be in this place at this time. About developing her dream, AWAREmed and Wellness U, Dr. Akoury says, "My mission is to ignite the spark of health deep within everyone, and to allow this sparkle of wellness to shine through everyone's eyes, becoming one with the universe, and aligning body, mind, and spirit."

Cannabinoid Deficiency and Its Impact on Human Health and Disease, Part 2

by Jonn Desnoes, OMD, MD, PhD, and
Sandra Kischuk, MSMIS, MCPM

The full texts and references for both Part 1 and Part 2 are available online at www.townsendletter.com.

"Cannabinoid Deficiency and Its Impact on Human Health and Disease, Part 1" (*Townsend Letter*, July 2017) described how the botanical *Cannabis*, a plant long valued for its many medicinal and industrial uses, became illegal and the political and financial pressures against its use that continue to this day.

In Part 2 of this three-part article, Dr. Jonn Desnoes and Sandra Kischuk give a detailed overview of the many cannabinoid studies that led to new understandings about brain function and the effects of cannabis. Researchers discovered cannabinoid receptors in the brain as well as naturally-occurring endocannabinoids, made in the body from fatty acid precursors. The human brain has more cannabinoid receptors than any other type of neurotransmitter receptor. "Endocannabinoids and their receptors modulate a variety of physiological processes in the brain; movement, nociception (the nervous system's response to harmful or potentially harmful stimuli), brain

reward, learning and memory, feeding, and emesis (vomiting)," explain the authors. "Peripheral processes impacted include those involved in immune regulation, the cardiovascular system, the reproductive endocrine processes, and energetic metabolism control."

The human body makes its own endocannabinoids, given the right nutrients. Nutritional deficiencies and prolonged stress, however, disrupt endocannabinoid tone, which leads

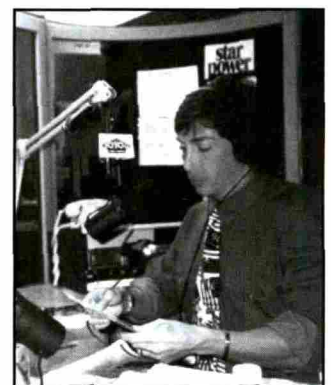
to detrimental effects on multiple physiological processes and on brain function. Prior to 1937, cannabis was legally used as a medicine, and the hemp plant provided livestock fodder for farm animals that supply meat, eggs, and dairy products.

This overview of the body's endocannabinoid system in Part 2 explains why cannabis has so many and such varied therapeutic effects. ♦

Sir Jonn Desnoes, OMD, MD, PhD, is a physician, board-certified homeopath, former nationally syndicated radio talk show host, writer, researcher, and medical missionary. He was knighted for his humanitarian work as a medical missionary.

Jonn became interested in the study of cannabis and its health-restoring properties when a friend gave him a bottle of CBD hemp oil. He had suffered with intractable back pain for years as a result of multiple sports injuries incurred over 30 years as an athlete. Within 20 minutes of taking the CBD oil, his excruciating pain stopped. He has found that, as long as he continues to take the oil, he is virtually pain-free.

Sandra Kischuk, BSBA, MSMIS, MCPM, is a writer, editor, life coach, Toastmaster, and master gardener. Author of *Fighting the Dragon: How I Beat Multiple Sclerosis*, Sandra's writing interests include fiction, non-fiction, poetry, scripts, and other people's résumés. She has written web content for physicians, informational/marketing literature for attorneys, and continuing education courses for dental professionals, and edited professional communications and doctoral theses on subjects as diverse as religion, education, engineering, and psychology.



Personality Development via the Elimination of Emotional Conflicts

by Dr. Andreas Müller

As an established general practitioner in Berlin, I have been using Psychosomatic Energetics (PSE) for many years now. A complementary medicine method which has by now gained broad acceptance, it was developed at the beginning of the 1990s by a naturopathically active colleague of mine, the general practitioner Reimar Banis. The method brings together therapies as diverse as psychotherapy, homeopathy and traditional far Eastern healing methods such as Indian yoga. Originally conceived as a kind of “psychotherapy with drops,” PSE is now finding use in many different medical specialty areas. According to PSE, hidden and unresolved emotional conflicts are the cause of energy blocks that contribute to diminished vigor and spirit, ill will and chronic disease. Once the energy blocks are eliminated, one often experiences from PSE an increase in vitality, *joie de vivre*, and activation of self-healing powers. What is particularly amazing is that, for some patients, PSE leads to clearly noticeable personality development, which is the subject of this report.

The Four PSE Character Types

PSE works with the categorization of four clearly differentiable character types, which are understood to be the various characteristic forms of human personality. Following the example of



Test situation for PSE: kinesiological arm-length test with the REBA Test Device to establish the values of the four energy levels; next to the device is the test kit containing the test ampoules to identify the current emotional conflict.

the ancient character types, we in PSE make use of the following classification (classical terms in parentheses):

- The independent type (Melancholic),
- The actor type (Sanguinic),
- The solicitous type (Choleric) and
- The orderly type (Phlegmatic).

When talking about character types, we should be aware that each of us has all parts of the four different types; but depending on how large the respective “slice of the pie” is, one type will be in the foreground to a greater or lesser degree. In most cases, it is a matter of mixed types. People can make use of a multiplicity of patterns, depending on the situation and internal makeup.

Knowing our character type and that of the person we’re dealing with can help us learn that person’s “foreign

language” and acquire ideas and insights from that language. PSE therapy consists in taking homeopathic compound remedies that were specially developed for the method – to get the blocked chakra flowing again (Chavita 1-7, corresponding to chakras 1-7), as well as dissolution of the emotional themes (Emvita 1-28) tested out with the aid of the REBA Test Device.

The Big Five Model

Personality (using a definition from Prof. Sass, 1987) designates the totality of an individual’s characteristics, which determine how they perceive the environment and communicate with it. Recent research shows that five dimensions are necessary for a discriminating personality description (Big Five, Lewis Goldberg, 1922iv). Goldberg’s complete Big Five is based on 300 short questions with 10 questions per facet. Cattell began to develop this model in the 1930s. The Big Five are five very stable, independent, and for the most part culturally constant factors. This model is used internationally as a standard. In this manner, behavior can be predicted on the basis of empirical evidence. The advantage of this model, to my mind, is that it deals with a scale that neutrally indicates the gradation of each respective dimension.

It has to do with the following factors:

1. *Emotional lability* says something about the strength and frequency of the stimuli necessary for one's feelings to make an impression.
2. *Extroversion* assesses the strength of the tendency to turn outward. Between the extremes is where those for whom it is easier to oscillate back and forth between coming out in social situations and the seclusion of working on one's own.
3. *Openness* to new experiences relates to mental flexibility, creativity and curiosity, as well as intellectual ambition.
4. *Agreeableness* relates to the spectrum between cooperation and competition. A person in the middle region functions as a negotiator who, depending on the current situation, oscillates between persistent pursuit of personal agendas and flexible compromise.
5. *Conscientiousness* has to do with how strongly obliged a person feels toward personal tasks and goals. In the middle region, a person is balanced out between focused attention and casualness, production, and research.

When the issue is personality development, I can ask myself the following:

- Have I become more honest, more understanding, more conversationally competent?
- Have I learned to listen and am I better able to sense what was meant beneath what was spoken, and to address it?
- Do I have more courage to speak up for myself and clearly express what I think, feel and want?

After this brief introduction, I would now like to present two patients as typical examples from clinical practice.

The first patient is Susanne, who at the time of the first appointment in March 2011 was 44 years old. She wears colorful clothing, has tinted hair, and waves her hands about while talking. She is an artist and also works 20 hours a week as a caretaker. She clearly exhibits many of the traits of a theatrical personality type. She lives with a friend and his two children in one house;

general practitioners could do nothing for her. She wakes up around 5 AM. She says she has an anxiety trauma from childhood, to which she has not yet been able to gain access. She reports being stressed at work. The symptoms appear particularly when getting up in the morning and when she gets some rest, she says.

In a PSE context, we look to see in which energy center – also known as a chakra – the person has an energy block at that time, and which emotional conflict theme shows up in the corresponding chakra. Here you can see the course of Susanne's treatment over three years with my accompaniment. The patient was tested about every three months.

After the first theme, "Rushed" in the throat chakra, the patient can once again get a full night's sleep. The fifth chakra stands for personal integrity and communication. She is more calm and collected, can make decisions, and is better able to act on her own behalf.

She says she is once again enjoying life and is more relaxed. While dealing with the theme "Mental Overexertion" in the heart chakra, the patient reports in October 2011 that she has more energy to devote to living together with others. She can sincerely let others be themselves and is able to stand up for her feelings; she is also now more trusting again.

In April 2012, the patient was free of her basic fear after the dissolution of the conflict "Perseverance" in the second chakra. The second chakra stands for stress management as well as for the development of courage and strength. She no longer clings to the relationship with her partner. After the "Emotional Rigidity" in the chakra was eliminated, the patient got a new job. She says that aggression goes away more quickly, that she can also paint pictures again. During the next round of conflict management, "Mental Overexertion" in the fourth chakra, she breaks up with her partner,

Fight Cancer

Learn from Serge Jurasunas, a world leading doctor in Integrative Oncology with 50 years of clinical experience.

Author of the new book:

Health and Disease Begin in the Colon

***Featuring Prof. Jurasunas' Natural Medicine* (Amazon).**

- Personalized protocol •
- Individual diet and nutrition program •
- Molecular markers testing •
- Updated information and papers on cancer •
- Innovative European cancer treatment •
- Clinical cases available •
- Frequent Townsend Letter contributor •
- Consultation by phone, email, Skype •

Email: sergejurasuns@hotmail.com

Skype: Serge Jurasunas

Phone: 351 912565038

www.sergejurasunas.com

New Blog: <https://naturopathiconcology.blogstop.com>

Presentations and Documents are available to view or download
on Slideshare: www.slideshare.net/SheldonStein

Personality Development

which is felt to be a positive thing: she had always felt underappreciated by him. She says that it is now clear to her what she wants. The heart chakra stands for all-encompassing love as well as trust.

In addition, we take a look at the energy values with PSE. During the course of therapy, we therapists are particularly interested in the somatic level (the so-called Vital value) as well as the emotional level (the Emotional value). On a scale of 0-100, one can then assess how physically fit, or resilient, the patient is, as well as how good or elevated the mood is. The patient feels markedly more stable and content. Susanne has rediscovered her creativity, has split up with her partner and has a new job.

With reference to the Big Five, a development has taken place in the following dimensions: (1) emotional lability: the patient feels much more stable and contented; (2) openness to experience: Susanne has rediscovered her creativity, split up with her partner, and has a new job.

The next patient that I'd like to present is René. At the time of the first appointment in February 2014, he was 52 years old. He is "afraid of fear itself." For 40 years, he has been afraid of his father, who abused him psychologically and physically. Because of his fears, he is looked after, cared for, and receives help coping with daily life. He says that after sleeping is like before sleeping (i.e. not rested). He complains of a constant state of overtiredness for 1½ -2 years. He says he feels like he has no influence on anything. He shows up in ironed, beige-colored cloth trousers; his shirt is buttoned all the way up, over which he is wearing a knitted sweater. He

exhibits many of the characteristics of a neatness/control obsessive. His body hardly moves as he speaks, remaining frozen in position. Only in his face, over and over, does he twitch his eyes and flare his nostrils. He seems very tense. He says that he struggles to protect himself and his person, since no one else will do it; he cannot allow himself to fall. He reports having a lot of rage. One female therapist broke off therapy because she was afraid of him.

In September 2014, after dissolution of the theme "Withdrawn" in the heart chakra, René reports that he more frequently uses public transit again, which he had previously been very fearful of. Moreover, after two years he is again riding a bicycle. After the conflict "Exploding" in the upper-abdominal chakra, the patient seems considerably more relaxed, even during testing. He says that it's pleasant, in the sense of positive feelings that well up inside him, something that he had lost long ago.

Dealing with the theme "Show of Strength" helped him to shake off his fear of his father. The second chakra in the lower abdomen has jurisdiction over stress management. After some months, he's once again able to do his own laundry. In March 2015, the patient seems much livelier, more able to "swing it." He previously had the conflict "Emotional Rigidity" in the fifth chakra. He says that for six weeks now he's been able to walk all the time, is more relaxed, and can not only better take things as they come, but also understand the topic. He says he has no more panic attacks; that he goes without medication for months; that he can again cope with the little things; that he has found a piece of normalcy; that falling is possible; that he experiences phases

of lightheartedness as well as positive feelings that he had forgotten; that he can accept and understand things. René's quarrelsomeness has abated. He has become more empathetic. The patient became more stable, was no longer so moody. He says that he's become braver, has rediscovered part of his strength, and has become more honest and genuine.

For the following factors of the Big Five Model, there were the following developments:

1. Tolerance: René is less belligerent, more sympathetic.
2. Emotional lability: the patient is more stable, less moody.
3. Openness to experiences: he is braver, has rediscovered some of his strength and is now more genuine.

Summary

My closing summary as a general practitioner is, all in all, very positive. Based on the personality development of most patients, the effect of PSE therapy is quite perceptible and is registered by them as being quite positive. Somatic complaints are also better coped with. PSE is thus a holistically-acting psychic maturation process, a gently yet lastingly stimulating form of therapy that makes many patients more independent and self-assured. It is easy to perform and, because of its nonverbal therapeutic approach, is also very effective in cases of so-called difficult patients with multiple somatic-psychological complaints and psychosocial problems.

Bibliography

- Banis, Reimar. *Lehrbuch Psychosomatische Energetik* [A Manual of Psychosomatic Energetics] Hardcover edition. Karl F. Haug; Edition: 1 (22. October 2014). ISBN-13: 978-3830478645
- Cattell, R. B. (1949). "Consistency of the factorial structures of personality ratings from different sources". *Journal of Abnormal and Social Psychology*, 44, 329-344
- Charaktertypen. <https://de.wikipedia.org/wiki/Charaktertypen>
- Fehr, Theo. "Big Five: Die fünf grundlegenden Dimensionen der Persönlichkeit und ihre dreiBig Facetten" [Big Five: The Five Fundamental Dimensions of Personality and Its Thirty Facets]. *Persönlichkeitsmodelle & Persönlichkeitstests* [Personality Models and Personality Tests], GABAL 2006
- Goldberg, L. R. (1990). "An alternative „description of personality": The Big-Five factor structure". *Journal of Personality and Social Psychology*, 59, 1216-1229
- Meves, Christa. *Charaktertypen. Wer passt zu wem?* [Character Types – Who is Right for Whom?] - Media Maria Verlag ISBN-13: 978-3981300338
- Riemann, Fritz. *Grundformen der Angst* [Basic Types of Fear] Verlag Ernst Reinhardt ISBN 3-497-00749-8
- Schulz von Thun, Friedemann. *Miteinander reden 2: Stile, Werte und Persönlichkeitsentwicklung: Differentielle Psychologie der Kommunikation*. [Talking with Each Other 2: Styles, Values and Personality Development: Differential Psychology of Communication] Rowohlt Taschenbuch Verlag; Edition: 32. (March 2010). ISBN13: 978-3499184963



Dr. Andreas Müller is a general practitioner with additional certification in naturopathy, acupuncture and homeopathy. He has been using Psychosomatic Energetics since 2008, and been a speaker and adviser in this method since 2015. His practice, where he emphasizes biological medicine and holistic therapy, is in Prenzlauerberg (Berlin).

Contact: Wichertstrasse 10, 10439 Berlin, Germany

Still the Best

A Must Have for Kidney Function Support!



CORDIMMUNE™

The only cordyceps product that is standardized for and declares its cordycepin content

- Supports mitochondrial function and ATP production
- Modulates immune system
- Enhances athletic performance safely
- An excellent adaptogen and adrenal support
- Supports hematopoiesis
- 0.2% Cordycepin (worth over \$100 per bottle)
- 0.3% Adenosine • 22% Polysaccharides

Immune Support Beyond Just Polysaccharides!

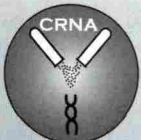


CORIO PSP™

The most clinically researched mushroom in Japan and China

- Unmatched 38% polysaccharides
- Lessens the side effects of toxic treatments
- Raises the quality of life
- Raises the activities of NK cells and macrophages
- Increases thymus weight

The statements herein have not been evaluated by the FDA. This product is not intended to diagnose, treat, or prevent any disease.



CANADA RNA BIOCHEMICAL INC.
Tel: (604) 273-2233 • www.canadaRNA.com

1-866-287-4986

Your Brain on Excess Insulin

review by Katherine Duff

The Alzheimer's Antidote: Using a Low-Carb, High-Fat Diet to Fight Alzheimer's Disease, Memory Loss, and Cognitive Decline

by Amy Berger, MS, CNS, NTP

Chelsea Green Publishing; <http://www.chelseagreen.com>.

©2017; Softbound; 325 pp.; \$29.95

What exactly is meant when Alzheimer's disease is referred to as Type 3 diabetes? Amy Berger answers this question in her book *The Alzheimer's Antidote* where she has synthesized what we know about Alzheimer's disease (AD) to lead us closer to the cause: a fuel shortage in the brain. How and why this occurs is explained in the book, with dietary and lifestyle changes to counteract the process.

Metabolic syndrome is a known risk factor for AD. Insulin resistance is a factor in both and causes higher blood levels of insulin (hyperinsulinemia). Glucose is the brain's primary source of fuel. A marker for Alzheimer's disease is a reduction in the rate of glucose metabolized by the brain. In some, the reduction has been found to be 45 percent and is always localized to areas of the brain involved with learning and memory. As the brain cells become less able to metabolize glucose for fuel, they starve. Berger notes that some researchers have found this to be the predominant abnormality in AD.

Ketones are another source of fuel for the brain but are only produced when insulin levels are low, such as when a person is on a low carbohydrate diet or fasting. Research has found that the brains of people with AD are capable of taking up ketones and will benefit cognitively. This super-fuel will not be used, though, by a brain that is flooded with glucose.

Another marker is the presence of the amyloid-beta ($A\beta$) plaques found in the brains of people with AD. These plaques occur in everyone but are cleared away routinely. In the case of AD patients, the plaques are not cleared and continue to grow and solidify, interrupting communication between cells. The process for clearing the plaques is the work of an insulin degrading enzyme. The targets for this enzyme are first insulin and then the plaques, so excess insulin occupies the enzyme, which then allows the plaques to build up.

Beyond these and other metabolic processes affected by excess glucose and insulin, the author explains the benefits of higher fat intake, especially the omega 3s and 6s in proper ratio, and medium-chain fatty acids as found in coconut oil. A fat-like substance, whose levels we can monitor in blood tests is cholesterol. Berger's enlightening discussion of the role of cholesterol in proper functioning of the brain will definitely encourage the reader to rethink that low cholesterol diet.

We have been taught that cholesterol found in plaques in the arteries is a result of too much cholesterol in the diet, when in fact the cholesterol is a repair material for vessels damaged by hyperinsulinemia and other conditions. Trauma, infections,

"The research is unambiguous: AD results primarily from a failure of parts of the brain to harness sufficient energy from glucose."

and low thyroid, among others will cause levels to rise. Simply put, we need cholesterol. Cholesterol is a component of cell membranes and mitochondria. In the brain, it is used to form the myelin sheath that protects neurons. Cholesterol is required by the body to produce choline, which is used to make acetylcholine, a neurotransmitter involved in memory and learning. Coenzyme Q10 is involved in the production of energy in the mitochondria and is formed by the synthesis of cholesterol. In light of this information, Berger makes clear the damage being done by the push for lower cholesterol diets and routine prescribing of statin drugs.

Berger also includes a discussion of the so-called Alzheimer's gene ApoE4. Cholesterol is vital for healthy brain function, which uses about 25 percent of the body's cholesterol. The apolipoprotein E genes (ApoE), among thousands of other tasks, provide the molecules that allow non-water-soluble substances to travel the blood stream. This is how cholesterol is delivered to the brain. Along the way these molecules will suffer damage from encounters with substances such as excess insulin. Of the ApoE genes, the ApoE4 appears to be the most susceptible to this damage. A person having the ApoE4 gene will not necessarily develop AD, but it is a risk factor. To reduce that risk, the author suggests the low carbohydrate/high fat diet described in the book.

A good portion of the book is dedicated to the diet that can improve brain function of those with AD. The goal is to shift the body's energy source away from carbohydrates to fats. Gone are the prohibitions against animal proteins and fats, in fact their consumption is encouraged. Glycemic control is of upmost importance so, for example, foods such as beans, which have long served as alternatives to animal proteins in other diets, are discouraged for their carbohydrate content.

Another goal of this diet is to utilize ketones for energy. Not to be confused with diabetic ketosis, nutritional ketosis occurs when the blood glucose levels are low. One advantage of this is that the lower insulin levels in the blood will allow the insulin degrading enzyme to clear away the $A\beta$ plaques in the brain. For those having difficulty lowering their glucose levels, the author recommends medium-chain fatty acids such as coconut oil and palm kernel oil to be included in the diet. It is even possible to order ketone supplements.

Lifestyle choices can also affect cognitive function. The importance of exercise, adequate sleep, nutritional supplements, and stress reduction are also discussed. Berger states that the use of low carbohydrate, ketogenic diet therapy research is still in its infancy, and there are no guarantees this approach will work for everyone. She suggests giving the diet and lifestyle changes three months before deciding whether or not there has been improvement.

The information in this book is pointing us in a new direction, which is away from the standard American diet and nutrition advice that has likely exacerbated the development of many diseases including AD. In the Foreword to this book, David Perlmutter, MD, states what is at the root when he says

that our food choices interact with our genes for better or worse. Food as instructions to our DNA is something we have some control over, and Berger has well described how and why we should make smarter choices.

This well-referenced book has a wealth of information that informs us of the damage to our brains caused by excess carbohydrate intake, which is so common in diets now. Many of the physical processes described are complex, but the author has used metaphors to assist the lay person so that the book is accessible to everyone. Whether the problem is AD or other forms of memory loss and cognitive decline, this book could be a real game-changer. ♦

Food Contamination and How FDA Fails Us

review by Dr. Earl Mindell, RPh, MH, PhD

Unsafe at Any Meal: What the FDA Does Not Want You to Know About the Foods You Eat

by Dr. Renee Joy Dufault. Square One Publishers; <http://squareonepublishers.com>.

©2017; \$16.95 USD; softbound; 240 pages; ISBN 978-0-7570-0436-0

Thirty years ago, I authored a book with the same title as this new one. In it, I described the many unhealthy additives that were being added to our foods and beverages at that time. Needless to say, many of the trade associations for food manufacturers did everything they could to refute and marginalize the facts that I had presented. The recent publication of Dr. Dufault's *Unsafe at Any Meal* shows an even greater problem stemming from the production of today's processed foods.

As an investigator for the FDA, Dr. Dufault was tasked with the job of making sure that the processing plants she visited throughout the US produced food products whose chemical content levels were within the safety guidelines issued by her agency. What she discovered was unnerving. As the chemical analyses came back from the testing labs, all the foods she had studied showed unsafe levels of mercury, arsenic, lead, and various other dangerous chemicals – according to FDA standards. Most disturbing was that they were the very contaminants shown as having a negative impact on gene regulation and function, as well as contributing to many devastating health disorders, such as Alzheimer's, autism, diabetes, and more.

To her amazement, upon providing these alarming findings to her superiors at the FDA, Dufault was ordered to stop her investigations. She was further informed that her report would not be made public. After taking an early retirement in January

2008, Dr. Dufault founded a non-profit organization composed of researchers who continue to study the very contaminants she first uncovered in foods and publish their findings in peer-reviewed journals. Her book, however, is designed specifically for the public. Written in clear and understandable language, *Unsafe at Any Meal* begins by telling Dr. Dufault's story. It then describes all of the heavy metals and toxic chemicals found in our present food supply and how each can impact our health. Just as important, it offers practical suggestions on how to avoid these foods in our daily diet. Unfortunately, the level of FDA-approved contaminants in much of our food has increased since my own book came out. I hope that, as healthcare professionals, you will grasp the opportunity to read this groundbreaking book, which may hold the answers to why we remain in the midst of such a devastating national health crisis. ♦

“Most of your patients are taking a synthetic multi, shouldn't they get a Food Vitamin-Mineral from you?”

Nutrition from food, what a concept! Yet, most of your patients are taking a multiple vitamin/mineral formula. Even though the label may say "natural" all over it, the fact is that most formulas are composed of synthetic USP isolates and processed industrial rocks known as mineral salts—these are not natural foods for humans. At Doctors' Research Inc., we distribute 100% Food Research products. 100% food nutrients, 100% of the time.

To assist you and your patients in determining if their supplements are actually food or something else, we have a FREE report that you can have titled *STOP Eating Industrial Chemicals? Food vs. Industrial Chemicals in Supplements* which lists various chemical forms and where they come from.

www.DoctorsResearch.com
1036 W. Grand Ave. • Grover Beach, CA 93433

Doctor, Are You Looking for a Supplement Company that:

- Only Uses 100% Food Vitamins and Food Minerals?
- Supplies no USP Vitamins or Inorganic Mineral Salts?
- Uses Wild, Goat, or New Zealand Glandulars in its Non-Vegetarian Products?
- Uses Vegetable Capsules for its Non-tableted Products?
- Does Not Use Binders or Non-food Fillers?
- Will Not Use anything Porcine?
- Has products produced in a Kosher/Halal certified facility?

**There really is only one such
supplement company,
DOCTORS' RESEARCH, INC.**

For a FREE GUIDE on Food vs. Industrial Chemicals,
FREE Product Bulletins, and more
Please Call 1-805-489-7185.

Gaby's Textbook on Nutritional Medicine

review by Jacob Schor, ND, FABNO

Nutritional Medicine (Second Edition)

by Alan Gaby, MD

2017; 1456 pp; Available at <https://doctorgaby.com/the-book/>

This is a review of the second edition of Alan Gaby's book *Nutritional Medicine*. It was tempting to write Alan Gaby's "Life Work," as this book embodies pretty much everything he's ever given much thought to, well, except his music.

We should begin with a conflict of interest statement. I hold Dr Gaby in the highest respect. I admire and emulate his writing style. I believe that as a profession we are in his debt. I am honored that the *Townsend Letter* is even allowing me the opportunity to review this book. Thus, it may be difficult to be a critical reviewer. Yet, being critical comes easy for some people and this may not be the first time that I say unflattering things about a friend.

Let me also begin by admitting that I have not read the book in its entirety. No one, aside from the author probably ever will. There are 1420 pages printed in small font. Think of *War and Peace* without a hint of plot. Instead the book is divided into 26 sections. The first several chapters cover nutritional medicine from Gaby's perspective, then review a long list of therapeutic agents including individual sections on vitamins, mineral, amino acids, and chemical agents such as acetyl-carnitine to S-Adenosylmethionine (SAME) that don't fit into those first three categories. These are followed by twenty-one chapters divided by disease name or -ology's: cardiovascular disease, pulmonary disease, gastroenterology, liver diseases, neurology, rheumatology, musculoskeletal, dermatology, renal disease, urology, gynecology, obstetrics, pediatrics, ophthalmology, oral diseases, otolaryngology, psychiatry, endocrine diseases, hematology, infectious disease, genetic diseases, and miscellaneous conditions. Chapters follow on various particular modalities and drug nutrient interactions.

Each chapter is subdivided into essays on specific diseases. For example, the chapter on endocrine disorders has articles on diabetes mellitus, diabetic neuropathy, Grave's disease, Hashimoto's thyroiditis, and hypoadrenalism. In total, over 400 separate medical conditions are covered.

I never finished reading *War and Peace* for book group so never expect to get all the way Gaby's book either. What I've done instead is to read some sections at random and some sections as patients come in with specific conditions and a few sections that I thought I knew a lot about already, and a few sections I knew little to nothing about. In every case, our good Dr. Gaby has had something useful to teach me. There's no surprise in that. For long time readers of the *Townsend Letter*,

we all feel like we know Gaby well and are not startled by his insights and occasional moments of brilliance. The book is without a doubt useful to own. All this is not to say that the book is easy to use, even if it is well organized and indexed.

Logistically the book is a nightmare. I balanced my copy on a kitchen scale. It weighs in at 3.555 kilograms. That's seven pounds, 13.4 ounces. This isn't a book that you carry between office and home. (Sure, Alan, I know that's a reason to get two copies). It's not a book to read in bed at night or even to read with it open on your lap. You need to rest it on something solid, like a desk or table. My copy has its own seat at the dining room table. You don't lift it casually from the bookshelf. When you pick it up an inner voice says, "bend your knees." You need to create a dedicated spot in your office for it to sit, where you can read it as needed without moving it. To kind of paraphrase that line about Mohammed and the mountain, in this case the mountain stays put and you go to it. This is doable and well worth the effort. I've got a spot picked out on top of a two-drawer filing cabinet in my office where eventually my copy will sit. My idea is to read it as needed for specific patients. Just the other day Alan informed me through the text that l-glutamine was contraindicated in Crohn's disease. I hadn't known. Having the book is like having an extended private tutorial with Alan Gaby in nutritional medicine. To me this feels like a great privilege.

Reading Gaby is something of a déjà vu experience. It all feels just so familiar, probably because I have tended to read pretty much everything Alan Gaby writes more than once. In the old days, I kept hanging folders in a filing cabinet dedicated to Gaby articles. He's been a monthly contributor to the *Townsend Letter* nearly forever. His style is distinct in its clarity, objectivity, and concise information.

To quote Bill Manahan from the book's forward, "When I think of precise science, evidence-based research, impeccable references, and a knack for speaking the truth, I think of Alan Gaby, M.D." A sentiment that we all feel. Dr Gaby has overset the standard in our profession for utilizing evidence-based science to inform our clinical protocols. (Perhaps more than anyone else I can think of, but that will be too inflammatory a statement to print) This Gaby edition contains over 16,000 references, by the way, in case you are counting.

Way back in 1983, Dr. Gaby partnered with Jonathan Wright, MD, and together they started giving what became regular

and well thought of seminars called “Nutritional Therapy in Medical Practice.” Their presentations stood out at the time because they used citations from the scientific literature to justify their protocols. Some of our younger colleagues won’t recall but, at that time, there were no shortage of seminars on alternative medicine that justified protocols based on muscle testing, pendulum swings, or simply channeled discourse. The Gaby Wright seminar was rather unique.

To quote Dr. Wright, for their first seminar, “... our book of citations to the scientific literature was slightly less than 80 pages, and included nearly every research article we could find. Our 2011 seminar book of citations was 360 pages, and lack of space forced us to exclude many more citations than were included.”

It’s been six years since the first edition of *Nutritional Medicine* was published. There have been some changes in the science over that time. New studies of clinical relevance are incorporated into the text as they are published. For example, the use of niacinamide to prevent development of skin cancer, the eradication of *Helicobacter pylori* to prevent stomach ulcers, and the use of Co-Q10 to reduce mortality in congestive heart failure patients. The second edition contains 1,700 new references. In comparing the second with the first edition, about 10% is new material and 90% was retained from the first edition.

Dr. Gaby is old school, literally; he attended medical school in the late 1970s, a time when there was no worldwide web and if you wanted to read the literature, you simply did so in the medical school library.

As Jonathan Wright explained in that first seminar, “In the early 1980s, well prior to online research libraries, he spent 30 hours a week for more than two years going through the entire table of contents of 50 major medical journals back to 1920, and about 200 other journals back to their beginnings. He photocopied, categorized, and we jointly filed every important research article concerning diet, vitamins, minerals, amino acids, essential fatty acids, and other important natural substances ever published in these journals.” This second edition is nothing more but a continuation of this work.

Somewhere, Gaby’s distinguished education should be alluded to; the undergraduate degree at Yale in political science, the Masters in biochemistry from Emory, and medical school at University of Maryland.

I first met Dr Gaby when he spoke in Tempe, Arizona, at a conference of the American Association of Naturopathic Physicians, perhaps in 1992. Gaby lectured on among other things, using Armour Thyroid. Actually, I should say he sang the praises of Armour as he pulled out a guitar partway through the lecture. As a result (of his pragmatic presentation, not his singing), we began using thyroid in our practice and did so for the next several decades and only stopped after receiving

letters from the State questioning our legal ability to do so and hinting at various legal implications if we continued to be in violation of certain statutes.

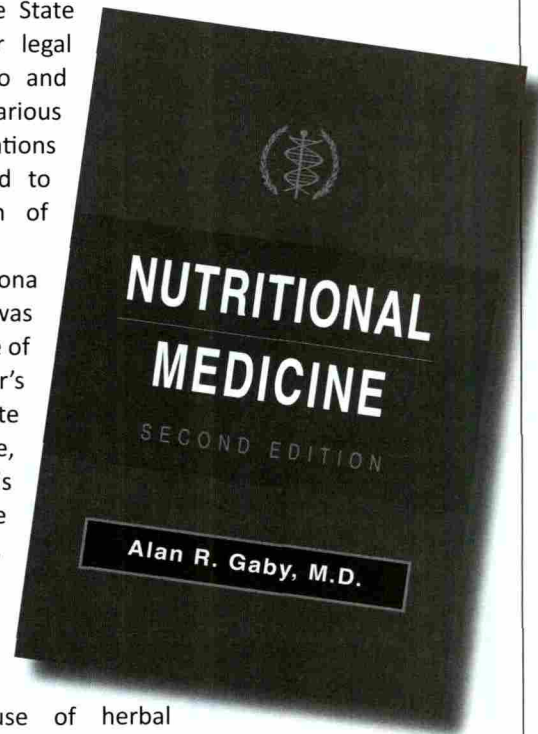
That Arizona conference was notable because of another speaker’s lecture. The late Wade Boyle, ND, gave his famous lecture on liver herbs, the lecture in which he differentiated between the

naturopathic use of herbal medicine and what at the time we disdainfully referred to as green allopathy, the way MDs tend to prescribe herbs. In naturopathic medicine, according to Dr. Boyle, we use herbs to tonify the targeted system and to invoke the natural healing force of the body. In contrast, medical doctors at the time were jumping to use herbs but in the same way they use drugs, to control physiologic function. Back in those days, we naturopathic doctors thought these distinctions were paramount. I recall thinking that Alan Gaby, as entertaining a speaker as he was, still fit into that green allopath category, though he was using vitamins as drugs rather than herbs. After all he was a MD, so we cut him some slack.

A quarter century later, that thought is still there. Alan Gaby is a medical doctor who has for his entire career practiced alternative medicine; he has not done what he was taught in medical school. He has substituted other things; vitamins, amino acids, and a few other supplements for drugs. He may be my favorite medical doctor, or one of my favorite medical doctors; yet the bottom line is that he can’t escape his training; he is forever going to be a medical doctor and can’t stop thinking like one. Thus, some might critique this book as a green allopathy cookbook.

Our philosophical approach to disease was once a big thing in naturopathic medicine. Do people still care? With the AANP lobbying in Washington to support compounding pharmacies and our practices focused on intravenous therapies, are we still the ‘drugless physicians’ we once took such pride in being?

When it comes to figuring out how to help a sick patient, these debates carry little weight. Information is useful. I read



the *Merck Manual* like a bible in preparation to seeing a patient with a condition I am unfamiliar with. I now pair Merck with Gaby so I can see both medical approaches to treating the disease.

While Gaby's book contains a wide range of information, mention should be made of what is missing. This is perhaps best explained by explaining exactly what Gaby means by his term 'nutritional medicine'. He writes, "In 1973, shortly after graduating from college, I became interested in the possibility that dietary modifications, nutritional supplements and other "natural" remedies could be used as the basis for an approach to medical care that would be safer, less expensive and sometimes more effective than the usual drugs-and-surgery approach." He credits Linus Pauling, Roger Williams, Abram Hoffer, and Adele Davis for starting him on this path.

Their approach at the time was revolutionary. The original focus of nutritional science had been to identify diseases caused by deficiency in necessary nutrients and correcting the illness through physiologic doses of the lacked nutrient. This new school of nutrition that Gaby followed used supra-physiologic doses of nutrient, not necessarily to correct deficiency but to steer body function. For a period, this was called "Orthomolecular Medicine." As a result, Gaby's book is not at all about correcting deficiency disease. There is no index listing for beriberi, pellagra, rickets, or scurvy.

Herbal medicine or even the concentrated botanical extracts that many of us consider to be almost drugs are only occasionally mentioned. Ginkgo and ginger are covered but milk thistle isn't. Curcumin is mentioned only three times: for treating familial adenomatous polyps, proctitis, and ulcerative colitis and that's it.

Homeopathy, well, if you know Dr. Gaby you would laugh to think that I even checked the index; of course, there is no listing for homeopathy. Suffice to say Gaby practices with a narrow pharmacy. Be that as it may, he does a good job with what he has.

In preparation for a patient visit the other morning, I attempted to read up on prostate cancer. It is not in the index. Nor for that matter was breast cancer, or any specific cancer. Cancer receives only minor attention in the book, less than two dozen pages hidden away in the chapter "Miscellaneous Conditions." Cancer follows the section on burns. Though brief, the cancer section does review the data related to nutritional supplements in an excellent manner, reviewing the research in a concise even-handed manner. Still, the cancer information feels scant and the list of supplements covered feels out of date. No mention of melatonin, berberine, or caloric restriction; in fact, there is no listing of caloric restriction or fasting in the entire index.

Something else missing that our younger colleagues might find surprising is an in-depth discussion of MTHFR polymorphisms. The only mention I've come across is under the forms of folate available as supplements. Granted that some doctors may think the clinical fascination with all things MTHFR is a passing fad, but whether it is or not, one would think it deserves more attention, at least as much as frostbite, which does have a section.

In contrast to the scant coverage of MTHFR, Gaby devotes what seems to be an inordinate amount of space and attention to candidiasis, the "fungal (yeast) infection caused by *Candida albicans* or other *Candida species*." A full section under the "Fundamentals of Nutritional Medicine" is devoted to Candidiasis Related Complex, and it is mentioned as a contributing or causative factor in the discussion sections of nearly two dozen different diseases and conditions, including anemia, chronic fatigue, Hashimoto's, multiple sclerosis, premenstrual syndrome, schizophrenia, and systemic lupus. At one point in time, the alternative medical consensus was that *Candida* caused almost all illness.

Thus, in a way we should view *Nutritional Medicine* in part as an historical record of the practice of alternative medicine over the past four decades as it is a record of the subjects that have attracted Dr. Gaby's clinical and intellectual interest. We should see Dr. Gaby's treatise as his own attempt to chronicle what he has learned during his decades of practice, the sum accumulation of knowledge and experience. This book isn't a textbook produced by a team of editors who have created a comprehensive encyclopedia on all related subjects. This is Gaby pure and simple, a medical doctor who came of age in the 1970s and who has always been a stickler for evidence-based medicine, even before it came into fashion among alternative practitioners. It is Gaby reviewing and summarizing the science on the conditions we have commonly seen, diagnosed, and treated in practice.

Hypoglycemia also receives focused attention, both its own section and frequent mention in the text under conditions such as arthritis, restless leg syndrome, and various types of headache. Is it that diseases become less common over time or do diagnoses fall out of fashion? I can't recall the last time I felt a patient needed treatment for hypoglycemia.

In the end, Gaby has created an opportunity to learn what he has learned in his career, to hear him at his best and clearest explain the basic knowledge one needs to practice nutritional medicine. In a way, it is like having Gaby as a private tutor, like precepting with him in practice, like being able to say, "Dr. Gaby, could you explain this to me?" What could be more valuable to any practitioner? ♦

Foreword to *Nutrition and the Autonomic Nervous System* by Nicholas J. Gonzalez, MD

by Linda L. Isaacs, MD

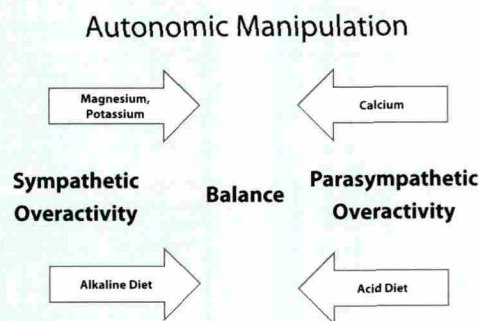
The author of this book, Dr. Nicholas Gonzalez, and I were professional colleagues for more than twenty-five years. During our long working relationship, I was always one of the first to read Nick's drafts, after he had done numerous rewrites himself. Reading this manuscript brought back memories of the first time I reviewed it, many years ago. Nick had not completed this work; he started it in the early 2000s but put it aside as other issues took priority.

Nick and I met when I was in medical school. He was the intern and I was the third-year medical student on an internal medicine team at Vanderbilt University Medical Center. He was already engaged in his study of the work of William Donald Kelley, DDS, the brilliant and eccentric orthodontist who had developed a nutritional method for treating cancer and other illnesses, using individualized protocols involving diet, nutritional supplements, and detoxification routines. Dr. Kelley believed that regulation of the autonomic nervous system explained how his methods worked.

The autonomic nervous system is in charge of the functions of our bodies that we do not consciously direct, such as digestion or heart rate. The autonomic system has two parts, the sympathetic and parasympathetic nervous systems, with different and frequently opposing actions. The sympathetic nervous system, the "fight-flight-freeze" system, is in charge of the stress response. Among other activities, it raises heart rate and blood pressure and slows digestion so that the body's resources can go toward dealing with immediate threats. The parasympathetic system is in charge of the "rest-digest" functions. It stimulates the digestive tract and all its accessory organs such as the pancreas, but it slows the heart and drops the blood pressure. In normal physiology, these two systems take turns depending on the need of the hour, the sympathetic system being active in times of stress and the parasympathetic system being dominant when repair is needed.

While all this is well known to any first- or second-year medical student, by the time most of us graduate and move on to our clinical work, we do not consider the functions of the autonomic nervous system on a day-to-day basis. But in Dr. Kelley's work, and subsequently in Nick's practice and my own, the autonomic nervous system is the core of the recommendations we make. As described in this book, Dr. Kelley empirically found that some patients did well on an alkalinizing, plant-based diet, with supplementation of magnesium and potassium, while other patients prospered on an acid-forming diet, high in protein and fat, with calcium supplementation. He then found in the work of Francis Pottenger, Sr., MD, the theoretical explanation for why this could be so.

Dr. Pottenger, in his book *Symptoms of Visceral Disease*, described how disease could be caused by autonomic imbalance.¹ Dr. Pottenger theorized that in some individuals, either the sympathetic or parasympathetic system was overly active, bringing about disease states that could be ameliorated if the overactive system was toned down. He found that the administration of magnesium would suppress the sympathetic system, potassium stimulated the parasympathetic system, and calcium stimulated the sympathetic system. Dr. Kelley, recognizing the same pattern that he himself had noted, realized that Dr. Pottenger's findings about autonomic physiology explained his own clinical observations. Dr. Kelley then synthesized all of this into the treatment program he utilized, stipulating that, based on the balance between the activity of the two halves of the autonomic nervous system, different types of people might have different dietary needs, respond differently to nutritional supplements, and even have different "normal" parameters for various blood tests.



At the time Nick met Dr. Kelley in 1981, Kelley had already put these premises together. During the next six years, as Nick reviewed Dr. Kelley's charts for the research project that would eventually be published as the book *One Man Alone*,² Nick was filled with questions for Dr. Kelley about how this theoretical model of autonomic balance worked in practice. He had questions not only about Kelley's patient files, but also about patients he was seeing in his orthodox medical training, for, during this same time period, Nick completed his third and fourth year of medical school, his medical internship, and an immunology fellowship.

Early in our relationship, Nick told me that one of the best things about these principles of autonomic imbalance was that they helped make sense of many of the bits and pieces that would float past in the medical and nutritional literature. As an example, researchers have found that breast cancer patients

► prescribed beta-blockers for reasons other than breast cancer, such as hypertension or heart disease do better than patients who were not prescribed this medication.³ In Kelley's model, breast cancer patients have an overactive sympathetic nervous system, and beta-blockers specifically block the beta-adrenergic receptor of the sympathetic nervous system, helping bring these patients' metabolisms closer to balance.

In another study, administration of calcium supplements slightly raised the risk of heart attacks.⁴ Later analyses, pooling the results of many studies, suggested that there was no such increased risk.⁵ Calcium, as a stimulator of the sympathetic nervous system, could well be an instigator of heart attacks if given in large doses to patients whose sympathetic nervous systems are already too active. In the Kelley model, patients with overactive parasympathetic nervous systems need and thrive on high doses of calcium supplements, while patients with overactive sympathetic systems need very little. The patients in the study showing increased risk might well have been made up mostly of those with overactive sympathetic systems. Larger analyses, pooling data from many studies with patients of a variety of metabolic types, would show no risk.

In contrast to Kelley, Nick, and myself, others in the integrative nutritional world state that everyone should be on the same diet, which might be anywhere from vegan to low-carb—usually the diet that the prescribing practitioners feel best eating for themselves. With our methods, I will find myself recommending for some patients a diet with less animal protein than works for me, and for others a diet with much, much more. Two of my patients, who were included in our article in *Alternative Therapies in Health and Medicine*,⁶ illustrate this point. One, with pancreatic cancer, was told to eat a near-vegetarian diet; the other, with lymphoma, was told to eat large amounts of animal protein. Both patients are alive and well today, nearly ten years since the publication of this article. Each continues to eat the prescribed diet with relish. The vast majority of the time, patients feel well with the recommendations we give.

However, in some cases, patients will modify things not because they feel unwell, but because they have read something that contradicts our advice. As an example, a few months after Nick's death, I saw one of his patients, a parasympathetic-dominant patient with a low-grade lymphoma of the skin. His disease had improved at first, but it then stabilized with a small patch of disease remaining. As most clinicians know, with a change of physicians sometimes new information comes forward. I routinely ask whether patients are having any trouble tolerating their supplements.

He said no, rather tentatively, and paused. Then he said, "Well, I'm not actually taking the calcium supplements that Dr. Gonzalez told me to take. I read that calcium needs to be balanced with magnesium, so I've been taking a product with extra magnesium." The extra magnesium was making his system too alkaline and suppressing his weak sympathetic system,

keeping his parasympathetic system relatively overactive and preventing the protocol from bringing his system into balance. The advice he found about balancing calcium with magnesium is valid for people with other metabolic types, but not for him. From my point of view, his modification of his protocol was preventing progress against his disease.

Another example involves a patient whose sympathetic system was overactive. Such patients are accustomed to having the quick responses of a metabolism that is on red alert all day long, ready to react and react quickly. Sympathetic dominants are usually very busy people, rushing through their day checking things off their to-do list. Their nervous system is accustomed to this frenetic activity, and when they begin a treatment protocol that is designed to tone down the sympathetic system, they may feel somewhat lethargic, contemplative for the first time in years, possibly depressed as they sense some unpleasant realities in their lives that were previously ignored in a sea of busyness. If they relax and allow their nervous systems to readjust, they can learn to appreciate this state and even find that they become more effective: they listen to others more carefully, they plan more thoughtfully, and they spend less energy pointlessly.

But some patients resist this process. A long-time patient of Nick's illustrates this principle. She would call periodically, reporting mild lack of energy. He would remind her of the goal of toning down her sympathetic nervous system. She would then start reading the nutritional literature or going to other practitioners, looking for a solution for her low energy, and start some herb or supplement that would make her feel better by stimulating her sympathetic system. A few months later, she would call Nick because of a deterioration in her medical condition. He would then find out what she had started this time, explain why it was counterproductive, and tell her to stop it. Her condition would then improve, until the next time she decided to find out why she did not have the energy to complete her extensive to-do list. This cycle repeated for years.

Another, sadder story involves a patient of mine, who also had an overactive sympathetic system along with a metastatic carcinoma in his abdomen that he and I could feel on exam. After receiving his protocol from me, he had not followed it completely, and his disease was dramatically worse when he returned for his six-month checkup, with a mass in his abdomen the size of a cantaloupe. I pointed out that he would never know if it would work for him if he did not follow through 100 percent; he then called a few months later to report that he had taken my words to heart and that his tumor had markedly reduced in size. When I spoke with him a few months later, he had continued to improve, but he did report some low-grade fatigue and depression. I explained that the diet and supplements were designed to tone down the sympathetic system and that this could create these symptoms. I counseled him to be patient.

About six months later, he called and asked, “Do the enzymes ever stop working?” His cancer had resurged with a vengeance; the mass had regrown, and he had developed fluid in his abdomen, putting pressure on his stomach and making adherence to his protocol challenging. On further questioning, I learned that a few months earlier he had visited his family physician and reported his symptoms of fatigue and mild depression. His physician then prescribed Adderall, a potent sympathetic stimulant, and the patient opted to proceed without checking with me. On this medication, not surprisingly his fatigue and depression resolved—and his disease exploded.

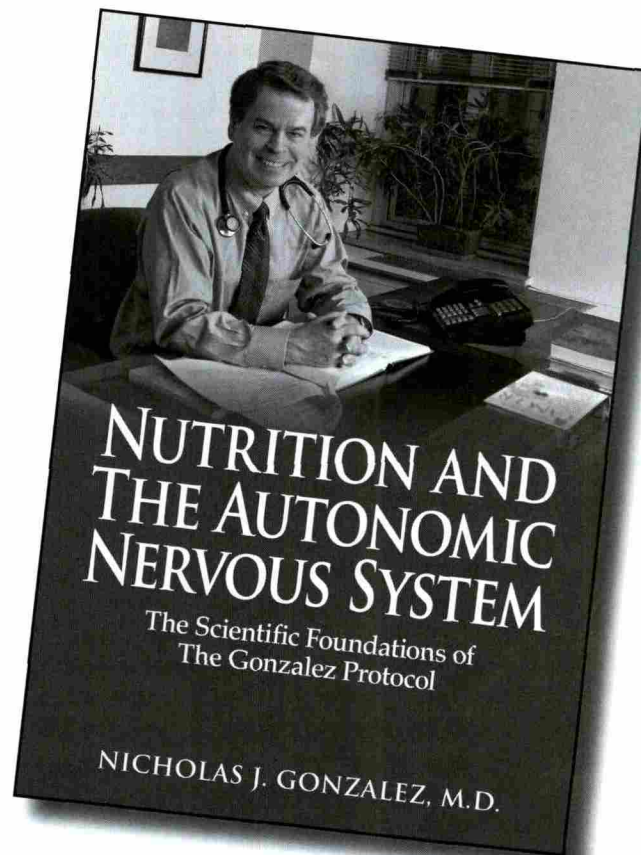
Balanced patients, those whose sympathetic and parasympathetic systems are equally or nearly equally active, need only to have this balance maintained with their nutritional supplements. The diets for balanced patients have a great deal of flexibility; such patients will at times crave red meat and other acid-forming foods, and at other times desire only salads, citrus, and other more alkalizing foods. I saw one such patient recently, a long-term patient of Nick’s who is a health professional. She reported that she did indeed have shifts in her food preferences, with days of eating meat followed by days of eating leafy greens.

She then told me enthusiastically about a meditation program that she had begun. I started to feel a little nervous as she spoke. Some forms of meditation have been shown to stimulate the parasympathetic nervous system,⁷ which could cause a balanced patient to shift into parasympathetic dominance. Dr. Kelley once told me that meditation was bad for people with an overactive parasympathetic system, and that such patients should instead consider watching action movies or playing video games to stimulate the underactive sympathetic system.

As I started to express my reservations, she said, “Oh, I don’t meditate every day. There are some days that it just doesn’t seem like the right thing to do.” I then told her that it would be interesting to see if her preferences about meditation correlated with her food choices, and asked her to keep track of that going forward. She said, “I can already answer that. The days I want to meditate, I don’t want red meat. The days that meditation doesn’t feel right, I want to eat a steak.”

After many years on her protocol, she was able to recognize how her metabolism was functioning on any given day and adjust both her diet and her activities to bring her system into balance, almost instinctively. On days when her sympathetic system was a trifle overactive, she would meditate and eat more lightly; on days when her parasympathetic system was overactive, she would eat more animal protein and skip the meditation.

The principles detailed in this book, when used correctly, can be a powerful tool to improve health and well-being. As with any kind of medical knowledge, these principles are best learned in an apprenticeship or internship setting, such as Nick had with Dr. Kelley, and as I had with Nick. The prevailing mindset of the medical world, whether using pharmaceuticals,



diet, or nutritional supplements, is biased toward a “one size fits all” model that takes some time and training to unlearn.

Drs. Pottenger, Gellhorn, and Kelley used their observational skills and clinical acumen to create medical theories that deserve wider recognition than they have received. I hope that the publication of this book will help speed the day when their work becomes part of standard medical treatment.

References

1. Pottenger FM. *Symptoms of Visceral Disease*. St. Louis, MO: C.V. Mosby Company; 1944.
2. Gonzalez NJ. *One Man Alone: An Investigation of Nutrition, Cancer, and William Donald Kelley*. New York, NY: New Spring Press; 2010.
3. Barron TI, et al. Beta-adrenergic blocking drugs in breast cancer: a perspective review. *Ther Adv Med Oncol*. 2012;4(3):113-125.
4. Xiao Q, et al. Dietary and supplemental calcium intake and cardiovascular disease mortality: the National Institutes of Health-AARP diet and health study. *JAMA Intern Med*. 2013;173(8):639-46.
5. Waldman T, et al. Calcium Supplements and Cardiovascular Diseases: A Review. *Am J Lifestyle Med*. 2015;9(4):298-307.
6. Gonzalez NH, Isaacs LL. The Gonzalez therapy and cancer: a collection of case reports. *Altern Ther Health Med*. 2007;13(1):46-55.
7. Amihai I, Kozhevnikov M. Arousal vs. relaxation: a comparison of the neurophysiological and cognitive correlates of Vajrayana and Theravada meditative practices. *PLoS One*. 2014;9(7):e102990.

Linda L. Isaacs, MD
36 E. 36th Street, Suite 1A
New York, New York 10016
www.drLindaI.com
212-213-3337

Calling all MDs! How To Help Naturopathic Colleagues Gain Licensure in All 50 States

One of the best ways to build an integrative medical practice is to have a naturopathic doctor in your area with a robust referral pattern or to bring a naturopathic doctor into your practice. Without licensure for NDs in all states, this is not possible in many places. Currently only 22 states license NDs. We need your help!

When a gynecologic oncologist from Massachusetts General called me last year to tell me that one of her young patients with advanced cervical cancer was told by her "naturopath" he could cure her cancer with "herbs and naturopathy," we were both horrified. After researching the "naturopath" making that claim, it became clear he was neither a naturopath or any other kind of licensable medical provider. I assured my MD colleague this person did not represent the naturopathic community and that he would never be licensable in any state that regulates naturopathic doctors. The patient grew to understand that conventional care alongside naturopathic support was truly her best option. There is a public health concern across the country with similar individuals using the term *naturopathic*.

One key to protecting public health, to giving more people access to naturopathic medicine, and to expanding the reach of licensable naturopathic doctors and integrative medicine in general is to ensure licensure in all 50 states. In January of 2017, Massachusetts Governor Charlie Baker signed a bill to license naturopathic doctors in the state, but *it took over 25 years* of education, lobbying, letter writing, and building our grassroots to achieve that outcome. The process would be *much shorter* and more direct if our conventional medical allies threw their support behind state licensure efforts.

Lawmakers ears perk up when they hear from members of the more conventional medical world, regardless of how you practice. With the MD/DO/NP/PA/nursing community at our side, especially those of you in pre-licensed states, we can get this job done with much more efficiency.

We are gathering a list of willing colleagues ready to write a letter, send an email, or make a phone call in support of naturopathic legislation in your state. If you are willing to be called upon to help NDs in your state, please send an email with your contact information to Michelle A Simon, ND, MPH, <msimon@naturemed.org>, board member of the American Association of Naturopathic Physicians (AANP), and President of the Institute for Natural Medicine (INM).

The INM is the consumer education partner of the AANP. Together these organizations are implementing a national

campaign in support of naturopathic medicine that includes working alongside state leaders where planned or pending legislation is taking place. After you send your contact information, you will be contacted by an INM representative with next steps.

State affiliates of the American Medical Association are in lockstep with the AMA's articulated and moneyed policy of no new licensure or expansion of practice for any profession. (You can read more about that here: <http://tinyurl.com/ycbceaco>.) Your voice and your endorsement makes a tremendous difference against that powerful lobby and helps amplify our focused and ongoing work to have all 50 states license naturopathic doctors by 2025.

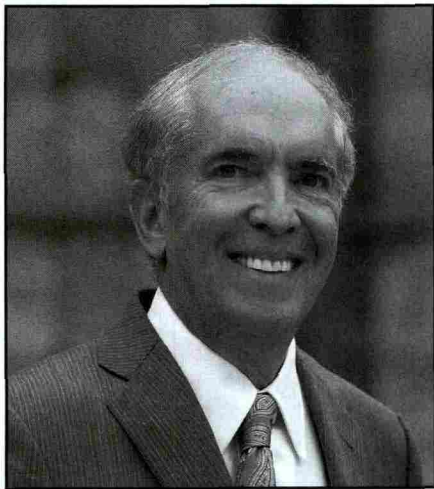
As most readers of the *Townsend Letter* know, naturopathic doctors, trained at four-year, in-residence, full-time naturopathic medical schools, emphasize preventive care, whole person medicine, and natural medicine approaches for both acute and chronic disease. That our naturopathic approaches are needed more than ever is evident by the galloping rates of diabetes, heart disease, cancer, and obesity in this country; many of these and other ailments are preventable and treatable with lifestyle and diet modification and effective natural medicine, hallmarks of naturopathic practice.

We have had unprecedented success in the legislative arena in the past six years. North Dakota, Colorado, Maryland, Pennsylvania, and Massachusetts have all had success. A bill is currently sitting on the Rhode Island Governor's desk. We have momentum, and we have a trained force of naturopathic doctor advocates ready to lead legislative efforts in their respective states. The AANP maintains a robust legislative toolbox on education and training, efficacy and cost efficacy, and patient testimonials for ND state leaders to access.

If you are willing, please send your contact information to Dr. Simon as above. Thank you for your support and encouragement.

Amy Rothenberg, ND

Amy Rothenberg, ND, is the recipient of the 2017 AANP Naturopathic Physician of the Year Award. She spearheaded the movement that achieved licensure in Massachusetts in 2017. She has practiced for the past 32 years in Enfield, CT www.nhcm.com, teaches through the New England School of Homeopathy www.nesh.com, and is a contributor to the HuffPost <http://www.huffingtonpost.com/author/amy-rothenberg-nd>.



Current Controversies

by Ira L. Goodman, MD, FACS, ABIHM, FAARM
iraleegoodman@gmail.com

Politics in Medicine

Given the national focus on politics during the presidential election and beyond, it is appropriate for physicians to look at how this affects your practices and patients. It seems as though the media is obsessed with politics, with every move or word spoken by the key players, every proclamation, executive order, new law, or the latest flap. And why not? These things affect the way we live, our economy, taxes, real estate values, and so much more. It appears mandatory to pay attention to politics, even before science. Before exploring the specifics in relation to medicine, let's step back and ask: what is politics?

Politics is one of the five branches of philosophy. The others are metaphysics, epistemology, ethics, and aesthetics. Without going back and referencing the books written by Aristotle, which you undoubtedly have at your bedside, these terms can be understood with a simple thought experiment. Imagine you and a fellow astronaut have been placed in suspended animation and sent into space for approximately 10 years in a deep sleep not knowing where you would land. This experiment begs the question of who would volunteer for such a trip. At first glance, it seems no one would; but in actuality, there was a long line of applicants consisting mainly of primary care physicians who were insurance based. Anyway, back to the thought experiment. The space ship lands safely, the occupants awaken. What are the first three questions they ask each other? The first one is obviously "where are we?" That is metaphysics. One may say this looks like planet X, and the other may say planet Y. The second question is "how do we know that?" That is epistemology. They look at the instruments, make some calculations, and may even have radio contact with earth to help them figure this out. The third question is "what do we do now?" That is ethics – the branch of philosophy dealing with action. Do we stay put, venture out, return home? Morals are not the same as ethics. Morals are a culturally defined subset of ethics concerned with good and bad.

These are the important questions in life and, indeed, in medicine. Isn't this what you do with every patient at every visit? When a patient comes to you with entry forms filled out, the physician attempts to discover where they are or what they have (metaphysics)- their symptoms, past history, medications, main complaints, etc. The diagnosis answers the metaphysical question. Then, he or she tries to answer the second question which is how do we know that the diagnosis is accurate? Well, you look at the past medical history, examine the patient to collect the physical signs, listen to the symptoms, look at the labs, order more labs, and basically collect whatever objective data you can. This is epistemology and a critical step in the thoughtful physician's inquiry. A physician's

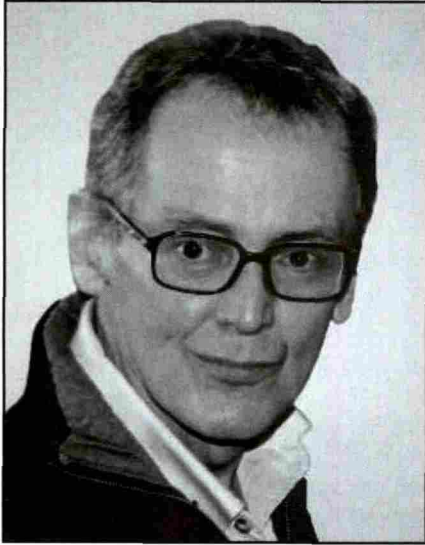
epistemology is perhaps the most crucial step in a patient encounter. Is the diagnosis based on evidence, facts, or just intuition? Then, of course, there is ethics: what do you do for this patient? More tests, what treatment, what follow-up, etc., etc. The treatment decisions (ethics) come after the metaphysical and epistemological inquiries, which are hopefully done de novo each time. Unfortunately, many physicians' epistemology is based on whatever big pharma tells them or whatever they see their colleagues do. As physicians, we are all philosophers.

Aesthetics has a limited place in medicine except if you are a plastic surgeon or dermatologist. Most physicians in private practice concern themselves with decorating their offices or facilities to make it more pleasant for the patients or as a marketing tool; but clearly, for most doctors, aesthetics is secondary to metaphysics, epistemology, and ethics. Or at least it should be. What about politics? This should be the last and least important consideration for the wise physician; but unfortunately, it has usurped the number one role! It has become paramount in most physicians' minds to consider politics, which concerns itself with laws, regulatory agencies, and the rules of man as opposed to science. Who could survive without considering what is legal to do, what your medical board would allow, what your specialty board considers the standard, what the malpractice attorneys are likely to pounce on, or what your fellow physicians would do? Ah, the community standard!! I hate that term. I guess it's better than the Betty Crocker cookbook of internal medicine or whatever your specialty is. Betty Crocker has a book for every specialty. As long as you stay within the bounds of these cookbooks, you are safe; and after all, isn't that what it's all about - protecting number one?

I say politics should be the very last branch of philosophy a good physician should be concerned with; but as we all know, it has become the first and most important. A good physician should be concerned about controlling the laws of nature not being controlled by the laws of man. We are upside down. The courageous physicians practicing so-called alternative medicine (another term I hate since it really is just medicine that works safely) are attempting to place metaphysics, epistemology, ethics, and aesthetics above politics, which periodically gets them in hot water. I have always thought there are two kinds of people in this world—those who produce goods or services and attempt to control physical reality, and those who attempt to control other people (the politicians). Let's put metaphysics, epistemology, and ethics ahead of politics. We would all be better off. ◆

IN MEMORIAM

Paul Jaconello, MD



It is with great sadness we communicate the passing of Dr. Paul Jaconello. Paul passed peacefully at home surrounded by family and loved ones on Sunday, July 23, 2017.

Dr. Paul Jaconello graduated from the London Hospital Medical School in London, England, in 1967. After interning in medicine, surgery, and

obstetrics, he obtained a fellowship in anesthesia. He emigrated to Canada in 1973, and became an assistant professor in anesthesia at the University Hospital, Saskatoon, and the McMaster University Medical College.

In 1975, Paul Jaconello moved to Toronto and started a general family practice in which he began to study and apply nutritional and orthomolecular medicine. This led him to establish an independent clinic in 1979, dedicated to combining conventional medicine with the safe and effective use of non-conventional therapies, including low dose immunotherapy, chelation and detoxification therapy, medical ozone, orthomolecular medicine, nutritional and lifestyle counseling.

Dr. Paul Jaconello was a founding member of the Canadian Society for Orthomolecular Medicine, a Diplomate of the American Board of Chelation Therapy and of the International Board of Metal Toxicology. He was a member of the Institute for Functional

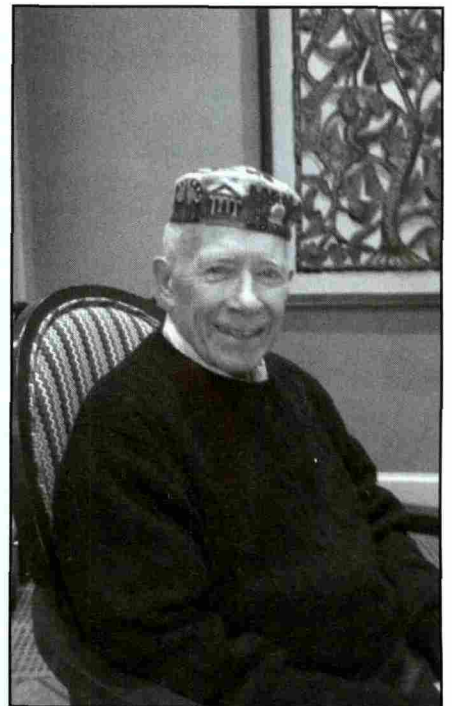
Medicine, the International College of Integrative Medicine, and part of the OMA Complementary and Integrative Medicine Interest Group. Paul dedicated his life to helping others, researching and administering advanced non-conventional medical treatments to support improved outcomes for his patients. He mentored many colleagues in their practice of integrative medicine and dedicated his personal time to supporting organizations involved with education and advocacy for nutritional medicine. He also provided the community with information about integrative medicine through numerous published articles and public presentations, including the Orthomolecular Health information series.

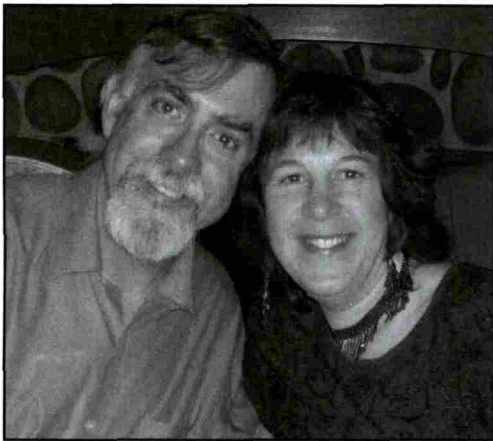
We honor Dr. Paul Jaconello for his brave dedication to advancing integrative medicine. He will be deeply missed by his patients, colleagues, medical and clinic staff.

Warren Levin, MD

Warren Mayer Levin, MD, born August 20, 1932, passed away on July 21, 2017, in Atlanta, Georgia. Dr. Levin, a distinguished pioneer in integrative/functional medicine, opened the first alternative medical center in New York City in 1974. Dr. Levin passed away leaving feelings of warmth and love among all the lives he touched and were touched by. As a pioneer in the field of alternative medicine (which evolved into what we now refer to as either complementary, integrative or functional medicine), he was beloved for the passion he brought to both his patients and colleagues alike. He dedicated the better part of his life to developing and defending integrative practice, teaching and mentoring from his knowledge and experience, learning as much and as often as possible, and providing the most insightful, innovative, and compassionate care to his grateful patients. His landmark defense of his medical license in New York, culminating in a 1994 decision in his favor, paved the way for the continuation and advancement of the field throughout the country. He touched countless lives with his vision for health and wellbeing, long before it was commonplace to think in those terms, and was an inspiring and charismatic leader in the field.

He is survived by his loving wife, Susan; loving children Beth Galan, Julie Levin, and Erika Needleman; loving brother Joel Levin; his grandchildren Dave and Chris Galan, Karina Rahardja, and Emi Daigle (son-in-law Marc Daigle), Binah, Mindy and Chaim Needleman (son-in-law Matt Needleman). A memorial fund will be established to benefit those in need of integrative medical treatment.





Healing with Homeopathy

by Judyth Reichenberg-Ullman, ND, DHANP, LCSW,
and Robert Ullman, ND

www.healthyhomeopathy.com

A Mom with Meniere's Disease and A Daughter with ADHD: When All You Need Is Homeopathy

Sometimes less is more.

It strains the mind of skeptics that medicine as gentle, natural, and diluted as homeopathy can have any effect, much less be one of the most powerful healing modalities on the planet.

We rarely see patients who come to us first. Most have been through the revolving door of conventional therapies. And, often, they have tried a variety of natural therapies and finally ended up in our office because they have heard others sing the praises of homeopathy. In one of our earliest books, *Ritalin-Free Kids*, we implored parents to try homeopathy first because the family could have much to gain, little to lose, and could possibly save themselves years of therapy, drugs, expense, and unhappiness. Unfortunately, homeopathy has the reputation among many to produce results slowly. The pace of healing depends on many factors, but often the progress is slow because the right remedy has not been given.

So, when Gretchen, one of our mom patients, came in recently extolling the virtues of her family's care and reminding us that the first remedy worked beautifully for both of them, we thought it deserving sharing in our column:

Hello Judyth and Robert,

I was thrilled with the speed and precision of the effect of a homeopathic remedy for my young daughter's emotional outbursts. We had started on a path of counseling and behavior training when a friend recommended we consult with you. At our first consult, I felt he really heard our concerns and could see my child's energy and behavior patterns. It was such relief and so validating to feel seen and heard. They prescribed a remedy that helped curb her outbursts within a few weeks. Soon my daughter's kindness, empathy and intelligence became the forefront of her personality instead of anger and acting out. I highly recommend homeopathy as a frontline therapy for behavioral issues. The results were stunning!

Then I decided to become a patient after a relapse from Meniere's disease, causing inner ear, hearing issues, and vertigo that were affecting my daily functioning. I had previously undergone surgery and received a different remedy from another homeopath 15 years earlier. When the old remedy was no longer working, I consulted the Ullmans. In sharing my health history, the comprehensive questions about my physical symptoms and emotional patterns helped to find the perfect remedy. The symptoms of pressure in my ears and face subsided over several weeks and the Meniere's disease once again went into dormancy. I'm so grateful for the careful assessment skills and close follow-up to help restore my quality of life. Homeopathy has helped me maintain health in a way that western medicine could not.

With gratitude.

We share this feedback to encourage those of you who might be on the fence to give homeopathy a go. And, for those of you who have tried many healing paths and are still suffering. This is how homeopathy helped Gretchen and her daughter, Kylie.

Kylie: The Six-And-A-Half-Year-Old with ADHD

Kylie is an extroverted child who craved stimulation. Transitions were tough for her and, consequently, for the family. She could be brilliant out in the world – kind, compassionate, thoughtful. But she saved her worst behavior for those closest to her. An outburst could occur at any time, but especially in the morning and at bedtime. Gretchen described her as “obstinate, intense, persistent, and challenging.” Kelley was highly demanding of her parents' attention, to the detriment of her younger sibling. She talked incessantly. Showing off was her M.O. to attract attention however she could. Quite the dominant member of the family, Kylie's sister was comparatively mild-mannered and accommodating. Simply



Healing with Homeopathy

put, Kylie was a little girl with a big personality and a big sense of entitlement. When she didn't get her way, in public or in private, she threw a tantrum on the floor, kicking and screaming, whether at home or public. A "watch-me" kind of kid. Kylie would do most anything to keep all focus on her. The more over-stimulated she became, the more resistant and insistent to the point of calling her mom names. The family felt they were walking on eggshells to avoid and manage Kylie's meltdowns.

Kelley was candid during my interview with her: "If I don't get what I want, I whine or cry or punch. Or I bite my mom or dad on the shoulder or my babysitter's thumb. I don't like my parents' rules so I get back at them. Tell them I hate them. (Kelley's mom described this as preemptively striking back.) I used to lie and steal in school. I don't anymore. But I still get mad when I'm punished."

We gave Kylie one dose of *Lachesis* 200C made from the Bushmaster snake. The hallmarks of children needing this remedy are dominance, jealousy, revenge, and, most of all, a tendency to do anything and everything to get all the attention. Those needing homeopathic remedies prepared from animals exhibit tendencies of competitiveness, territoriality, violence, and dominance and aggression.

One Month Follow-Up

Gretchen: "Kylie's language has become respectful and kind. She was making better choices. Not so much tit for tat. She had much less of a need to get back at people. Maybe it's the stress of school starting, but she's slipping a bit." We repeated the remedy.

Nine Weeks

Gretchen: "She's getting mad much less, feels better overall, and loves school. She's quite empathetic and is learning to be a really good friend." Kylie told us that she's able to make much better choices. We gave another dose of the remedy to hold for the future.

Four Months

Gretchen: "She's been doing awesome. She can still get upset but the household is no longer on pins and needles. Her self-talk is positive. Overall, she's doing quite well in school. We didn't need to give her the dose of the remedy we were holding."

Six Months

Gretchen: "Kylie had been doing really well until recently when her dad and I separated. She's confused about living in two houses and her behavior is relapsing." We repeated the *Lachesis* 200C.

Eight Months

Gretchen: "Kylie's been doing absolutely fabulously. Kind, super loving. She seems to be transitioning well to our

separation. She loves learning to read. Kylie is much more cuddly with me."

We'll continue to support Kylie with homeopathy, and she is likely to need a dose of *Lachesis* 1M at some point.

Gretchen: Kylie's Forty-Year-Old Mom

We first treated Kylie's mom, Gretchen, eight months ago. An ER nurse, she was thirty-nine at the time. Her main concern was recurrent Meniere's disease, diagnosed at age 17: "At that time I had terribly disabling vertigo attacks once a month. I would feel extremely nauseous to the point of being incapacitated in bed. If I moved my head at all, I would experience dry heaves. The room would just spin. It all came on out of the blue. Valium and a diuretic didn't really help. Six months after it began, I had surgery of the left ear.

"I could just wake up or be somewhere and, within half an hour, the room was spinning full on. I needed to lie down, but that didn't end the attack. Any kind of movement made it worse. Or sitting up. I couldn't read. I was violently ill. Just wanted to die. It's the worst thing I've ever been through. It would wear off in a day. I was okay for a year after the surgery. I experienced a vertigo episode after the surgery then not again for a decade. Then we had some family stress and I came down again with vertigo. I saw another homeopath, but the remedy didn't help.

"I get a lot of fullness and pressure in my ear, face, eye sockets, and all over my head. Almost like a lightweight sandbag covering everything. It's like wearing ski goggles inside my head. And I've been getting headaches. A sensation of pressure all the way around my head."

We asked Gretchen about her sensitivity. "I pick up a lot on people's energy and nonverbal cues. My three-year-old asks me, 'Mom, are you gonna cry now?' I love to garden. It's really therapeutic moving the dirt, planting seeds, seeing them grow, having food from it, being outside."

It was clear which remedy Gretchen needed, but we wanted to confirm it by asking two questions: First, if she had any problem with seasickness. "Yes, when we went to Hawaii, I felt really nauseous on the boat. The same happened as a child traveling on curvy, country roads. I've never liked roller coasters. I'm prone to vomiting with the motion sickness. Going on a cruise sounds terrible to me." Second, we inquired whether Gretchen had a caretaker personality. "Definitely. Even growing up I helped a lot with my younger brother. I had an exaggerated sense of responsibility at an early age." We wondered if she had suffered from loss of sleep from taking care of others. "Yes, I still wake at two to three in the morning several times a week."

Cocculus indica, a strong, climbing shrub that grows in Asia, fit Gretchen's case very clearly. It is a great remedy for sensitive, worn out women (though it could be for caretaking men), who are exhausted from taking care of others. In the homeopathic literature, this is called "night watching." They typically suffer from motion sickness as well. We prescribed

Healing with Homeopathy

Cocculus 200C to be taken once. Those needing homeopathic plant remedies tend to be sensitive and, more often than not, enjoy being around plants.

Five Weeks Later

"The Meniere's is gone again. No more fullness or pressure in my ear, face, or head. No headaches either for a few weeks. I'm sold on homeopathy. My hearing is normal again. Almost no ringing in my ears. My husband and I have decided to separate, but I feel strangely really okay. This is a huge crossroads. I'll be taking care of him less. My sleep problems are better the past two weeks."

Thirteen Weeks

"I took one more dose of the remedy a month ago when I felt kind of fragile and overwhelmed. We are about to separate. I felt 90 percent better before. Now it's 80 percent."

Six and a Half Months

"A little background noise has been increasing lately in my left ear. Otherwise my health has been good. We're six months into our separation. Overall, I'm grateful to be moving on. I'm enjoying gardening."

Gentle Yet Powerful Healing

This mom and daughter are a perfect example of how deep, long-lasting healing is possible with the right homeopathic remedy. The art and science of homeopathy makes it possible for one single substance from the natural world to have such a profound, lasting, whole-person effect. It is why we recommend, for many patients with a variety of conditions, to try homeopathy *first*. It is always possible to pursue another approach if homeopathy doesn't work. But, often it is just a matter of finding the *simillimum* – that one best remedy out of over 4000 that is the perfect match!

Judyth Reichenberg-Ullman and Robert Ullman are licensed naturopathic physicians, board certified in homeopathy. Our books include *Homeopathic Self-Care: The Quick and Easy Guide for the Whole Family*; *Homeopathic Medicine for Depression, Anxiety and Bipolar Disorder*; *Whole Woman Homeopathy*; *Ritalin-Free Kids*; *Rage-Free Kids*; *A Drug-Free Approach to Asperger Syndrome and Autism*; *The Patient's Guide to Homeopathic Medicine*; and *Mystics, Masters, Saints and Sages – Stories of Enlightenment*. Our new app is Natural Travel Doctor. Apple version: <https://tinyurl.com/l7song8> and Android: <https://tinyurl.com/m7cnexh>

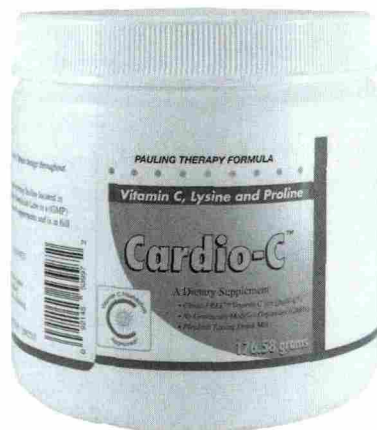
We practice at The Northwest Center for Homeopathic Medicine in Edmonds, WA and by Skype. We live on Whidbey Island, Washington, and in Pucón, Chile. Visit our website www.healthyhomeopathy.com. Please friend us on Facebook at Healthy Homeopathy. Call us at 425-774-5599 or email us at drreichenberg@gmail.com or drbullman@gmail.com.

World's Finest China-FREE™ Vitamin C



CATHCART'S Sodium Ascorbate
Quali-C fine powder (250 g)

Cardio-C™ makes Linus Pauling's recommended dosages of vitamin C and lysine easy - without pills.



ULTRAFINE L-ascorbic Acid
Quali-C ultrafine powder (200 g)

Cardio-C™ is the only Lp(a) Binding Inhibitor that contains all vitamin C as China-FREE™ DSM Quali-C®. Linus Pauling told us, "One jar prevention. Two jars therapeutic." Includes Proline. (30 servings per jar.)

Nice to be back ordering Cardio-C after using up the frozen back log. Husband asymptomatic for 11 years after LAD event and 3 stents.

Best, DL (February 21, 2017)

Testimonials represent a cross section of the range of results that appear to be typical with these products. Results may vary depending upon use and commitment.



CONQUER Liposomal D-Fraction C
In 150 nanometer sunflower-based liposomes

Over 20 Years of Experience Selling Pauling-therapy Products.

773-815-0100
IVC-Store.com

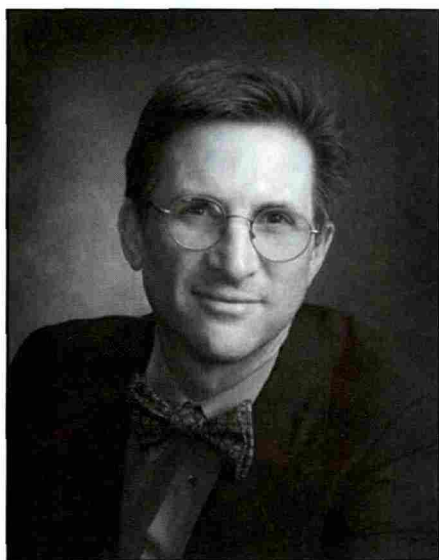
The Vitamin C Store/Intelligent*Vitamin*C Inc.
24W500 Maple Ave., Ste. 107 ♦ Naperville, Illinois

Ask us about our patient drop-ship and wholesale ordering programs.

<http://ivc-store.com/>



PANACEA Liposomal Vitamin C
DSM Quali-C in 150 nanometer liposomes



Functional Gastroenterology Bolus

by Steven Sandberg-Lewis, ND, DHANP

An Expanded View of Transaminases and New ACG Normal Values

Transaminase testing is common and included in most comprehensive metabolic panels. Over the last four decades, I have found that average healthy transaminase levels are in the high teens to the mid-twenty range, but I had no formal evidence for these being “ideal” values. Labs vary in their ranges for AST and ALT, but a common upper range of normal is 40-50 IU for males and slightly lower for females (Fried MW, 2008). Normal ranges are determined based on a “healthy” reference population. We now know that these “healthy” ranges are often found when testing people suffering from various degrees of chronic liver disease.

Reasons Why Chronic Liver Disease May Be Associated with Normal Transaminase Levels

Patients with chronic liver disease are often asymptomatic and may be diagnosed later in the course of these diseases. Examples include chronic active hepatitis C and non-alcoholic fatty liver disease both before and sometimes after progression to cirrhosis (Pratt DA, 2000 and Prati D, 2002). Recall also that transaminase levels may fluctuate between the high and normal range over time in patients with hepatitis C virus (HCV) due to spikes in viremia. Certain viral genotypes may be less likely to elevate the ALT level (Silini E, 1995 and Pontisso P, 1999). A less likely mechanism for this phenomenon would be a liver which is no longer able to release AST and ALT from hepatocytes. As the number of hepatocytes decreases with advanced cirrhosis, these serum markers become less reliable signs of hepatic disease.

Highest Incidence of Chronic Hepatitis C in Baby Boomers

The Centers for Disease Control recommends testing all baby boomers (born between 1945 and 1965) for hepatitis C virus (HCV) even if there is no other risk factor for HCV (www.cdc.gov/hepatitis/hcv/guidelinesc.htm). People in this age

group have the highest incidence of HCV hepatitis compared to any other cohort. As an explanation for high HCV rates in baby boomers, I suggest a theory:

- 1) The use of intranasal cocaine or injectable drugs of abuse was more casual in the 1960s and 1970s.
- 2) Boomers who used injection or non-injection drugs of abuse rarely, or even one time, may be reticent to admit that to their physician.
- 3) Boomers testing positive for HCV exposure may have a risk factor (non-injection cocaine use or injection of drugs of abuse) that is not divulged. There is weak epidemiological evidence for non-injection cocaine use and strong evidence for injection drug use associated with HCV transmission.

Research on Normal Range Serum Markers in Chronic Liver Disease

Multiple studies have uncovered evidence that transaminases need not be elevated in abnormal ranges to be indicators of liver disease. A study of 94,533 men and 47,522 women aged 35-59 years of age researched the predictive value of normal range liver function tests. This eight-year prospective study published in the *British Medical Journal*, showed that subjects with slightly increased transaminase levels, but still within the normal range, had higher risk for mortality from liver disease (Kim HC, 2004).

Fasting glucose, total cholesterol, and transaminases were tested yearly along with height, weight, and data on tobacco and alcohol use, family history, and any disease diagnoses. Outcomes employed were diagnosis of hepatic cancers or non-neoplastic hepatic diseases as listed on the death certificates of subjects who died during the study period. Only patients who had also been previously hospitalized for a liver-related diagnosis were included among those positive for chronic liver disease related deaths.

Adjusted relative risk of death from liver disease and slightly elevated (normal range) transaminases compared to levels less than 20 IU/L

	AST 20-29 IU/L	AST 30-39 IU/L	ALT 20-29 IU/L	ALT 30-39 IU/L
Men	2.5	8.0	2.9	9.5
Women	3.3	18.2	3.8	6.6

New American College of Gastroenterology Guidelines for Transaminases

Based on these findings and others, the American College of Gastroenterology (ACG) published new guidelines for transaminase normal ranges (Kwo PY, 2016). They state that a true healthy normal ALT level ranges from 29-33 IU/L for males and 19-25 IU/L for females. They recommend that higher levels should be assessed as signs of chronic liver disease.

Wang, et al found that higher, but within normal range ALT levels, independent of body mass index was a dose related predictor of type 2 diabetes in a Chinese population ($p < 0.001$, Wang CS, 2012). In a study of 7403 subjects, the upper limit for healthy range ALT level was deduced to be 31 IU/L for males and 23 IU/L for females. This study also found a higher prevalence of metabolic syndrome and insulin resistance with these higher, yet within normal range values (Kang HS, 2014).

Celiac Disease and Transaminases

Using traditional upper cutoff levels of 40 IU/L, chronic unexplained "transaminitis" has also been reported in about 40% of adult celiac patients compared to 0.5% of the general population (Bardella MT, 1999 and Rubio Tapia A, 2008). Always consider ordering screening serum tests for celiac disease (anti-gliadin antibody IgA and IgG, and/or anti-tissue transglutaminase IgA and IgG) when other causes of hepatic disease are not found in patients with elevated transaminases.

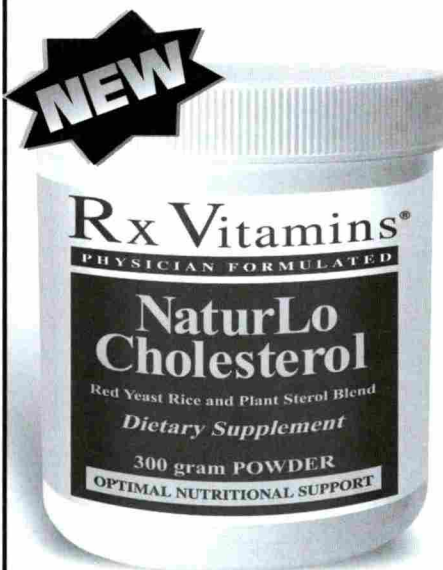
Bibliography

Bardella MT et al, Chronic unexplained hypertransaminasemia may be caused by occult celiac disease. *Hepatology*. 1999 Mar;29(3):654-7.
 Fried MW et al, Hepatitis C infection with normal liver chemistry tests. *Clin Gastroenterol Hepatol*. 2008 May;6(5):503-5.
 Kang HS et al, Healthy range for serum ALT and the clinical significance of "unhealthy" normal ALT levels in the Korean population. *Int J Environ Res Public Health*. 2014 Dec 10;11(12):12767-76.

Kim HC et al, Normal serum aminotransferase concentration and risk of mortality from liver diseases: prospective cohort study. *BMJ*. 2004 Apr 24;328(7446):983.
 Kwo PY, et al. ACG Clinical Guideline: Evaluation of Abnormal Liver Chemistries. *Am J Gastroenterol*. 2017 Jan;112(1):18-35.
 Pontisso P et al, Hepatitis C virus RNA profiles in chronically infected individuals: do they relate to disease activity? *Hepatology*. 1999 Feb;29(2):585-9.
 Prati D et al, Updated definitions of healthy ranges for serum alanine aminotransferase levels. *Ann Intern Med*. 2002; 137: 1-9.
 Pratt DA, Kaplan MM, Evaluation of abnormal liver-enzyme results in asymptomatic patients. *N Engl J Med*. 2000; 342: 1266-71.
 Rubio-Tapia A, Murray JA, Liver involvement in celiac disease. *Minerva Med*. 2008 Dec;99(6):595-604.
 Silini E et al, Differential distribution of hepatitis C virus genotypes in patients with and without liver function abnormalities. *Hepatology*. 1995 Feb;21(2):285-90.
 Wang CS et al, Impact of increasing alanine aminotransferase levels within normal range on incident diabetes. *J Formos Med Soc*. 2012 Apr;111(4):201-8.

PHYSICIAN FORMULATED

NaturLo Cholesterol



Red Yeast Rice and Plant Sterol Blend Dietary Supplement

300 gram POWDER

One Scoop (one teaspoon) Provides:

- Phytosterol Complex (providing beta sitosterol, campesterol & stigmasterol) 1250 mg
- Red Yeast Rice (citriinin free) (monascus purpureus) 1200 mg
- Other Ingredients: Dark Chocolate flavoring, fruit sugar

Recommended Usage:

As a dietary supplement, take 1 level scoop (1 teaspoon) in the morning before breakfast and 1 level scoop in the evening before dinner. Recommended to be mixed in soy or skim milk.

NaturLo Cholesterol is designed to support the maintenance of HDL cholesterol and triglycerides within normal ranges. The formula helps maintain healthy cholesterol levels with natural and effective ingredients.* NaturLo Cholesterol is a powerful combination of red yeast rice and a plant sterol blend. It is a safe addition to any diet and exercise program. NaturLo Cholesterol is simple, safe and effective.

Rx Vitamins
 PHYSICIAN FORMULATED
 Scientifically Advanced
 Nutritional Supplements

To receive technical information on this or any Rx Vitamins formula, or to place an order, please call:
1-800-Rx2-2222 or 914-592-2323
 Visit us at **www.rxvitamins.com**

* This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

OPTIMAL NUTRITIONAL SUPPORT



Ask Dr. J

by Jim Cross, ND, LAc
thias1020@yahoo.com

Brain Fog: National Security Risk

In the 30-plus years I have been treating people for food allergies/intolerances, I have found that the two most common symptoms I have seen in my patients are brain fog and fatigue. This may sound counterintuitive as the initial problem lies in the gastrointestinal tract, but I think most people don't realize they have real GI issues because they take some over-the-counter symptom suppressor. The leaky gut that is created from the intestinal inflammation is causing a leaky brain, and this then leads to brain fog.

Having taught anatomy and physiology for 28 years at a junior college in Quincy, California, I have witnessed what I see as a gradual disintegration in the critical thinking ability and brain processing speed of my students. Is this brain fog I am seeing caused by food allergies/intolerances leading to a leaky gut? I would need several million dollars and an NIH grant to establish definitively that it is, but let's work from the point of view that it is.

Clinically I have seen multiple instances of people who have come to me for primarily physical issues that have improved or not improved with my identification of their food allergies/intolerances. An added bonus in many of them is that they report that their brain fog has cleared and that they now are able to focus and work more efficiently than before. Let me give you a few clinical examples.

Patient #1 was a 30-year-old male who came in complaining of bouts of stomach pain that were becoming debilitating. There were no major complaints outside of the stomach pain. Using a radionics machine, we identified his allergies as potatoes, regular salt, and eggs and grains eaten together. Upon following the diet for two weeks, he reported that his stomach pain was 90% better. In the two weeks before he saw me again, he had accidentally eaten some pancakes and immediately became in his words "spaced out and unable to think clearly." One other time he had consumed a piece of carrot cake and had the same sensations appear.

Of course, in both instances he had eaten grains and eggs together. Upon further questioning, he had told me one of his favorite foods was pancakes. He would invariably become spaced out and unable to think clearly every time after consuming the pancakes. He was totally amazed that he couldn't have put two and two together and figured this out before.

It always amazes me how many of our patients aren't able to think critically about their health and the possible causes. If a stomachache or brain fog or diarrhea happens after eating certain foods, why can't their brains critically think and go "voila it's something that I'm eating"? Instead they subscribe to what I call the Pepcid AC Mentality: before consuming pizza and beer, take a Pepcid AC!

Patient #2 was a 25-year-old female who came in initially because she had been diagnosed with Grave's disease and was set up for a thyroid ablation in two weeks and didn't want to have her thyroid radiologically obliterated. I tested her using NAET or Nambudripad Allergy Elimination Technique. She was allergic to soy, milk, and eggs. Coincidentally, she was drinking a quart of milk each day. She also couldn't breast feed as a baby and was given a soy formula because of an intolerance to the various dairy formulas that were tried.

Symptomatically, she was not your typical hyperthyroid patient. She did have a resting tremor, pretibial myxedema, and tachycardia but was overweight and did not have diarrhea, ophthalmopathy, increased sensitivity to heat, sleep disturbances, or increased anxiousness.

We talked for almost an hour about all the foods that could contain milk, soy, and eggs. She was determined to keep her thyroid gland alive and functioning, so she did not eat any of the three above foods or any food containing them for two weeks. She said she basically ate meat, vegetables, rice, and fruit for those two weeks.

She went to her endocrinologist after two weeks who was amazed at the changes in her. Her tremor and tachycardia were gone. Her heart rate had dropped from 104 to 72. After she told the doctor what she had done, the doctor's response was that she must not have had Grave's disease. My patient showed the doctor her lab report with the seriously elevated thyroid stimulating hormone receptor antibody or TRAb, but her doctor still claimed my patient must not have really had Grave's disease. To quote the folk singer Paul Simon, "a man (woman) hears what they want to hear and disregards the rest." I find his lyrics are extremely apropos in this patient's case.

What she later reported to me was that she had been extremely close to being fired for poor performance at work. She had been unable to concentrate for more than a few minutes and was pretty much unable to perform the work demanded of her. After a few days on the diet, her brain had suddenly become functional again. She was now finishing her job in four hours instead of eight, which was of course creating a whole new set of problems. My patient was still elated none the less!

Now let's get to the subtitle of my article. Could it be that the incredibly short-sighted, obtuse decisions regarding the war on terror that our elected officials continually make be connected to brain fog caused by the foods they are consuming? A friend of mine is a staff member for a member of the Senate and eats regularly in the congressional cafeteria. He is overwhelmed by the amount of work required of him and so relies on the food sold there. From what he has relayed to me, it is a typical cafeteria selling mostly fast food laden with Neocarbs: white flour and white sugar and caffeine-laden drinks.

Now many contributors to the *Townsend Letter* over the years have constructively laid out the connection between junk food and leaky gut. At the Environmental Health Symposium that I attended in San Diego this year, many presenters successfully connected leaky gut to leaky brain and neuroinflammation. Neuroinflammation definitely leads to slower processing and feelings of unclear thinking or brain fog.

My solution is to offer all members of Congress a free integrative medical screening by various health care professionals around the country who believe as I do and would love to see their representatives be able to think more clearly and make decisions based on rational thoughts not obscured by junk food-caused leaky gut leading to leaky brain resulting in obtuse, short-sighted, money-wasting decisions.

Who wants to help me get the ball rolling?

Classified Advertising

ADD \$50,000 TO YOUR PRACTICE WITHOUT INCREASING STAFF! Register for the webinar NOW! www.yolandagoff.com/hcpn-webinar

FOR SALE FUNCTIONAL MEDICAL PRACTICE Stephenson County, IL. Email info@eparagongroup.com

SACRAMENTO CA INTEGRATIVE MEDICINE practice available for MD/DO. DrSutton@raphaelmedicine.com

PEMF-120 DEVICE. NEW condition. Inc all applicators. \$13,500. Healthquest215@yahoo.com

INTERNATIONAL 26,000 SQ. FT. INTEGRATIVE WELLNESS CENTER located in Irvine, CA. Full Time opening for CA licensed MD/DO with expansive, integrative, holistic & professional background. Join a team of 45 who aspire every day to transform patient's lives. This Medical Doctor must lead a healthy lifestyle and work with the following integrative modalities: Endocrine, Immune/Auto-Immune, Cancer and of course Lifestyle. To learn more about this unique and wonderful career opportunity, please visit: www.centerfornewmedicine.com and www.cancercenterforhealing.com. You may email your CV to: Kitty@cfmedicine.com or call 949-680-1893. We look forward to speaking with you!

Please Support the Advertisers in this Issue

Albion	19
Allergy Research Group	5
Biopure Healing Products	23
Biotics	2
Canada RNA	55, 69
College Pharmacy	59
DaVinci Laboratories	32
DHA Laboratory	8
DNA Connexions	15
Doctor's Research	71
Electromedical Products	12
Enviromedica	Inside Front Cover
Essential Formulas	Inside Back Cover
Great Plains Laboratory	27
Hertoghe	91
Jarrow Formulas	9
Dr. Serge Jurasunas	67
Klaire Labs	6-7
Kyowa Hakko	1
Lyme Disease Association	39
Maplewood Company	45
Mountain Peak Nutritionals	10
Mushroom Wisdom	13
Quincy Bioscience	Back Cover
Researched Nutritionals	3, 16, Flyer
Rx Vitamins	41, 85
Scandinavian Formulas	28
Sovereign Laboratories	Flyer
SYI Integrated Health	31
<i>Townsend Letter</i> Classified Ads	87
TruGen3	11
Vitamin C Foundation	83
Women's International Pharmacy	4



Curmudgeon's Corner

by Jacob Schor, ND, FABNO
drjacobschor1@msn.com

Dental Hygiene Slows Alzheimer's Decline

A paper published in March 2016 prompted me to take an extended online wander through PubMed the other day. Let me retrace my steps with you in tow as I ended up somewhere both interesting and sweet. It began with my writing a rushed review of a paper by Ide et al on periodontitis and Alzheimer's disease.^{1,2}

Mark Ide and colleagues at Guy's Hospital in London collected and analyzed data from people with mild to moderate Alzheimer's disease (AD) who were assessed for cognitive function and also for periodontal disease before and after six months. The study followed sixty non-smokers with mild to moderate dementia, who had not been treated for periodontitis in the prior six months. The goal was to see if there was an association between disease symptoms, chronic inflammation, and rate of cognitive decline. Those study participants diagnosed with periodontitis at the start of the study declined much more rapidly than those without this disease; periodontitis was associated with a six-fold increase in the rate of cognitive decline.

This strikes me as an important paper. First, these findings suggest that improving dental hygiene might slow the rate of decline in AD. Second, the results support the new theory that AD is in part an immune response to infection. And third, as there is a long list of naturopathic interventions that offer benefit in periodontal disease, this study begs the question as to whether they might help Alzheimer's disease as well.

Prior studies have reported that AD patients have worse dental health than people of similar ages and that the worse the dementia, the worse the dental health.^{3,4} The assumption has been that with advancing dementia people forget to brush their teeth.⁵ This is the first study, though, that correlates the rate of cognitive decline with poor dental health. Now that we know periodontitis is associated with faster cognitive decline, we certainly should be more proactive promoting dental hygiene in patients with early signs of AD.

The most obvious conclusion from this study is that periodontitis drives Alzheimer's disease progression, especially in light of a new hypothesis that AD is an immune reaction to infection.

In May 2016, Deepak Kumar and colleagues at Harvard suggested that amyloid proteins, which are the hallmark of AD,

have an antimicrobial function; they protect the brain against infection. Kumar suggested that infections trigger an over response by the brain's defense system triggering generation of

excessive amounts of amyloid plaque. Amyloid-Beta of Alzheimer's disease may have an actual purpose in the brain. It helps fight infection; it is now described as "... primary effector molecules of innate immunity, antimicrobial peptides (AMPs)."⁶ If bacteria or viruses slip across the blood brain barrier, the brain generates amyloid-Beta material trapping the invader. The amyloid literally cages the bacteria preventing further invasion. The problem is that the plaque remains after the bacteria die, forming long lasting deposits. While Kumar demonstrated this process in Petri dishes, this periodontitis study is the first study with people to support the theory.

We already know of several chronic infections associated with AD. Shim et al in September 2016, linked Epstein-Barr Virus (EBV) antibodies to cognitive decline and suggested we use EBV antibody levels as a biomarker for assessing rate of disease progression.⁷ Herpes simplex virus-1 antibody titers have also been linked with cognitive impairment.⁸ In fact, enough studies have associated herpes antibody levels with AD, that an August 2016 article suggested using antiviral drugs "...to slow or halt the progression of AD."⁹

Numerous studies link bacterial infection to decline. An August 2016 meta-analysis of 25 separate studies, reported that both *Chlamydia pneumoniae* and spirochete bacteria were strongly associated with risk of AD. Spirochete infections were associated with a ten-fold increase in occurrence of AD. Chlamydia infection was associated with more than a five-fold increase in risk.¹⁰

It may not be the type of infectious agent as much as the chronicity or persistence of the infection that provokes the AD triggering response in the brain. It could take continuous, long lasting antigen exposure to trigger the amyloid response.¹¹

The chain of events that leads to AD may actually start in the gut with intestinal microbiota. An August 2016 paper hypothesized that gut dysbiosis increases intestinal permeability that in turn increases blood brain barrier permeability that in turn bring more antigenic material to the brain and that this surge triggers the amyloid beta production.¹²

If this line of thinking continues to hold, we may have entered a new era in how we treat Alzheimer's disease, one in which we both understand the underlying mechanisms and also have some simple interventions to offer our patients, starting with reminding them to brush their teeth.

This reminds me of a 2010 paper that reported that individuals who were primary caretakers of a spouse with Alzheimer's disease were at much higher risk to also suffer from eventual dementia.¹³ The explanation tendered was this effect was due to stress. I recall wondering at the time whether it might be some sort of infectious etiology. The spousal risk was so high, about double or triple that of someone suffering from PTSD.

Do the interventions we employ for treating periodontal disease also work for Alzheimer's disease? A few years ago, Bhatia et al reported that a topical curcumin gel was useful in treating periodontal disease.¹⁴ This reminded me of Sally Frautschy's early research at UCLA that suggested curcumin would be useful for AD.¹⁵ This made me wonder how common it was for something useful for periodontal disease also be beneficial in treating AD?

Three papers, all published in 2016, suggest that using curcumin to fight gum disease might have merit. One in vitro study compared curcumin against the antibiotic chlorhexidine.¹⁶ A second combined curcumin with resveratrol to treat periodontitis in rats.¹⁷ The third demonstrated that curcumin has antibacterial action against specific bacteria that cause periodontal disease.¹⁸

A double blind, randomized, placebo controlled trial was published in June 2016, that gave curcumin to older adults and assessed cognitive decline. Cognitive decline was seen to continue in the placebo group but not in those receiving curcumin.¹⁹ It would appear that curcumin is good for treating both periodontal disease and Alzheimer's disease.

What else affects both positively? Melatonin is linked to periodontal health. It protects the "oral cavity from tissue damage that is due to oxidative stress, and it may contribute to the regeneration of alveolar bone."²⁰ Levels of melatonin found in the saliva are inversely associated with severity of periodontal disease. Lower the level, the worse the disease: "Therefore, melatonin may be potentially valuable in the treatment of periodontal diseases."²¹ Yet melatonin, while it certainly improves sleep and appears helpful in mice,²² does not seem to reverse cognitive decline in humans with AD, at least according to a September 2016 meta-analysis of seven studies (n= 462) that ranged from 10 days to 24 weeks in length.²³ Perhaps longer lasting trials might have shown benefit?

Green tea is another example. Several clinical trials have tested dilute green tea as a mouthwash comparing it with chlorhexidine.²⁴⁻²⁶ A 2016 human clinical trial reported that oral green tea concentrates improved antioxidant status in the brain and also performance on mental status exams.²⁷

Walking or light exercise should be on our list of things that improve both AD and periodontal health. A 2003 study reported that increasing physical activity decreased risk of periodontitis in men. "Periodontitis risk decreased by 3% for every 10-MET increase in average physical activity"²⁸ A six-month walking program with 21 participants split between walking and non-walkers, suggested that walking can slow cognitive decline.²⁹ In a larger cohort (n=104) walking just 2.5 hours per week was significantly associated with slower cognitive decline.³⁰ A 2014 study, using treadmill exercise, 30 minutes twice a week, also reported benefit.³¹

Berberine should also be added to our list of substances that may fight both periodontal³² disease and AD.³³

Which brings me to ponder whether honey might prevent Alzheimer's disease. There is decent enough evidence that honey has the potential "to promote oral wellness."³⁴ Manuka honey in particular can prevent plaque and gingivitis.³⁵ Honey's anti-plaque

action has also been compared favorably to chlorhexidine.³⁶ Honey is one of the rare substances that inhibit biofilm formation on solid surfaces,³⁷ a quality that might be very useful in fighting periodontal infection.³⁸ Yet so far, I find no citations suggesting honey might help fight Alzheimer's disease. It seems like a stretch to think it would. Yet, will any of you be surprised if we see a paper someday soon suggesting honey does work?

References

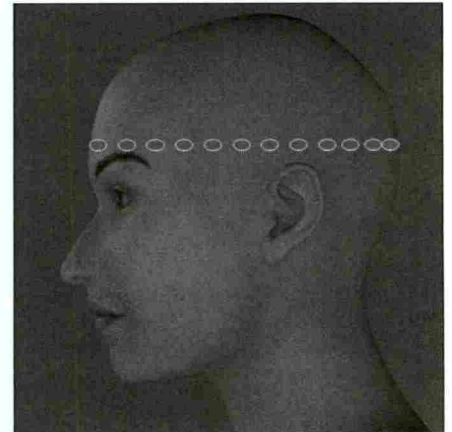
- Ide M, et al. Periodontitis and Cognitive Decline in Alzheimer's Disease. *PLoS One*. 2016 Mar 10;11(3):e0151081.
- <http://www.naturalmedicinejournal.com/journal/2016-10/periodontitis-and-alzheimer%E2%80%99s-disease>
- Kamer AR, et al. Periodontal inflammation in relation to cognitive function in an older adult Danish population. *J Alzheimers Dis*. 2012;28: 613-624.
- Martande SS, et al. Periodontal health condition in patients with Alzheimer's disease. *Am J Alzheimers Dis Other Dement*. 2014;29: 498-502.
- Syrjala AM, Dementia and oral health among subjects aged 75 years or older. *Gerodontology*. 2012;29: 36-42.
- Kumar DK, et al. Alzheimer's disease: the potential therapeutic role of the natural antibiotic amyloid- β peptide. *Neurodegener Dis Manag*. 2016 Oct;6(5):345-8.
- Shim SM, et al. Elevated Epstein-Barr Virus Antibody Level is Associated with Cognitive Decline in the Korean Elderly. *J Alzheimers Dis*. 2016 Sep 2.
- Mancuso R, et al. Relationship between herpes simplex virus-1-specific antibody titers and cortical brain damage in Alzheimer's disease and amnesic mild cognitive impairment. *Front Aging Neurosci*. 2014 Oct 15;6:285.
- Itzhaki RF. Herpes and Alzheimer's Disease: Subversion in the Central Nervous System and How It Might Be Halted. *J Alzheimers Dis*. 2016 Aug 1.
- Maheshwari P, Eslick GD. Bacterial Infection Increases the Risk of Alzheimer's Disease: An Evidence-Based Assessment. *J Alzheimers Dis*. 2016 Aug 18.
- Licastro F, Porcellini E. Persistent infections, immune-senescence and Alzheimer's disease. *Oncoscience*. 2016 Jun 30;3(5-6):135-42.
- Hu X, et al. Alzheimer's disease and gut microbiota. *Sci China Life Sci*. 2016 Aug 26.
- Norton MC, et al. Greater risk of dementia when spouse has dementia? The Cache County study. *J Am Geriatr Soc*. 2010 May;58(5):895-900.
- Bhatia M, et al. Novel therapeutic approach for the treatment of periodontitis by curcumin. *J Clin Diagn Res*. 2014;8(12):ZC65-ZC69.
- Frautschy SA, et al. Phenolic anti-inflammatory antioxidant reversal of Abeta-induced cognitive deficits and neuropathology. *Neurobiol Aging*. 2001 Nov-Dec;22(6):993-1005.
- Najafi S, et al. An In Vitro Comparison of Antimicrobial Effects of Curcumin-Based Photodynamic Therapy and Chlorhexidine, on Aggregatibacter actinomycetemcomitans. *J Lasers Med Sci*. 2016 Winter;7(1):21-5.
- Corrêa MG, et al. Systemic treatment with resveratrol and/or curcumin reduces the progression of experimental periodontitis in rats. *J Periodontol Res*. 2016 May 2.
- Izui S, et al. Antibacterial Activity of Curcumin Against Periodontopathic Bacteria. *J Periodontol*. 2016 Jan;87(1):83-90.
- Rainey-Smith SR, et al. Curcumin and cognition: a randomised, placebo-controlled, double-blind study of community-dwelling older adults. *Br J Nutr*. 2016 Jun;115(12):2106-13.
- Cutando A, et al. Melatonin: potential functions in the oral cavity. *J Periodontol*. 2007 Jun;78(6):1094-102.
- Cutando A, et al. Relationship between salivary melatonin and severity of periodontal disease. *J Periodontol*. 2006 Sep;77(9):1533-8.
- Mukda S, et al. Melatonin administration reverses the alteration of amyloid precursor protein-cleaving secretases expression in aged mouse hippocampus. *Neurosci Lett*. 2016 May 16;621:39-46.
- Wang YY, et al. Meta-analysis of randomized, double-blind, placebo-controlled trials of melatonin in Alzheimer's disease. *Int J Geriatr Psychiatry*. 2016 Sep 19.
- Sarin S, et al. Preliminary Clinical Evidence of the Antiplaque, Antigingivitis Efficacy of a Mouthwash Containing 2% Green Tea - A Randomised Clinical Trial. *Oral Health Prev Dent*. 2015;13(3):197-203.
- Balappanavar AY, et al. Comparison of the effectiveness of 0.5% tea, 2% neem and 0.2% chlorhexidine mouthwashes on oral health: a randomized control trial. *Indian J Dent Res*. 2013 Jan-Feb;24(1):26-34.
- Awadalla HI, et al. A pilot study of the role of green tea use on oral health. *Int J Dent Hyg*. 2011 May;9(2):110-6.
- Arab H, et al. The effect of green tea consumption on oxidative stress markers and cognitive function in patients with Alzheimer's disease: A prospective intervention study. *Caspian J Intern Med*. 2016 Summer;7(3):188-194.
- Merchant AT, et al. Increased physical activity decreases periodontitis risk in men. *Eur J Epidemiol*. 2003;18(9):891-8.
- Venturelli M, et al. Six-month walking program changes cognitive and ADL performance in patients with Alzheimer. *Am J Alzheimers Dis Other Dement*. 2011 Aug;26(5):381-8.
- Winchester J, et al. Walking stabilizes cognitive functioning in Alzheimer's disease (AD) across one year. *Arch Gerontol Geriatr*. 2013 Jan-Feb;56(1):96-103.
- Arcoverde C, et al. Treadmill training as an augmentation treatment for Alzheimer's disease: a pilot randomized controlled study. *Arq Neuropsiquiatr*. 2014 Mar;72(3):190-6.
- Tu HP, et al. Berberine's effect on periodontal tissue degradation by matrix metalloproteinases: an in vitro and in vivo experiment. *Phytomedicine*. 2013 Oct 15;20(13):1203-10.
- Cai Z, et al. Role of berberine in Alzheimer's disease. *Neuropsychiatr Dis Treat*. 2016 Oct 3;12:2509-2520. eCollection 2016.
- Molan PC. The potential of honey to promote oral wellness. *Gen Dent*. 2001 Nov-Dec;49(6):584-9.
- English HK, et al. The effects of manuka honey on plaque and gingivitis: a pilot study. *J Int Acad Periodontol*. 2004 Apr;6(2):63-7.
- Aparna S, et al. A comparative evaluation of the antibacterial efficacy of honey in vitro and antiplaque efficacy in a 4-day plaque regrowth model in vivo: preliminary results. *J Periodontol*. 2012 Sep;83(9):1116-21.
- Emineke S, et al. Diluted honey inhibits biofilm formation: potential application in urinary catheter management? *J Clin Pathol*. 2016 Sep 26. pii: jclinpath-2015-203546.
- Mihai MM, et al. Microbial biofilms: impact on the pathogenesis of periodontitis, cystic fibrosis, chronic wounds and medical device-related infections. *Curr Top Med Chem*. 2015;15(16):1552-76.



Monthly Miracles

by Michael Gerber, MD, HMD
Practitioner of Homeopathic Medicine
contact@gerbermedical.com

Crown of Thorns



Nerve Treatment

discovered procaine (Novocaine). Its use by scores of German researchers especially Walter and Ferdinand, during the 1920s line reverses damaged membrane potentials e cell membrane allowing potassium to flow e the nerves. Toxins and waste products are environment. The cell is stabilized and its es normal. It is phenomenal for resolution function. Procaine is made from PABA, a B thylaminoethanol, a choline precursor.

Neural Therapy According to Huneke by Peter e from Haug Publishers, Heidelberg, 1984. apy are taught by Dietrich Klinghardt, MD, n-DVD teaching set, *Neural Therapy and* is available from the American Academy ghly recommend that all physicians learn a can be applied to every area of the body. uffered to pH 7 with potassium hydroxide m a compounding pharmacy.

truly our daily miracle. Physicians can ma attack in five minutes with the IRR, ry reflex, after Harry Phillipurt, MD us pain and congestion, teeth pain and dney stone pain and nausea, gallbladder lominal pain, pelvic pain, and of course spine, hips, knees and all musculoskeletal ved. Neural therapy is not just analgesic, rves. Nerves also control the capillaries. If wn so are the capillaries; and blood flow using an oxygen and nutrient deficiency issue hypoxia is like having a heart attack rease in pain and inflammation. Neural fied with homeopathic combinations, ozone.

After CVA and Head Injury

ed very simply by using 2 or 3 ccs of or Zeel (from Heel company out of Baden om McKesson Company in the US) or

procaine alone. Subcutaneous injections using a 30 gauge needle are made around the greatest circumference of the head starting with the third eye (GV 24.5) and progressing along each side of the head about every two inches avoiding superficial veins.

The COT is a very versatile treatment. Post CVA (stroke), it can help with diplopia, vertigo, memory deficits, focus, and concentration issues. These injections can be administered weekly until there is no further progress. Headaches after head trauma can be frequently helped with COT along with injections in Bladder 10, two fingerbreadths off each side of the occipital notch. It can stop musculoskeletal headaches in seconds. (Not as easily in the middle of a three-day migraine; we recommend IV Meyer's cocktail with extra magnesium for migraines with homeopathic remedies). After the initial headache points are injected, ask the patient where is the pain now? Then place more sub-Qs in the painful points, frequently in temples, above the eyes, top of the head, neck, and trapezius Ah Shi points where there is pain on palpation. Trigger point injections of procaine through superficial, intradermal quaddles (wheals) at about one-inch deep are also beneficial in the neck and trapezius. The muscles will jump when a particularly good spot is injected. Be careful to not be too deep with very thin people to avoid any lung issues, or pinch up the tissue before the injection.

Ten or so years ago, a 63-year-old woman presented after being hit by a car and landing on her head in an icy, supermarket parking lot. She was briefly unconscious and went to the ER but had no radiological evidence of severe damage or subdural hematoma. She did have a pronounced memory deficit. We did the COT weekly for four sessions, and she improved dramatically, according to her own report and family members' feedback. She resumed her usual business activities without memory problems.

Several patients have had visual defects following motorcycle accidents involving head injury and had a normal return of vision after serial COTs. One patient had not been able to read well since

She went to her endocrinologist after two weeks who was amazed at the changes in her. Her tremor and tachycardia were gone. Her heart rate had dropped from 104 to 72. After she told the doctor what she had done, the doctor's response was that she must not have had Grave's disease. My patient showed the doctor her lab report with the seriously elevated thyroid stimulating hormone receptor antibody or TRAb, but her doctor still claimed my patient must not have really had Grave's disease. To quote the folk singer Paul Simon, "a man (woman) hears what they want to hear and disregards the rest." I find his lyrics are extremely apropos in this patient's case.

What she later reported to me was that she had been extremely close to being fired for poor performance at work. She had been unable to concentrate for more than a few minutes and was pretty much unable to perform the work demanded of her. After a few days on the diet, her brain had suddenly become functional again. She was now finishing her job in four hours instead of eight, which was of course creating a whole new set of problems. My patient was still elated none the less!

Now let's get to the subtitle of my article. Could it be that the incredibly short-sighted, obtuse decisions regarding the war on terror that our elected officials continually make be connected to brain fog caused by the foods they are consuming? A friend of mine is a staff member for a member of the Senate and eats regularly in the congressional cafeteria. He is overwhelmed by the amount of work required of him and so relies on the food sold there. From what he has relayed to me, it is a typical cafeteria selling mostly fast food laden with Neocarbs: white flour and white sugar and caffeine-laden drinks.

Now many contributors to the *Townsend Letter* over the years have constructively laid out the connection between junk food and leaky gut. At the Environmental Health Symposium that I attended in San Diego this year, many presenters successfully connected leaky gut to leaky brain and neuroinflammation. Neuroinflammation definitely leads to slower processing and feelings of unclear thinking or brain fog.

My solution is to offer all members of Congress a free integrative medical screening by various health care professionals around the country who believe as I do and would love to see their representatives be able to think more clearly and make decisions based on rational thoughts not obscured by junk food-caused leaky gut leading to leaky brain resulting in obtuse, short-sighted, money-wasting decisions.

Who wants to help me get the ball rolling?

Classified Advertising

ADD \$50,000 TO YOUR PRACTICE WITHOUT INCREASING STAFF! Register for the webinar NOW! www.yolandagoff.com/hcpn-webinar

FOR SALE FUNCTIONAL MEDICAL PRACTICE Stephenson County, IL. Email info@eparagongroup.com

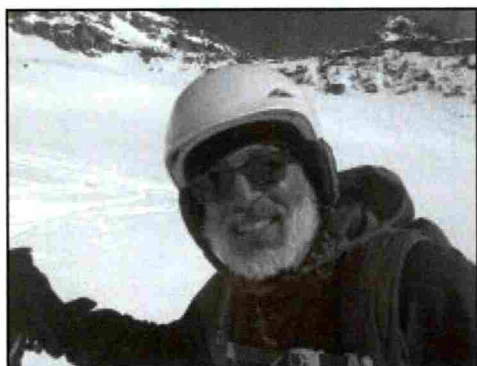
SACRAMENTO CA INTEGRATIVE MEDICINE practice available for MD/DO. DrSutton@raphaelmedicine.com

PEMF-120 DEVICE. NEW condition. Inc all applicators. \$13,500. Healthquest215@yahoo.com

INTERNATIONAL 26,000 SQ. FT. INTEGRATIVE WELLNESS CENTER located in Irvine, CA. Full Time opening for CA licensed MD/DO with expansive, integrative, holistic & professional background. Join a team of 45 who aspire every day to transform patient's lives. This Medical Doctor must lead a healthy lifestyle and work with the following integrative modalities: Endocrine, Immune/Auto-Immune, Cancer and of course Lifestyle. To learn more about this unique and wonderful career opportunity, please visit: www.centerfornewmedicine.com and www.cancercenterforhealing.com. You may email your CV to: Kitty@cfmmedicine.com or call 949-680-1893. We look forward to speaking with you!

Please Support the Advertisers in this Issue

Albion	19
Allergy Research Group	5
Biopure Healing Products	23
Biotics	2
Canada RNA	55, 69
College Pharmacy	59
DaVinci Laboratories	32
DHA Laboratory	8
DNA Connexions	15
Doctor's Research	71
Electromedical Products	12
Enviromedica	Inside Front Cover
Essential Formulas	Inside Back Cover
Great Plains Laboratory	27
Hertoghe	91
Jarrow Formulas	9
Dr. Serge Jurasunas	67
Klaire Labs	6-7
Kyowa Hakko	1
Lyme Disease Association	39
Maplewood Company	45
Mountain Peak Nutritionals	10
Mushroom Wisdom	13
Quincy Bioscience	Back Cover
Researched Nutritionals	3, 16, Flyer
Rx Vitamins	41, 85
Scandinavian Formulas	28
Sovereign Laboratories	Flyer
SYI Integrated Health	31
<i>Townsend Letter</i> Classified Ads	87
TruGen3	11
Vitamin C Foundation	83
Women's International Pharmacy	4



Curmudgeon's Corner

by Jacob Schor, ND, FABNO
drjacobschor1@msn.com

Dental Hygiene Slows Alzheimer's Decline

A paper published in March 2016 prompted me to take an extended online wander through PubMed the other day. Let me retrace my steps with you in tow as I ended up somewhere both interesting and sweet. It began with my writing a rushed review of a paper by Ide et al on periodontitis and Alzheimer's disease.^{1,2}

Mark Ide and colleagues at Guy's Hospital in London collected and analyzed data from people with mild to moderate Alzheimer's disease (AD) who were assessed for cognitive function and also for periodontal disease before and after six months. The study followed sixty non-smokers with mild to moderate dementia, who had not been treated for periodontitis in the prior six months. The goal was to see if there was an association between disease symptoms, chronic inflammation, and rate of cognitive decline. Those study participants diagnosed with periodontitis at the start of the study declined much more rapidly than those without this disease; periodontitis was associated with a six-fold increase in the rate of cognitive decline.

This strikes me as an important paper. First, these findings suggest that improving dental hygiene might slow the rate of decline in AD. Second, the results support the new theory that AD is in part an immune response to infection. And third, as there is a long list of naturopathic interventions that offer benefit in periodontal disease, this study begs the question as to whether they might help Alzheimer's disease as well.

Prior studies have reported that AD patients have worse dental health than people of similar ages and that the worse the dementia, the worse the dental health.^{3,4} The assumption has been that with advancing dementia people forget to brush their teeth.⁵ This is the first study, though, that correlates the rate of cognitive decline with poor dental health. Now that we know periodontitis is associated with faster cognitive decline, we certainly should be more proactive promoting dental hygiene in patients with early signs of AD.

The most obvious conclusion from this study is that periodontitis drives Alzheimer's disease progression, especially in light of a new hypothesis that AD is an immune reaction to infection.

In May 2016, Deepak Kumar and colleagues at Harvard suggested that amyloid proteins, which are the hallmark of AD, serve an antimicrobial function; they protect the brain against infection. Kumar suggested that infections trigger an over response by the brain's defense system triggering generation of

excessive amounts of amyloid plaque. Amyloid-Beta of Alzheimer's disease may have an actual purpose in the brain. It helps fight infection; it is now described as "... primary effector molecules of innate immunity, antimicrobial peptides (AMPs)."⁶ If bacteria or viruses slip across the blood brain barrier, the brain generates amyloid-Beta material trapping the invader. The amyloid literally cages the bacteria preventing further invasion. The problem is that the plaque remains after the bacteria die, forming long lasting deposits. While Kumar demonstrated this process in Petri dishes, this periodontitis study is the first study with people to support the theory.

We already know of several chronic infections associated with AD. Shim et al in September 2016, linked Epstein-Barr Virus (EBV) antibodies to cognitive decline and suggested we use EBV antibody levels as a biomarker for assessing rate of disease progression.⁷ Herpes simplex virus-1 antibody titers have also been linked with cognitive impairment.⁸ In fact, enough studies have associated herpes antibody levels with AD, that an August 2016 article suggested using antiviral drugs "...to slow or halt the progression of AD."⁹

Numerous studies link bacterial infection to decline. An August 2016 meta-analysis of 25 separate studies, reported that both *Chlamydia pneumoniae* and spirochete bacteria were strongly associated with risk of AD. Spirochete infections were associated with a ten-fold increase in occurrence of AD. Chlamydia infection was associated with more than a five-fold increase in risk.¹⁰

It may not be the type of infectious agent as much as the chronicity or persistence of the infection that provokes the AD triggering response in the brain. It could take continuous, long lasting antigen exposure to trigger the amyloid response.¹¹

The chain of events that leads to AD may actually start in the gut with intestinal microbiota. An August 2016 paper hypothesized that gut dysbiosis increases intestinal permeability that in turn increases blood brain barrier permeability that in turn bring more antigenic material to the brain and that this surge triggers the amyloid beta production.¹²

If this line of thinking continues to hold, we may have entered a new era in how we treat Alzheimer's disease, one in which we both understand the underlying mechanisms and also have some simple interventions to offer our patients, starting with reminding them to brush their teeth.

childhood; and after COT with extra eye points around the eye (BL-1, BL-2, S-6, GB-1, and ST-1), his vision returned to normal.

Strokes and Root Canals

A 64-year-old woman who had worked for years in her husband's aluminum fabricating business presented with history of CVAs and TIAs. She was hospitalized for her first major stroke in January 2017, at Stanford Hospital. Subsequently, she was having three or four TIAs per week. After starting our usual nutritional anticoagulation regimen with lumbrokinase, cayenne, delta tocotrienols and other herbals, she was only modestly improved. On EAV tooth testing, I found two teeth to be very toxic, especially #2. After injecting the buccal membrane next to #2, a root-canaled tooth, with procaine and ozone, she went to one TIA per two weeks; and now after her third injection, she has had no TIAs in the past two months.

I remember the great work by Thomas Levy, MD, JD, in his book *The Toxic Tooth*; he found that bacteria in infected teeth cause coagulopathy, strokes, heart attacks, and cancer. When a perfectly healthy-appearing patient following a healthy lifestyle and good nutritional support has a stroke, think about checking their teeth for root canals or periodontal infection. Don't forget the retromolar areas where the wisdom teeth were (numbers 1, 16, 17 and 32). They may contain cavitations of chronic infection, poisoning the whole body if they weren't removed properly. Injecting these areas with procaine and ozone and other homeopathics when available is great for symptom relief and calls for more serious intervention and surgery by your biological dentist (IABDM and IAOMT).

Scars

Scars everywhere disrupt acupuncture meridian electrical energy flow. Nothing is more profound than injecting head scars after trauma or craniotomy. Glioma surgery and other head surgeries can leave scars from ear to ear and disrupt six or eight acupuncture meridians. After injecting them with procaine, neurological and behavioral deficits can be reversed and improved.

Eight or ten years ago, a 67-year-old retired teacher from New Orleans presented in our office in a wheelchair and could only turn her head slightly from side to side and barely walked with assistance to go from bed to bathroom. She had been a banjo player and played ice hockey until several injuries. Her surgical history included two abdominal C sections, a 360 degree tummy tuck, and two breast reductions. She had been cut in half energetically at least four times.

After neural therapy to her scars, the next day she walked into the clinic with only a cane and was very animated and happy with much less pain.

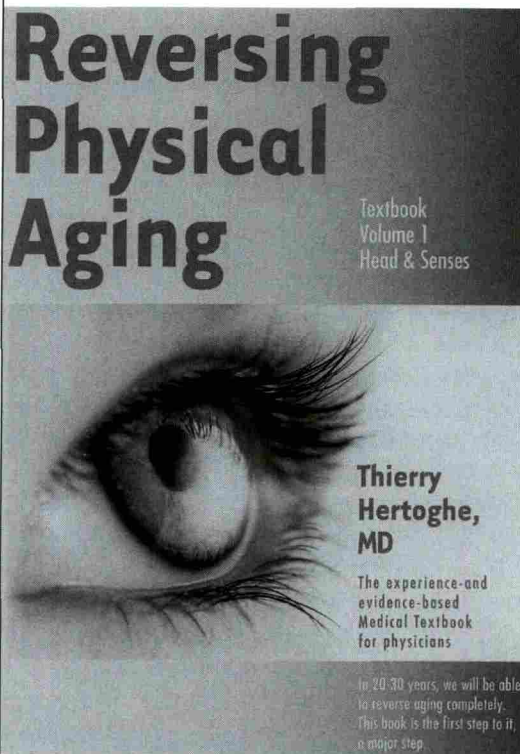
Learning some basic neural therapy can be very rewarding for your patients.

Stroke patients can also benefit by injecting intradermal wheals on the extensor surfaces of neurologically damaged extremities. Whether the patient faces pain, neurological, behavioral, dental, or other issues, NT is one of our most powerful therapies.

Occasionally, patients don't tolerate procaine. With initial detox, dietary changes and bio-identical hormone replacement therapy, the patient may test well for procaine after a few weeks. Ask about their history of adverse effects of dental anesthesia, remembering many of them contain epinephrine which may cause tachycardia and faintness. If you can do EAV or ART before injecting it is a good idea. We sometimes see what we call a two Martini effect, which is usually short lived. Laying the patient on their back with knees up usually helps to relieve any lightheadedness. Also, a glass of water and electrolyte drink mix brings people back up quickly from a transient hypoglycemia. Injecting scars can release heavy metals, other toxins, and emotional releases. A teary "I didn't know they were going to take out my uterus and ovaries as well as my appendix" is not unusual after injecting a hysterectomy scar. Giving the Frankenhauser shot into the pelvis with women who have had sexual abuse can also promote some great emotional releases. These are beneficial, but one needs to be there with the patient and offer emotional support and understanding.

Neural therapy is a fabulous technique to add to your therapeutic arsenal. There is nothing else like it. ♦

Discover Dr. Hertoghe's new book!



« A **practical** and **complete** guide on the aging of the head and the senses.»

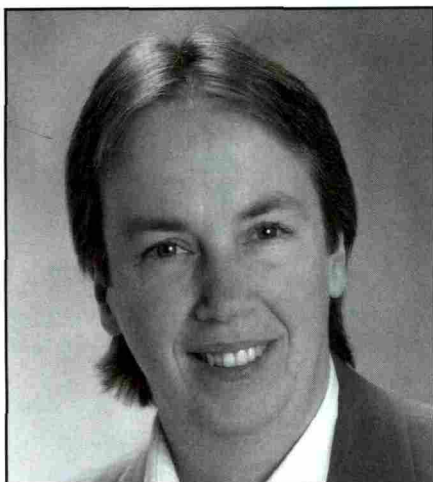
«*Reversing Physical Aging* shows the **best way to make patients healthier.**»

«A textbook **full of innovative information** on the reverse-aging process.»

«**Soon, we will be able to reverse aging completely.** This book is the first step to it, **a major step.**»

«**A textbook that every physician needs.**»

More information on www.hertoghemedicalschool.eu



Women's Health Update

by Tori Hudson, ND
womanstime@aol.com

Enhancing Libido; Improving Depression

***Tribulus terrestris* for Low Libido in Postmenopausal Women**

This clinical study evaluated the effects of treating postmenopausal women with hypoactive sexual desire disorder (HSDD) using *Tribulus terrestris*. All women received testing including mammography, vaginal ultrasounds, and serum levels of prolactin, thyroid stimulating hormone, total testosterone, and sex hormone binding globulin before enrollment. Study participants were randomized to two groups with the treatment group receiving three pills of 250 mg of *Tribulus terrestris* for 120 days and the control group receiving placebo for 120 days.

The Female Sexual Function Index (FSFI) and the Sexual Quotient Female Version (QS-F) questionnaires were used to assess female sexual function. A total of 36 healthy postmenopausal women with low libido were selected to participate in this study in Brazil. All women were between one and ten years postmenopausal and were between 43 and 65 years old. Women were excluded if they had interpersonal relationship problems or had partners with sexual problems.

A total of 36 women, with 20 in the study group and 16 in the placebo group, took part with three drop outs in each group. The total mean score and scores of each of the six FSFI questionnaire domains before and after treatment did not show any significant difference between the two groups. Women receiving the *T terrestris* scored significant improvements in all six domains as did the placebo, with the exception of lubrication which did not improve in the placebo group.

After 120 days of treatment with *T terrestris*, the QS-F indicated significant improvement in the domains of desire, arousal/lubrication, pain and anorgasmia with the placebo group showing no improvements in any of these domains.

The total testosterone levels in both groups did not vary before and after the treatment, although there was a significant increase in the levels of free and bioavailable testosterone in the *T terrestris* group with no increase in the placebo group.

Commentary: To my knowledge, this is the first study suggesting a treatment effect of *T terrestris* for HSDD in postmenopausal women. While there was improvement yet no difference between treatment group and placebo for the FSFI domains except lubrication, which did improve more in the treatment group, that is in fact important for comfort during vaginal penetration. And, if sex is anticipated to be comfortable and pain free, then the desire to have sex tends to improve. The other scale, the QS-F questionnaire, is a tool designed to assess sexual function in Brazilian women specifically. It could be interpreted that this questionnaire is more representative of results in Brazilian women, which might explain the difference in results between the questionnaires.

Dias de Souza K, et al. Efficacy of *Tribulus terrestris* for the treatment of hypoactive sexual desired disorder in postmenopausal women: a randomized, double-blinded, placebo-controlled trial. *Menopause*. 2017; 23;(11): 1252-1256.

Magnesium and Depression

The purpose of this randomized, double-blind, placebo-controlled trial was to determine the effect of magnesium supplementation on individuals suffering from depression who also had magnesium deficiency. Patients were included if they had a depression score of > 11 in the Beck Depression Inventory-II and had a serum magnesium level of < 1.8 mg/dL in men and < 1.9 mg/dL in women. Individuals were then randomized and given either two 250 mg magnesium oxide tablets per day or placebo for two months.

The Beck Depression Inventory-II was used to measure the depression status, which included 21 questions for measuring symptoms of depression (sleep disorders, appetite, self-confidence, hope, sadness). Each of the 21 questions had four options with a scoring system of 0 to 3 for each. A total score was obtained out of the 21 questions which in total ranged from 0 to 63. A normal score was 0-10; mild depression = 11-16; 17-20 requires counseling; 21-30 = moderately depression; 31-40 = severe depression; and 40 or more = very severe depression.

Intake of food, macronutrients and magnesium was measured with a 24-hour dietary recall questionnaire.

Of 650 possible men and women participants, 60 met the inclusion criteria and were randomized to either the magnesium or placebo group. The mean age of individuals was 32 years. Of the 26 participants in the magnesium group, 19 were women and 7 were men. Of the 27 in the placebo group, 20 were women and 7 were men.

The mean Beck score declined significantly in each group after the intervention, although the reduction was greater in the magnesium group compared with the placebo group (-15.65 for magnesium and - 10.40 for placebo). The mean serum magnesium level increased significantly at the end of the study only in the magnesium group. Patients in both groups had hypomagnesemia at the beginning, and at the end, 88.5% of the magnesium group returned to normal serum levels vs 48.1% for the placebo individuals.

Commentary: The role of magnesium in human health is complex and widespread. It is an important co-enzyme for many enzyme systems in the transfer of phosphate and energy metabolism. It has major roles in gene stabilization, DNA replication, protein and nucleic acid synthesis, and macronutrient metabolism. It also regulates and transfers some

ions and is involved in neuro-transmission and neuroplasticity. Magnesium appears to be involved in migraines, Alzheimer's, Parkinson's disease, attention-deficit disorder, and depression.

The effect of dietary magnesium has previously been investigated in relation to depression; and in the majority of those studies, there is a significant relationship between deficiency and incidence of depression. A diet with inadequate sources of dark green leafy vegetables, whole grains, and nuts can easily cause hypomagnesemia and is seen in many metabolic diseases. Hypomagnesemia incidence among depressed individuals is estimated to be as high as 13.7%, which is about three times higher than the value in non-depressed individuals.

While I will likely not routinely measure serum levels of magnesium nor erythrocyte or urine magnesium levels in depressed patients, I will likely consider more strongly the use of increased doses of magnesium at 250 mg twice daily in depression patients. It is possible that lower amounts could be used when using magnesium amino acid chelates as the source of magnesium, rather than magnesium oxide

M-Rajizadeh A, et al. Effect of magnesium supplementation on depression status in depressed patients with magnesium deficiency: A randomized, double-blind, placebo-controlled trial. *Nutrition*. 2017;35:56-60.

Compounded Curcumin Emulsion Product for Injection by ImprimisRx: FDA Investigation – Serious Adverse Events Associated with Use

Two patients administered infusions of curcumin (a component of the spice turmeric) compounded with polyethylene glycol (PEG) 40 castor oil reportedly experienced immediate hypersensitivity reactions. The PEG 40 castor oil was a component of a curcumin emulsion product compounded by a pharmacy, ImprimisRx, located in Irvine, California. Hypersensitivity reactions to intravenous (IV) products containing polyethylene glycol castor oil have been reported in the literature and are the subject of warnings for a number of FDA-approved drugs.

On March 10, 2017, the FDA received an adverse event report concerning a 30-year-old female patient who experienced cardiac arrest after IV administration of a curcumin emulsion product compounded by ImprimisRx. The patient reportedly had a history of allergies and was being treated for eczema by a naturopathic doctor. Within minutes of starting the infusion, the patient became pulseless and required CPR. The patient suffered anoxic (depleted oxygen) brain injury and subsequently died. An adverse reaction to infused curcumin solution was

identified as a cause of death by the local authorities.

On May 1, 2017, FDA received an adverse event report concerning a 71-year-old male patient who developed a hypersensitivity reaction after IV administration of ImprimisRx's compounded curcumin emulsion product. The patient had a history of allergies and was being treated for thrombocytopenia (a low platelet count) at a holistic health center. According to information FDA received from the center, within minutes of starting the infusion, the patient developed a cough and erythema (skin reddening). Diphenhydramine (an antihistamine) was administered; however, symptoms escalated to include shortness of breath, itching, and hypotension (low blood pressure). The patient was treated with IV epinephrine and transferred to a nearby emergency room where he was treated and then released.

On June 23, 2017, ImprimisRx recalled all unexpired products containing the ungraded PEG 40 castor oil.

FDA's investigation into the adverse events associated with ImprimisRx's

curcumin emulsion product for injection highlights some of the risks associated with compounded drugs, particularly those that use non-pharmaceutical grade components and ingredients lacking a USP monograph. The risks illustrated in this case include the following:

- the absence of a label warning about hypersensitivity reactions associated with the PEG 40 castor oil;
- the use of an ungraded inactive ingredient, i.e., PEG 40 castor oil, that is not suitable for human consumption or therapeutic use and may contain impurities such as DEG; and
- the IV administration of curcumin, despite the fact that its safety profile by this route of administration has not been established, nor has its effectiveness in treating eczema or thrombocytopenia.

Healthcare professionals and patients are encouraged to report adverse events or side effects related to the use of these products to the FDA's MedWatch Safety Information and Adverse Event Reporting Program:

- Complete and submit the report online: www.fda.gov/MedWatch/report.
- Download form or call 1-800-332-1088 to request a reporting form, then complete and return to the address on the pre-addressed form, or submit by fax to 1-800-FDA-0178.

Calendar

Please submit an announcement of your event 90 days in advance. Event publication must be limited to 25 words or less. Multiple event listings require paid advertising. Contact calendar@townsendletter.com for details.

SEPTEMBER 28-OCTOBER 1: 8th ANNUAL INTEGRATIVE MEDICINE FOR MENTAL HEALTH CONFERENCE (IMMH) in Orange County, California. CONTACT: <http://www.IMMH2017.com>

SEPTEMBER 29-OCTOBER 1: 10th INTERNATIONAL MEDICAL CONFERENCE-Curing the Incurable, the Fungal, Parasites, Dental Conundrum in St. Louis, Missouri. CONTACT: <http://www.iamconf.com/>

SEPTEMBER 30-OCTOBER 1: WASHINGTON ASSOCIATION OF NATUROPATHIC PHYSICIANS (WANP) ANNUAL CONFERENCE -Primary Care Update in Lynnwood, Washington. CONTACT: <http://www.wanp.org>

OCTOBER 4-8: NEURODEGENERATION-THE IMPACT OF ENVIRONMENTAL INSULT in Grand Rapids, Michigan. CONTACT: <http://icimed.com/conferences/>

OCTOBER 5-8: 15th ANNUAL INTERNATIONAL RESTORATIVE MEDICINE CONFERENCE in Tucson, Arizona. With T3 Certification and Botanical Medicine Intensive with Tieraona Low Dog, MD. CONTACT: <https://restorativemedicine.org/conferences/tucson/> or jen@restorativemedicine.org

OCTOBER 6-8: WEIGHT SYMPOSIUM in Boston, Massachusetts. CONTACT: <https://www.a4m.com/weight-symposium-boston-2017.html>

OCTOBER 7: A NEW & REVOLUTIONARY APPROACH TO ADDRESSING CORONARY HEART DISEASE with Dr. Mark Houston in Rockville, Maryland. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

OCTOBER 7-8: DIGESTIVE MASTERY with Dr. Wally Schmitt in Charlotte, North Carolina. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

OCTOBER 7-8: NEVADA HOMEOPATHIC AND INTEGRATIVE MEDICAL ASSOCIATION (NHIMA) CONFERENCE in Reno, Nevada. CONTACT: 775-742-4695; info@nevadahomeopathy.org; <http://www.nevahomeopathy.org>

OCTOBER 12-14: 26th ANNUAL IAACN SCIENTIFIC SYMPOSIUM – Solving the Disease Crises Caused by Our Toxic Environment in Plano, Texas. CONTACT: 972-407-9089; khenry@clinicalnutrition.com; <http://www.iaacn.org>

OCTOBER 19-21: BIOREGULATORY MEDICINE INSTITUTE CONFERENCE – “Changing Medicine from the Inside” in Louisville, Kentucky. Contact: <https://www.brmi.online/events>

OCTOBER 19-21: GI ADVANCED PRACTICE MODULE – RESTORING GASTROINTESTINAL EQUILIBRIUM in Denver, Colorado. CONTACT: <http://www.functionalmedicine.org/GI>

OCTOBER 20-23: 18th ANNUAL INTERNATIONAL IRIDOLOGY AND INTEGRATIVE MEDICINE HEALTHCARE CONFERENCE in Orlando, Florida. CONTACT: 828-926-6100; <http://iridologycollege.org>

OCTOBER 21: THE MEDICINE OF ENERGY: BIOFIELDS & CELLULAR REGENERATION in West Palm Beach, Florida. CMEs & CEAs available. CONTACT: 561-997-0112; <https://www.a4m.com/the-medicine-of-energy-workshop-west-palm-beach-october-2017.html>

OCTOBER 22-24: DETOX ADVANCED PRACTICE MODULE – BIOTRANSFORMATION AND TOXICITY in Denver, Colorado. Live Streaming Available. CONTACT: <http://www.functionalmedicine.org/Detox>

OCTOBER 22-25: LIFESTYLE MEDICINE 2017 – Transforming Health, Redefining Healthcare in Tucson, Arizona. CONTACT: 971-983-5383; events@lifestylemedicine.org; <https://lifestylemedicineconference.org>

OCTOBER 22-25: AIHM ANNUAL CONFERENCE – PEOPLE, PLANET, PURPOSE in San Diego, California. CONTACT: <https://www.aihm.org/aihm-conference/>

OCTOBER 26-NOVEMBER 1: 44th BIOLOGICAL MEDICINE TOUR TO GERMANY & BADEN BADEN MEDICINE WEEK – “Putting It All Together: A Comprehensive Overview of Effective Modalities in Biological Medicine.” CONTACT: Occidental Institute, 800-663-8342 or 250-490-3318; <http://oirf.com/>

OCTOBER 27-29: ADVANCED APPLICATIONS IN MEDICAL PRACTICE CONFERENCE– 21st Century Metabolic Medicine in Cancer and Chronic Disease in Portland, Oregon. CONTACT: <https://aampportland.com/>

OCTOBER 28: CENTRAL SENSITIVITY SYNDROME with Dr. Mark Force in Sugar Land, Texas. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

OCTOBER 28-29: TCM RESEARCH PEARL OF WISDOM in Vancouver, British Columbia. Topics include Integrative Oncology, Osteoporosis/Traumatic Bone Injury, Hashimoto's and Infertility, Hyperlipidemia. CONTACT: 604-873-3827; <http://redtreewellness.ca/about-us/education>

NOVEMBER 2-3: 2nd PROBIOTICS CONGRESS – USA in San Diego, California. CONTACT: <http://www.global-engage.com/event/probiotics-usa/>

NOVEMBER 4: COMMON CLINICAL SYMPTOMS OF CHRONIC FATIGUE with Dr. Bill Kleber in Boca Raton, Florida. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

NOVEMBER 10-11: SAVELY YURKOVSKY'S FIELD CONTROL THERAPY (FCT®) – Its Major Breakthrough in Bio-Resonance Testing and Combining the Best in Medicine in Chappaqua, New York. CONTACT: 914-861-9161; info@yurkovsky.com ; <http://www.yurkovsky.com>

NOVEMBER 11: HORMONES & CARDIOMETABOLIC FUNCTION with Dr. Jack Monaco in Windsor, Connecticut. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

NOVEMBER 11-12: GREAT PLAINS LABORATORY PRACTITIONER WORKSHOP in West Palm Beach, FL. This workshop reviews organic acids testing, genetic testing, and toxic chemical testing. CONTACT: 913-341-8949; <http://www.GPLUniversity.com>

NOVEMBER 20-21: OZONE THERAPY CERTIFICATION COURSE with Bryan Rade, ND, in Halifax, Nova Scotia. Space limited to eight attendees for optimal instructor to student ratio. CONTACT: eastcoastnaturopathic@gmail.com

DECEMBER 2: AUTISM – UNRAVELING THE MYSTERY with Dr. Court Vreeland in Charlotte, North Carolina. CONTACT: Biotics Research, 800-231-5777; <http://www.BioticsResearch.com>

DECEMBER 14-16: A4M & MMI WORLD CONGRESS in Las Vegas, Nevada. Pre-Conference on **DECEMBER 12-13**. CONTACT: 561-997-0112; <https://www.a4m.com/world-congress-2017/home.html>

JANUARY 25-FEBRUARY 9, 2018: INTENSIVE CLINICAL TRAINING IN INDIA in Calcutta, India. 200+ live cases demonstrated to show action of homeopathy in gross pathologies. CONTACT: <http://www.homeopathy-course.com/index.php/training-courses/india-homoeopathy-training/2-week-clinical-training-in-calcutta>

FEBRUARY 9-11: LABRIX ADVANCED WORKSHOP in Las Vegas, Nevada. Adrenal/HPA axis hormone and neurotransmitter testing and treatment protocols. CONTACT: <https://www.labrix.com/law>

APRIL 5-7: THE FORUM FOR INTEGRATIVE MEDICINE – “Treating the Untreatable: Unraveling Complex Chronic Illness” in Chicago, Illinois. CONTACT: forumforintegrativemedicine.org

APRIL 6-8: ENVIRONMENTAL HEALTH SYMPOSIUM 2018 in Scottsdale, Arizona. Effective methods and interventions for reducing toxic load and body burden. CONTACT: 855-347-4477; <http://www.EHS2018.com>

APRIL 6-8: 13th ANNUAL JOINT AMERICAN HOMEOPATHIC CONFERENCE – “Homeopathy: An Affordable Healthcare Solution” in Phoenix, Arizona. CONTACT: www.homeopathycenter.org

APRIL 18-22: INTERNATIONAL COLLEGE OF INTEGRATIVE MEDICINE SPRING CONFERENCE – “What Works” in Cincinnati, Ohio. CONTACT: <http://icimed.com/>

APRIL 20-21: INTEGRATIVE MEDICINE FOR THE TREATMENT OF TICK-BORNE DISEASES in Baltimore, Maryland. CONTACT: delmarvalyme@yahoo.com; <http://integrativelyme.com>

OCTOBER 18-22: INTERNATIONAL COLLEGE OF INTEGRATIVE MEDICINE – An Orthomolecular Approach to Cancer in Minneapolis, Minnesota. CONTACT: <http://icimed.com/>



Intravenous Vitamin C, Hydrocortisone, and Thiamine: A Major Advance in the Treatment of Severe Sepsis and Septic Shock

The results of a new study suggest that intravenous administration of vitamin C in combination with hydrocortisone and thiamine can markedly decrease the mortality rate and preserve organ function in patients with severe sepsis and septic shock.

Sepsis is a life-threatening condition that occurs when the body mounts an intense immune/inflammatory response to an infection, resulting in tissue and organ damage. Severe sepsis is defined as sepsis associated with organ dysfunction or impaired blood flow to one or more parts of the body. Septic shock is defined as severe sepsis accompanied by hypotension that does not respond adequately to fluid replacement. In developed countries, the 28-day mortality rates from sepsis and septic shock are around 25% and 50%, respectively. These rates are even higher in developing countries. Conventional treatment consists mainly of intravenous antibiotics, supportive care, and vasopressor agents to treat hypotension. Despite decades of research and numerous clinical trials, no other drugs have been clearly shown to improve outcomes in patients with sepsis.

Vitamin C has multiple effects that might be expected to be beneficial for patients with severe sepsis or septic shock. These include free radical-scavenging and antioxidant activity; enhancing tissue integrity, endothelial function, and blood flow; functioning as a cofactor in the synthesis of catecholamines; and increasing the body's sensitivity to vasopressor agents. Serum levels of vitamin C are typically very low in patients with sepsis, and as much as 3 g per day of intravenous vitamin C is needed to bring those levels up to normal. In animal studies, administration of large doses of vitamin C was effective for preventing and treating hemorrhagic shock.¹⁻³ Frederick Klenner, a pioneer in the use of large doses of vitamin C, stated that shock can be reversed in minutes by giving 12 g of vitamin C intravenously in a 50-ml syringe.⁴

In a study published in 2014, 24 patients with severe sepsis were randomly assigned to receive, in double-blind fashion, intravenous vitamin C or placebo (5% dextrose) every six hours for four days. Vitamin C was given at a total daily dose of 50 or 200 mg per kg of body weight. Patients receiving

vitamin C, but not those given placebo, exhibited prompt improvements in Sequential Organ Failure Assessment (SOFA) score, indicating an improvement in sepsis-associated organ dysfunction. No adverse effects of vitamin C were observed.⁵

Beginning in January 2016, Paul Marik, MD, and coworkers at Sentara Norfolk General Hospital (which is affiliated with Eastern Virginia Medical School) began administering the combination of vitamin C, hydrocortisone, and thiamine to all patients with severe sepsis or septic shock.⁶ This protocol was instituted after these practitioners observed a dramatic recovery in three patients with fulminant sepsis who were almost certainly going to die from septic shock. After treatment with intravenous vitamin C and hydrocortisone, all three patients recovered rapidly with no residual organ dysfunction. Hydrocortisone (without vitamin C) is frequently given to patients with severe sepsis, although a randomized controlled trial found that it does not improve outcomes.⁷ Marik and associates included hydrocortisone in their protocol because of evidence that it may act synergistically with vitamin C



in patients with severe sepsis. Thiamine was also given, because thiamine deficiency is common in septic patients and is associated with an increased risk of death.

The treatment protocol was as follows (all treatments were given intravenously): Vitamin C: 1.5 g every six hours for four days or until discharge from the intensive care unit (ICU). Hydrocortisone: 50 mg every six hours for seven days or until ICU discharge, followed by a tapering dose over three days. Thiamine: 200 mg every 12 hours for four days or until ICU discharge. The 47 patients who received this treatment (treatment group) were compared with a control group of 47 patients with severe sepsis or septic shock treated at the same hospital between June 2015 and December 2015. None of the patients in the control group received intravenous vitamin C or thiamine, but 60% received intravenous hydrocortisone at the discretion of the treating physician.

The hospital mortality rate was 8.5% (4 of 47) in the treatment group and 40.4% (19 of 47) in the control group (78.9% reduction; $p < 0.01$). None of the patients in the treatment group died of complications related to sepsis; rather,

the four patients who died succumbed to complications of their underlying disease. The SOFA score decreased (improved) in all patients in the treatment group, with none developing progressive organ failure. Approximately two-thirds of the patients in each group had acute kidney injury at presentation. However, significantly fewer patients in the treatment group than in the control group ended up requiring dialysis or other renal replacement therapy (10% vs. 37%; $p = 0.02$). All patients in the treatment group were weaned off vasopressors at a mean of 18.3 hours after starting vitamin C, and the dose of vasopressors was typically reduced at 2-4 hours after the first vitamin C infusion. In contrast, nine patients in the control group required increasing doses of vasopressors and died of refractory septic shock. In the treatment group, renal function improved in all patients with acute kidney injury.

If confirmed by randomized controlled trials, this treatment will revolutionize the care of septic patients. Already, more than 50 medical centers are using Marik's protocol, and they are reportedly seeing the same dramatic benefits.⁸ Others remain skeptical and would like to see the results of

controlled trials before changing the standard of care in their intensive care units. One concern is that high-dose vitamin C can cause the deposition of oxalate in soft tissues of patients with compromised renal function, potentially resulting in worsening renal function and damage to other tissues. That concern is why Marik limited the dose of intravenous vitamin C to 6 g per day, even though some practitioners have used much higher doses to treat burns, viral illnesses, and other conditions. As noted above, renal function improved in all patients with acute kidney injury who received vitamin C. It is possible that the inclusion of thiamine in the treatment protocol minimized the increase in oxalate levels, since thiamine deficiency is thought to increase the conversion of glyoxylate (a byproduct of amino acid metabolism) to oxalate.

Randomized controlled trials should also investigate whether the addition of hydrocortisone increases, decreases, or has no effect on the efficacy of vitamin C and thiamine.

Alan R. Gaby, MD

References

1. de Pasqualini CD. The effect of ascorbic acid on hemorrhagic shock in the guinea pig. *Am J Physiol.* 1946;147:598-601.
2. Stewart CP, et al. Intravenous ascorbic acid in experimental acute hemorrhage. *Lancet.* 1941;1:818-820.
3. Mays BW, et al. Ascorbic acid improves survival and decreases pulmonary neutrophil sequestration in hemorrhagic shock. *J Trauma Injury Infect Crit Care.* 1997;42:156.
4. Klenner FR. Significance of high daily intake of ascorbic acid in preventive medicine. *J Int Acad Prev Med.* 1974;1(1):45-69.
5. Fowler AA III, et al. Phase I safety trial of intravenous ascorbic acid in patients with severe sepsis. *J Transl Med.* 2014;12:32.
6. Marik PE, et al. Hydrocortisone, vitamin C, and thiamine for the treatment of severe sepsis and septic shock: a retrospective before-after study. *Chest.* 2017;151:1229-1238.
7. Sprung CL, et al. Hydrocortisone therapy for patients with septic shock. *N Engl J Med.* 2008;358:111-124.
8. Morrison J. Could Vitamin C Be the Cure for Deadly Infections? <http://www.smithsonianmag.com/science-nature/could-deadly-infections-be-cured-vitamin-c-180963843>

Upcoming in our November Issue

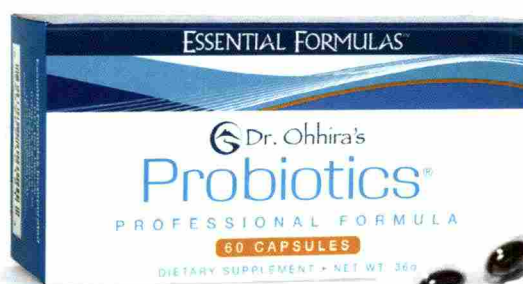
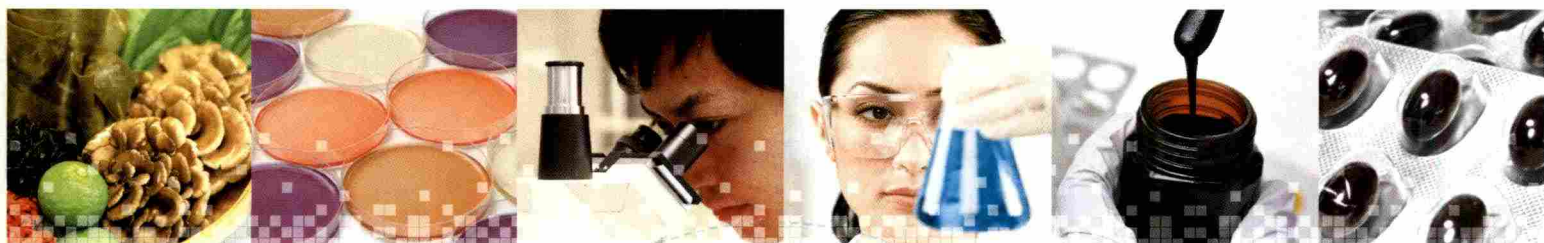
Is Neural Therapy the treatment we have been overlooking in patients dealing with chronic pain?

Tracy Brobyn, MD, Myung Kyu Chung, MD,
and Patrick LaRiccia, MD, examine Neural Therapy.

Is Adrenal Fatigue the correct diagnosis?

Holly Lucille, ND, thinks that we frequently make this diagnosis without considering underlying conditions.

Discover the Dr. Ohhira Difference!™



While many digestive health formulas only contain probiotics, **Dr. Ohhira's Probiotics®** contains all the pieces your patient's need for optimal health, digestion and immune support: **PRE**biotics, **PRO**biotics, and **POST**biotics.* Dr. Ohhira's award-winning, professional strength formula is **fermented for five years** which results in a truly unique probiotic supplement with three advanced components:

PREbiotics—fermented fruits & vegetables that cultivate the existing good bacteria in the gut*

PRObiotics—numerous strains of living probiotics including *Bifidobacterium* and *Lactobacillus* that promote healthy digestion and immune response*

POSTbiotics—amino acids, vitamins, minerals, and natural organic acids that are produced by the fermentation process and are essential for whole health*

Help your patients Discover the Dr. Ohhira Difference!™

ESSENTIAL FORMULAS®
P R O F E S S I O N A L

For More Information visit: www.essentialformulas.com/professionalformula • (972) 255-3918

DISTRIBUTED BY
emerson
ECOLOGICS®

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

Dr. Ohhira's Probiotics® is a registered trademark of Essential Formulas Incorporated.

Prevagen®

Improves Memory*

Get a FREE Prevagen Professional Product Kit.

Call 888.895.6463 Today!

- Clinical Study
- Prevagen Professional Bottle
- Product Brochure



Prevagen. The Name To Remember.®

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.